RTI Connext C# API

Version 7.7.0

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Chapter 1

Welcome to the RTI Connext C# API!

Core Libraries and Utilities

Real-Time Innovations, Inc.

RTIő Connextő DDS is a connectivity framework for building distributed applications with requirements for high performance and scalability.

The **RTI Connext C# API** is a modern, multi-platform language binding for *Connext*.

1.1 Getting Started

The `Getting Started Guide` helps you **build and run your first RTI Connext DDS C# application** while learning general concepts of Connext DDS.

1.2 Available Documentation

- To find a class or method, go to **Quick Reference (**p. **35)** or use the search box.
- For short code examples that demonstrate how to use the API, see **Programming Snippets** (p. 36).
- Full applications demonstrating different features are available in the `RTI Community GitHub repository`. For integration with Unity, see `this tutorial`.
- See also the `Core Libraries Release Notes` (including Known Issues with the C# API) and API **Conventions** (p. 36).
- To see which platforms support the .NET (C#) API, consult the `Platform Notes`. See the Supported Features table at the start of each operating system's chapter.
- The `6.1.0 migration guide` provides useful information for developers of the legacy C++/CLI .NET API.
- Find more documentation about RTI Connext, including the User's Manual, at `https://community.rti.com/documentation`

We welcome any input on how to improve RTI Connext to suit your needs. If you have questions or comments about this release, please visit the RTI Customer Portal at `https://support.rti.com`.

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Chapter 6

File Index

6.1 File List

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Chapter 7

Module Documentation

7.1 Error management

How DDS errors are notified as exceptions in the API.

How DDS errors are notified as exceptions in the API.

Most methods in the C# API report errors as **exceptions** associated with the `standard DDS error codes`.

The following table associates each DDS error code with an exception:

Error code	Exception
DDS_RETCODE_OK	(No exception)
DDS_RETCODE_ERROR	**Omg.Dds.Core.DdsException** (p. 409)
DDS_RETCODE_NO_DATA	(No exception, usually an empty collection is returned)
DDS_RETCODE_BAD_PARAM	System.ArgumentException or System.↩ NullArgumentException
DDS_RETCODE_PRECONDITION_NOT_MET	**Omg.Dds.Core.PreconditionNotMet↩ Exception** (p. 852)
DDS_RETCODE_ILLEGAL_OPERATION	System.InvalidOperationException
DDS_RETCODE_OUT_OF_RESOURCES	**Omg.Dds.Core.OutOfResourcesException** (p. 824)
DDS_RETCODE_NOT_ENABLED	**Omg.Dds.Core.NotEnabledException** (p. 816)
DDS_RETCODE_IMMUTABLE_POLICY	**Omg.Dds.Core.ImmutablePolicyException** (p. 658)
DDS_RETCODE_INCONSISTENT_POLICY	**Omg.Dds.Core.InconsistentPolicy↩ Exception** (p. 659)
DDS_RETCODE_ALREADY_DELETED	System.ObjectDisposedException
DDS_RETCODE_TIMEOUT	System.TimeoutException
DDS_RETCODE_UNSUPPORTED	System.NotSupportedException
DDS_RETCODE_NOT_ALLOWED_BY_SECURITY	**Omg.Dds.Core.NotAllowedBySecurity↩ Exception** (p. 816)

In most cases, the exception `Message` includes additional information about the error. This information may also be logged by **`Rti.Config.Logger`** (p. 728).

Depending on the verbosity, **`Rti.Config.Logger`** (p. 728) will also log warnings and other informational messages that don't cause an exception.

Note

Errors that occur before the creation of the application's first `DomainParticipant` are also logged by **`Rti.Config.Logger`** (p. 728), but the exception they produce may not include the details in its `Message`.

Methods and properties **never return null** to indicate an error. When a method can return `null` (for example, **Rti.Dds.Domain.DomainParticipant.LookupDataReader()** (p. 459)), it is explicitly documented and the method has the attribute `[return: MaybeNull]`.

Methods and properties in general don't accept `null` arguments either. If an argument of property can be `null` (for example **Rti.Dds.Core.QosProvider.DefaultProfile** (p. 924)), it also documents it and has the `[AllowNull]` attribute.

7.2 Object lifecycle

How objects are generally created and destroyed in the API.

How objects are generally created and destroyed in the API.

Some types in the C# API implement the `System.IDisposable` inferface and may need to be **explicitly disposed** to release middleware resources (either by calling `Dispose()` or automatically with a `using` statement).

Objects in the API can be generally categorized in the following categories regarding their lifecycle:

Type category	Examples	Explicit disposal required?
Types that don't implement `IDisposable`	QoS policies	No. It is always garbage-collected automatically.
Types that implement `IDisposable` and are created from a factory type	Entity types, LoanedSamples	Yes. The object and its resources are not released until the object or its factory are explicitly disposed
Rest of `IDisposable` types that don't document this behavior explicitly	WaitSet, DynamicData	It's optional. The object can be garbage-collected or explicitly disposed.

Notes:

- DomainParticipants need to be explicitly disposed; the DomainParticipantFactory will not dispose its contained DomainParticipants. Disposing the DomainParticipantFactory itself is not necessary.
- See **LoanedSamples** (p. 716) and **LoanedSample** (p. 714) for important notes.

7.3 Quick Reference

All the classes are contained in the namespaces

- **Rti** (p. 70)
- **Omg** (p. 61)

The links that follow provide quick access to the most important classes.

Links to the main DDS Entities:

- **Rti.Dds.Core.Entity** (p. 596)
- **Rti.Dds.Domain.DomainParticipantFactory** (p. 478)
- **Rti.Dds.Domain.DomainParticipant** (p. 451)
- **Rti.Dds.Topics.Topic** (p. 1145)
- **Rti.Dds.Topics.ContentFilteredTopic** (p. 230)
- **Rti.Dds.Publication.Publisher** (p. 884)
- **Rti.Dds.Publication.DataWriter** (p. 336)
- **Rti.Dds.Subscription.Subscriber** (p. 1090)
- **Rti.Dds.Subscription.DataReader** (p. 243)

Links to several Topic-Types:

- **Example.MyType** (p. 801) is a C# class generated from an example IDL definition
- **Rti.Types.Dynamic.DynamicData** (p. 564)
- **Rti.Types.Builtin** (p. 121)

Links to the Request-Reply classes:

- **Rti.RequestReply.Requester** (p. 971)
- **Rti.RequestReply.Replier** (p. 951)
- **Rti.RequestReply.SimpleReplier** (p. 1061)

Links to configuration-related classes and utilities:

- **Rti.Dds.Core.QosProvider** (p. 910)
- **Rti.Config.Logger** (p. 728)
- **Rti.Utility** (p. 123)

7.4 Conventions

This section covers general conventions followed throughout the API.

Modules

- **Error management**

  How DDS errors are notified as exceptions in the API.
- **Object lifecycle**

  How objects are generally created and destroyed in the API.

7.4.1 Detailed Description

This section covers general conventions followed throughout the API.

7.5 Programming Snippets

Code snippets that show how to use the RTI Connext C# API.

Modules

- **Entity examples**

  *How to use **Rti.Dds.Core.Entity** (p. 596) types: set QoS, monitor status changes, and more.*
- **Publication examples**

  How to publish a topic and work with Publishers and DataWriters.
- **Subscription examples**

  How to subscribe to a topic and work with Subscribers and DataReaders.
- **IDL examples**

  How to use C# classes generated from IDL by rtiddsgen.
- **DynamicData examples**

  How to publish and subscribe to topics for dynamically-defined types.
- **XML application examples**

  How to define DDS applications in XML.
- **Logging, version and utilities examples**

  Miscellaneous examples, such as configuring logging, printing the current version and other utilities.
- **Request-Reply Examples**

  How to use the C# Request-Reply API.

7.5.1 Detailed Description

Code snippets that show how to use the RTI Connext C# API.

Each section provides code snippets for common operations in the RTI Connext C# API. Use these snippets as reference on how to effectively use the API.

Note

If you're not familiar with DDS, the `RTI Connext DDS Getting Started Guide` walks you through the DDS concepts you need to understand. It includes practical exercises available in several programming languages, including C#.

For more code examples, see the `RTI Community GitHub repository`

7.6 Entity examples

How to use **Rti.Dds.Core.Entity** (p. 596) types: set QoS, monitor status changes, and more.

How to use **Rti.Dds.Core.Entity** (p. 596) types: set QoS, monitor status changes, and more.

The following code snippets show common operations for all **Rti.Dds.Core.Entity** (p. 596) types, including:

- **Rti.Dds.Domain.DomainParticipant** (p. 451)
- **Rti.Dds.Topics.Topic** (p. 1145)
- **Rti.Dds.Publication.Publisher** (p. 884)
- **Rti.Dds.Subscription.Subscriber** (p. 1090)
- **Rti.Dds.Publication.DataWriter** (p. 336)
- **Rti.Dds.Subscription.DataReader** (p. 243)

Sections:

- **Configuring an Entity's QoS** (p. 38)
- **Monitoring an Entity's Status Changes** (p. 39)
- **Disposing an Entity** (p. 40)
- **Accessing Information on Entity Discovery** (p. 40)

7.6.1 Configuring an Entity's QoS

Example: set the default DomainParticipantQos for new DomainParticipants

```
var factory = Rti.Dds.Domain.DomainParticipantFactory.Instance;
// This assignment does several things:
// 1) Gets the current default DomainParticipantQos
// 2) Creates a new DefaultParticipantQos object by modifying two
//    policies (Property and Database)
// 3) Uses this object to set a new default DomainParticipantQos
factory.DefaultParticipantQos = factory.DefaultParticipantQos
    .WithProperty(policy => policy.Add("CompanyName", "Acme, Inc."))
    .WithDatabase(policy => policy.ShutdownCleanupPeriod = Duration.FromMilliseconds(100));
// This DomainParticipant uses the new DomainParticipantQos we just set
using Rti.Dds.Domain.DomainParticipant participant =
    factory.CreateParticipant(domainId: 0);
Debug.Assert(
    participant.Qos.Property.Value["CompanyName"].Value == "Acme, Inc.");
```

Example: set the default DataReaderQos for new DataReaders created from a Subscriber

```
Rti.Dds.Subscription.Subscriber subscriber =
    participant.CreateSubscriber();
// Update the default QoS as we did in the previous example
subscriber.DefaultDataReaderQos = subscriber.DefaultDataReaderQos
    .WithReliability(policy => policy.Kind = ReliabilityKind.Reliable)
    .WithDurability(policy => policy.Kind = DurabilityKind.TransientLocal)
    .WithHistory(policy =>
    {
        policy.Kind = HistoryKind.KeepLast;
        policy.Depth = 20;
    });
// The new QoS we just set applies to all new readers created by this
// subscriber
var reader = subscriber.CreateDataReader(topic);
Debug.Assert(
    reader.Qos.Durability.Kind == DurabilityKind.TransientLocal);
```

Example: create a DataReader with specific QoS

```
Rti.Dds.Subscription.Subscriber subscriber =
    participant.CreateSubscriber();
// Create a DataReaderQos as a copy of subscriber.DefaultDataReaderQos
// with a few changes.
//
// Each "With<Policy>" call returns a new DataReaderQos
// object with the same values as before, except for the new policy
// that is being set. At the end, readerQos is a new object containing
// the values we set for the Reliability, Durability, ResourceLimits, and
// Property QoS policies.
// The rest of the QoS policies retain the value in subscriber.DefaultDataReaderQos.
DataReaderQos readerQos = subscriber.DefaultDataReaderQos
    .WithReliability(policy => policy.Kind = ReliabilityKind.Reliable)
    .WithDurability(policy => policy.Kind = DurabilityKind.TransientLocal)
    .WithResourceLimits(policy =>
    {
        policy.InitialSamples = 10;
        policy.MaxSamples = 40;
        policy.MaxSamplesPerInstance = 10;
    })
    .WithProperty(policy =>
    {
        policy.Add("Company", "Acme, Inc.");
        policy.Add("Group", "GroupA");
    });
// Create the DataReader with the QoS we just defined
var reader = subscriber.CreateDataReader(topic, readerQos);
Debug.Assert(
    reader.Qos.Property.Value["Company"].Value == "Acme, Inc.");
```

Example: modify a mutable DataReader QoS policy after creation

```
Rti.Dds.Subscription.DataReader<Example.MyType> reader =
    subscriber.CreateDataReader(topic);
reader.Qos = reader.Qos
    .WithProperty(property => property["Group"] = "GroupB");
Debug.Assert(reader.Qos.Property.Value["Group"].Value == "GroupB");
```

Example: create a DataReader with a built-in QoS profile

```
// The built-in profiles are available in any QosProvider, including
// the default one. The default QosProvider also automatically loads
// the profiles in the file USER_QOS_PROFILES.xml in the working
// directory if it exists, and a few other locations.
var strictReliableQos = QosProvider.Default.GetDataReaderQos(
    "BuiltinQosLib::Generic.StrictReliable");
// You can optionally modify additional QoS policies:
strictReliableQos = strictReliableQos.WithSubscriptionName("MyReader");
// Create the DataReader with the QoS we just defined
var reader = subscriber.CreateDataReader(topic, strictReliableQos);
```

Example: create a DataReader with a custom QoS profile

```
// To load a custom XML file with QoS profiles, create a QosProvider
var qosProvider = new QosProvider("MyProfiles.xml");
var subscriberQos = qosProvider.GetSubscriberQos("MyLibrary::MyProfile");
var subscriber = participant.CreateSubscriber(subscriberQos);
// If you don't specify a "Library::Profile" string, the QosProvider will
// look for one with the attribute is_default_qos="true"
var readerQos = qosProvider.GetDataReaderQos();
var reader = subscriber.CreateDataReader(topic, readerQos);
```

These examples from the **rticonnextdds-examples** GitHub repository show other uses cases related to configuring QoS:

- `Printing QoS`
- `Group Coherent Presentation`,
- `Custom Flow Controller`,
- `Multichannel`

7.6.2 Monitoring an Entity's Status Changes

Example: set up events to handle status updates for an Entity

```
// The event handlers for status updates can be set at the moment of
// creation to avoid missing any status update.
var reader = subscriber.CreateDataReader(
    topic,
    preEnableAction: reader =>
    {
        // In this function, reader has not been enabled yet
        reader.SubscriptionMatched += (_, status)
            => Console.WriteLine($"Total matched publications = {status.TotalCount}");
        reader.LivelinessChanged += MyLivelinessChangedHandler;
    });
// Event handlers can be removed or added after creation:
reader.LivelinessChanged -= MyLivelinessChangedHandler;
reader.RequestedIncompatibleQos += (_, status) =>
{
    var policy = status.LastPolicy.Name;
    Console.WriteLine($"Incompatible QoS: {policy}");
};
// To remove multiple events handlers:
reader.ResetEvents(StatusMask.SubscriptionMatched | StatusMask.DataAvailable);
// To remove all event handlers:
reader.ResetEvents(StatusMask.All);
```

Example: lookup the current status of an Entity

```
var samplesLost = reader.SampleLostStatus.TotalCount;
var incompatiblePublications = reader.RequestedIncompatibleQosStatus.TotalCount;
Console.WriteLine($"Reader has lost {samplesLost} samples and found {incompatiblePublications} incompatible
   publications");
```

The `Instance Statistics` example from the **rticonnextdds-examples** GitHub repository shows how to look up statistics related to a DataWriter and a DataReader.

7.6.3 Disposing an Entity

An Entity can be deleted by explicitly disposing it or by disposing its factory. In many applications, it is only necessary to dispose the DomainParticipants.

To dispose an entity call its `Dispose()` method or scope it with the `using` keyword.

See, for example, **Writing data and instances** (p. 41).

7.6.4 Accessing Information on Entity Discovery

Information about discovered DomainParticipants, DataReaders, and DataWriters can be accessed using the built-in discovery readers in **Rti.Dds.Domain.DomainParticipant.BuiltinSubscriber** (p. 467). See the `Builtin Topics` example from the **rticonnextdds-examples** GitHub repository.

You can also look up information about the publications/subscriptions that match with a local subscription/publication. See **Looking up matched publications** (p. 48).

7.7 Publication examples

How to publish a topic and work with Publishers and DataWriters.

How to publish a topic and work with Publishers and DataWriters.

Sections:

- **Writing data and instances** (p. 41)
- **Configuring a Publisher** (p. 42)
- **Looking up a previously created Entity** (p. 43)
- **Looking up a matched subscription** (p. 43)

See also **Entity examples** (p. 37) for examples that affect all DDS Entities, including Publishers and DataWriters.

7.7.1 Writing data and instances

Example: create a DataWriter using default QoS and publish a data sample

```
// Create a DomainParticipant on domain 0
var factory = Rti.Dds.Domain.DomainParticipantFactory.Instance;
using Rti.Dds.Domain.DomainParticipant participant =
    factory.CreateParticipant(domainId: 0);
// Create a topic  called "Square" for the type Shape
Rti.Dds.Topics.Topic<Shape> topic =
    participant.CreateTopic<Shape>("Square");
// In many cases there is no need to explicitly create a Publisher;
// the ImplicitPublisher can be used to create the DataWriter.
Rti.Dds.Publication.DataWriter<Shape> writer =
    participant.ImplicitPublisher.CreateDataWriter(topic);
// Create a data sample
var shape = new Shape
{
    color = "GREEN",
    shapesize = 50,
    x = 0,
    y = 20
};
writer.Write(shape);
```

The IDL definition of the `Shape` type used in the example is the following:

```
module Example {
    struct Shape {
        @key string<128> color;
        int32 x;
        int32 y;
        int32 shapesize;
    };
};
```

For more information about IDL types, see **IDL examples** (p. 49).

Example: registering and disposing an instance

```
// When writing the same instance multiple times, register it first
// and then pass the instance handle to Write. This makes the operation
// more efficient.
var greenHandle = writer.RegisterInstance(new Shape { color = "GREEN" });
var shape = new Shape
{
    color = "GREEN",
    shapesize = 50,
    x = 0,
    y = 20
};
for (int i = 0; i < 100; i++)
{
    shape.x = i;
    writer.Write(shape, greenHandle);
}
// To indicate that the instance is no longer part of the system,
// call DisposeInstance. A status update will be received as part of
// sample.Info.State.Instance on the reader side.
writer.DisposeInstance(greenHandle);
```

Example: writing data with additional parameters

```
var greenHandle = writer.RegisterInstance(new Shape { color = "GREEN" });
var shape = new Shape
{
    color = "GREEN",
    shapesize = 50,
    x = 0,
    y = 20
};
// Write a sample with additional parameters:
writer.Write(shape, new WriteParams
{
    // Set the instance handle to make the write operation faster
    InstanceHandle = greenHandle,
    // Set an arbitrary timestamp. The reader will see it in
    // sample.Info.SourceTimestamp.
    SourceTimestamp = Time.FromSeconds(1),
```

```
        // Send an arbitrary integer flag. The reader will see it in
        // sample.Info.Flag. This can be used to attach some meta-data to
        // each sample without changing the type definition.
        Flag = 1234
        // ...
    });
```

These examples from the **rticonnextdds-examples** GitHub repository show other advanced ways to write data:

- `Asynchronous Publication`
- `Custom Flow Controller`
- `Multichannel`

Instance management is discussed in the *Keys and Instances* section of the `Getting Started Guide`, which explains how to use the following methods:

- **Rti.Dds.Publication.DataWriter.DisposeInstance()** (p. 165)
- **Rti.Dds.Publication.DataWriter.LookupInstance()** (p. 340)
- **Rti.Dds.Publication.DataWriter.GetKeyValue()** (p. 341)
- **Rti.Dds.Publication.DataWriter.UnregisterInstance()** (p. 165)

7.7.2 Configuring a Publisher

Example: create a publisher with a Partition QoS

```
// Create a explicit Publisher with a Partition QoS
var publisherQos = participant.DefaultPublisherQos
    .WithPartition(p => p.Add("A"));
Publisher publisher = participant.CreatePublisher(publisherQos);
// All the DataWriters created from this Publisher will communicate
// only with DataReaders in a matching partition.
var writer1 = publisher.CreateDataWriter(topic1);
var writer2 = publisher.CreateDataWriter(topic2);
```

These examples from the **rticonnextdds-examples** GitHub repository demonstrate uses cases that involve a Publisher:

- `Partitions`
- `Group Coherent Presentation`

7.7.3 Looking up a previously created Entity

Example: lookup a previously-created DataWriter

```
// Create a publisher and two writers. Each entity can optionally have
// an arbitrary name assigned as part of its QoS.
var publisher = participant.CreatePublisher(
    participant.DefaultPublisherQos.WithPublisherName("MyPublisher"));
DataWriter<Shape> writer1 = publisher.CreateDataWriter(topic1);
DataWriter<Shape> writer2 = publisher.CreateDataWriter(
    topic2,
    publisher.DefaultDataWriterQos.WithPublicationName("MyWriter2"));
// ...
// Look up the previously created writers by their topic name
AnyDataWriter lookupWriter1 = publisher.LookupDataWriter(topic1.Name);
Debug.Assert(writer1 == (DataWriter<Shape>) lookupWriter1);
AnyDataWriter lookupWriter2 = publisher.LookupDataWriter(topic2.Name);
Debug.Assert(writer2 == (DataWriter<Shape>) lookupWriter2);
// Look up a writer by entity name (only if a name was assigned in the QoS)
lookupWriter2 = publisher.LookupDataWriterByName("MyWriter2");
Debug.Assert(writer2 == (DataWriter<Shape>) lookupWriter2);
lookupWriter2 = participant.LookupDataWriter("MyPublisher::MyWriter2");
Debug.Assert(writer2 == (DataWriter<Shape>) lookupWriter2);
// Access all writers
foreach (AnyDataWriter writer in publisher.DataWriters)
{
    IAnyTopic relatedTopic = writer.TopicUntyped;
    Console.WriteLine($"DataWriter for topic {relatedTopic.Name} and type {relatedTopic.TypeName}");
}
// Access all writers in all publishers
foreach (Publisher pub in participant.Publishers)
{
    string pubName = pub.Qos.PublisherName.Name ?? "(unnamed)";
    Console.WriteLine($"Publisher: {pubName}");
    foreach (AnyDataWriter writer in pub.DataWriters)
    {
        IAnyTopic relatedTopic = writer.TopicUntyped;
        Console.WriteLine($"- DataWriter for topic {relatedTopic.Name} and type {relatedTopic.TypeName}");
    }
}
```

7.7.4 Looking up a matched subscription

Example: lookup matched subscriptions

```
// Look up all the subscriptions:
foreach (var subscription in writer.GetMatchedSubscriptionData())
{
    // subscription name is available if the reader was created with
    // DataReaderQos.WithSubscriptionName
    string name = subscription.SubscriptionName.Name;
    string typeName = subscription.TypeName;
    // ...
}
```

See also **Looking up matched publications** (p. 48) and **Accessing Information on Entity Discovery** (p. 40).

7.8 Subscription examples

How to subscribe to a topic and work with Subscribers and DataReaders.

How to subscribe to a topic and work with Subscribers and DataReaders.

Sections:

- **Creating and configuring a DataReader** (p. 44)

- **Reading data** (p. 44)
- **Selecting data** (p. 46)
- **Reading data asynchronously** (p. 47)
- **Subscribing to a content-filtered topic** (p. 48)
- **Looking up matched publications** (p. 48)

See also **Entity examples** (p. 37) for examples that affect all DDS Entities, including Subscribers and DataReaders.

7.8.1 Creating and configuring a DataReader

Example: create a DataReader using default QoS

```
    // Create a DomainParticipant and a Topic
    var factory = Rti.Dds.Domain.DomainParticipantFactory.Instance;
    using Rti.Dds.Domain.DomainParticipant participant =
        factory.CreateParticipant(domainId: 0);
    Rti.Dds.Topics.Topic<Shape> topic =
        participant.CreateTopic<Shape>("Square");
    // In many cases there is no need to explicitly create a Subscriber;
    // the ImplicitSubscriber can be used to create the DataReader.
    Rti.Dds.Subscription.DataReader<Shape> reader =
        participant.ImplicitSubscriber.CreateDataReader(topic);
```

The IDL definition of the `Shape` type used in the example is the following:

```
module Example {
    struct Shape {
        @key string<128> color;
        int32 x;
        int32 y;
        int32 shapesize;
    };
};
```

Example: configure the DataReader QoS

```
    // Create a DomainParticipant and a Topic
    var factory = Rti.Dds.Domain.DomainParticipantFactory.Instance;
    using DomainParticipant participant = factory.CreateParticipant(domainId: 0);
    Topic<Shape> topic = participant.CreateTopic<Shape>("Square");
    // Configure the QoS starting from the default and changing the
    // Reliability and TimeBasedFilter QoS policies. We also set a
    // subscription name, which helps debugging the system.
    DataReaderQos readerQos = participant.DefaultDataReaderQos
        .WithSubscriptionName(policy => policy.Name = "MySquareReader")
        .WithReliability(policy => policy.Kind = ReliabilityKind.Reliable)
        .WithTimeBasedFilter(
            policy => policy.MinimumSeparation = Duration.FromMilliseconds(100));
    DataReader<Shape> reader =
        participant.ImplicitSubscriber.CreateDataReader(topic, readerQos);
```

See also **Configuring a Publisher** (p. 42); a Subscriber can be configured similarly.

7.8.2 Reading data

There are several ways to wait for data:

- Polling for data
- Handling the DataAvailable event

- Using a Condition and a WaitSet
- **Reading data asynchronously** (p. 47)

Example: Handling the DataAvailable event

```
// The DataAvailabe event triggers when the DataReader receives new data;
// the handler is executed by the same internal thread that receives
// the data. To avoid blocking that thread, use the DataAvailable
// handler only when the data processing is simple and fast.
reader.DataAvailable += _ =>
{
    // LoanedSamples uses internal resources that need to be disposed.
    // The data in the collection cannot be used after it has been disposed.
    using (LoanedSamples<Shape> samples = reader.Take())
    {
        foreach (var sample in samples)
        {
            // sample.Info contains meta-data
            if (sample.Info.ValidData)
            {
                // sample.Data contains the actual data
                Shape shape = sample.Data;
                Console.WriteLine(
                    $"Received {shape.color} square ({shape.x}, {shape.y})");
            }
        }
    }
};
```

Example: Using a ReadCondition and a WaitSet to read data

```
// Create a ReadCondition that will activate when data with any
// DataState is available.
Rti.Dds.Subscription.ReadCondition condition =
    reader.CreateReadCondition(DataState.Any);
// Handle the event when the condition triggers
condition.Triggered += _ =>
{
    // When the data is taken, the condition's trigger value is reset
    using LoanedSamples<Shape> samples = reader.Take();
    foreach (var sample in samples)
    {
        if (sample.Info.ValidData)
        {
            Console.WriteLine(sample.Data);
        }
    }
};
// Create a WaitSet to wait on this condition (and possibly others)
var waitset = new Rti.Dds.Core.WaitSet();
waitset.AttachCondition(condition);
// ... you can add more conditions from other entities to a waitset
while (running)
{
    // waitset.Dispatch executes (in the current thread) the conditions'
    // handler for the Triggered event or returns after 4 seconds if no
    // condition has been triggered.
    waitset.Dispatch(Duration.FromSeconds(4));
}
```

Example: Store the data for future access

```
var myRedShapes = new List<Shape>(); // we will store some data we receive
// ...
using (LoanedSamples<Shape> samples = reader.Take())
{
    foreach (var sample in samples)
    {
        if (sample.Info.ValidData)
        {
            Shape shape = sample.Data;
            if (shape.color == "RED")
            {
                // DO NOT store the loaned object directly:
                // myRedShapes.Add(shape); // WRONG!
                // You can copy the full sample to access it later
                myRedShapes.Add(new Shape(shape)); // CORRECT
            }
```

```
        }
    }
}
// ...
foreach (Shape redShape in myRedShapes) // access the data we copied
{
    // ...
}
```

Example: Store the data for future access using LINQ

```
var myRedShapes = new List<Shape>();
// ...
using (var samples = reader.Take())
{
    // The same can be achieved more succinctly using ValidData() and
    // System.Linq
    myRedShapes.AddRange(samples
        .ValidData() // ignore invalid data and the SampleInfo
        .Where(shape => shape.color == "RED")
        .Select(shape => new Shape(shape)));
}
// ...
```

The `Group Coherent Presentation` example from the **rticonnextdds-examples** GitHub repository shows additional ways to read and wait for data such as:

- Using coherent sets to receive data from different Topics at the same time
- Waiting for data on any **Rti.Dds.Subscription.DataReader** (p. 243) within a **Rti.Dds.Subscription.Subscriber** (p. 1090).
- Looking up which DataReaders have unread data
- Reading data without knowing the compile-time data type, as an **Rti.Dds.Subscription.AnyDataReader** (p. 149)
- Reading data with an **Rti.Dds.Core.WaitSet** (p. 1248) and the DataReader's **Rti.Dds.Core.Entity.Status↩ Condition** (p. 598).
- Monitoring the **Rti.Dds.Subscription.AnyDataReader.SampleLost** (p. 160) status.

7.8.3 Selecting data

The `Read()` and `Take()` operations access all the data that has been received. The `Select()` operation allows specifying a series of conditions on what to read.

Example: selecting data by state and instance

```
// LookupInstance returns the handle that identifies an instance. In this
// case we're getting the handle for an instance identified by Shape's
// single key field, "color"
InstanceHandle greenInstance = reader.LookupInstance(
    keyHolder: new Shape { color = "GREEN" });
using LoanedSamples<Shape> samples = reader.Select()
    // Read samples for the green instance only
    .WithInstance(greenInstance)
    // And read only unread samples of an alive instance
    .WithState(DataState.With(SampleState.NotRead, ViewState.Any, InstanceState.Alive))
    .Read(); // Read(), unlike Take(), doesn't remove the data
// You can use samples.ValidData() to iterate over the data, ignoring
// the SampleInfo.
foreach (Shape sample in samples.ValidData())
{
    Console.WriteLine(sample);
}
```

Example: selecting data by content using a QueryCondition

```
// Create a QueryCondition that will activate when shapes within
```

```
    // certain coordinates are available
    using Rti.Dds.Subscription.QueryCondition condition = reader.CreateQueryCondition(
        "x < 100 and y < 100",
        DataState.Any);
    // Handle the event when the condition triggers
    condition.Triggered += _ =>
    {
        // Take only the data selected by the QueryCondition
        using var samples = reader.Select()
            .WithCondition(condition)
            .Take();
        foreach (Shape shape in samples.ValidData())
        {
            Console.WriteLine(shape);
        }
    };
    // Create a WaitSet to wait on the QueryCondition
    var waitset = new WaitSet();
    waitset.AttachCondition(condition);
    while (running)
    {
        // Dispatch executes the conditions' Triggered events in the
        // current thread or return after 4 seconds if no condition has
        // been triggered.
        waitset.Dispatch(Duration.FromSeconds(4));
    }
```

7.8.4 Reading data asynchronously

Note

This section requires the package `Rti.ConnextDds.Extra` and to explicitly add `using` **`Rti.Dds.Subscription`** (p. 114) to have access to the `TakeAsync` extension method. The examples also use the package `System.Linq.Async`.

Example: asynchronously print all data received by a reader until cancelled

```
public static async Task PrintData(
    DataReader<Shape> reader,
    System.Threading.CancellationToken cancellationToken)
{
    await foreach (LoanedSample<Shape> sample in reader.TakeAsync()
        .WithCancellation(cancellationToken))
    {
        if (sample.Info.ValidData)
        {
            Console.WriteLine(sample.Data);
        }
        else
        {
            Console.WriteLine($"Instance state update: {sample.Info.State.Instance}");
        }
        // Important: the sample contents are only valid in the current
        // iteration. As soon as the iterator advances or is disposed, the
        // sample cannot be used (unless the data is copied).
    }
    // Or if you don't need the SampleInfo:
    await foreach (Shape shape in reader.TakeAsync()
        .ValidData()
        .WithCancellation(cancellationToken))
    {
        Console.WriteLine(shape);
        // Like before, the current shape is valid until the iterator advances.
    }
}
```

Example: asynchronously copy a number of data samples into a list, waiting as needed until they are received

```
public static async ValueTask<List<Shape» TakeN(DataReader<Shape> reader, int n)
{
    return await reader.TakeAsync()
        .ValidData() // ignore invalid data and the SampleInfo
        // The following extension methods are provided by System.Linq.AsyncEnumerable
        .Select(data => new Shape(data)) // copy the data (since sample is loaned)
```

```
        .Take(n) // advance the iterator n times
        .ToListAsync(); // add the result to a list
}
```

`TakeAsync` and `DataReader.Select()` can be combined.

Example: asynchronously process an instance until it is disposed

```
public static async Task ProcessInstance(
    DataReader<Shape> reader,
    System.Threading.CancellationToken cancellationToken)
{
    InstanceHandle greenShapeInstance = reader.LookupInstance(
        new Shape { color = "GREEN" });
    await foreach (LoanedSample<Shape> sample in reader.Select()
        .WithInstance(greenShapeInstance) // only take samples for this instance
        .TakeAsync()
        .TakeWhile( // stop iterating when the instance is no longer alive
            sample => sample.Info.State.Instance == InstanceState.Alive)
        .WithCancellation(cancellationToken))
    {
        Console.WriteLine("Green Shape update: " + sample);
    }
}
```

See also

Rti.Dds.Subscription.DataReaderAsyncExtensions (p. 248)

7.8.5 Subscribing to a content-filtered topic

Example: create a content-filtered topic to subscribe to a subset of the published data

```
    // Create a regular Topic
    Topic<Shape> topic = participant.CreateTopic<Shape>("Square");
    // Create a ContentFilteredTopic for a subset of the data from the
    // previous topic
    ContentFilteredTopic<Shape> filteredTopic = participant.CreateContentFilteredTopic(
        name: "FilteredSquare", // this name is local only
        relatedTopic: topic,
        filter: "color = 'BLUE'");
    // Create a reader that will only receive blue squares
    DataReader<Shape> reader =
        participant.ImplicitSubscriber.CreateDataReader(filteredTopic);
    // ...
```

The `Multichannel` example from the **rticonnextdds-examples** GitHub repository shows an advanced usage of content filtering.

7.8.6 Looking up matched publications

Example: different ways to look up matched publications

```
    // Look up all the publications:
    foreach (var publication in reader.GetMatchedPublicationData())
    {
        string typeName = publication.TypeName;
        bool isReliable = publication.Reliability.Kind == ReliabilityKind.Reliable;
        // ...
    }
    // Look up a specific publication by the instance handle that
    // identifies it. You can get the publication handle, for example, from
    // a data sample:
    using var samples = reader.Read();
    foreach (var sample in samples)
    {
        var publication = reader.GetMatchedPublicationData(
            sample.Info.PublicationHandle);
        Console.WriteLine(
```

```
            $"Received {sample.Data} from publication {publication.PublicationName.Name}");
    }
    // You can get all the publication handles as well:
    foreach (var publication in reader.MatchedPublications)
    {
        // ...
    }
```

See also **Looking up a matched subscription** (p. 43) and **Accessing Information on Entity Discovery** (p. 40).

7.9 IDL examples

How to use C# classes generated from IDL by rtiddsgen.

How to use C# classes generated from IDL by rtiddsgen.

These examples use the topic-type **Example.MyType** (p. 801).

The documentation of **Example.MyType** (p. 801) explains how **rtiddsgen** maps IDL types to C#. The mapping is based on the `OMG IDL4-CSHARP` specification.

To see how to publish and subscribe to a topic with an IDL type, see **Publication examples** (p. 40) and **Subscription examples** (p. 43).

Sections:

- **Creating and populating a data sample** (p. 49)
- **Advanced TypeSupport operations** (p. 50)

7.9.1 Creating and populating a data sample

Example: Populate a data sample

```
// Create a sample with default values. It does a deep initialization
// of all its members.
var sample = new Example.MyType();
// Modify the sample properties:
sample.MyKey = 5;
sample.MyPoint.X = 10;
sample.MyPoint.Y = 20;
sample.MyString = "Hello, World";
// Add elements to a sequence:
sample.MyIntSequence.AddRange(new int[] { 1, 2, 4, 5 });
sample.MyPointSequence.Add(new Point(X: 10, Y: 20));
// Edit the elements of an array. Arrays have a fixed number of elements
for (int i = 0; i < sample.MyPointArray.Length; i++)
{
    sample.MyPointArray[i].X = i;
    sample.MyPointArray[i].Y = i;
}
// Create a deep copy:
var sampleCopy = new MyType(sample);
// ToString(), Equals and GetHashCode are overridden:
Debug.Assert(sampleCopy.Equals(sample));
int hashCode = sample.GetHashCode();
Console.WriteLine($"sample: {sample} - hashCode: {hashCode}");
```

7.9.2 Advanced TypeSupport operations

Each IDL-based type has an associated `TypeSupport` class that provides utilities such as string formatting and serialization methods.

Example: Convert a data sample to JSON or XML

```
var sample = new MyType();
sample.MyPoint.X = 10;
// ...
// MyType.ToString() returns a readable string using default format settings
string readableSample = sample.ToString();
Console.WriteLine(readableSample);
// For additional options, use the MyTypeSupport, which is generated with
// rtiddsgen.
string jsonSample = Example.MyTypeSupport.Instance.ToString(
    sample,
    new PrintFormatProperty { Kind = PrintFormatKind.Json });
Console.WriteLine(jsonSample);
string xmlSample = MyTypeSupport.Instance.ToString(
    sample,
    new PrintFormatProperty
    {
        Kind = PrintFormatKind.Xml,
        PrettyPrint = false
    });
Console.WriteLine(xmlSample);
```

Example: Create a data sample from a JSON representation

```
var typeSupport = MyTypeSupport.Instance;
string jsonSample = "{\"MyKey\": 10, \"MyPoint\": {\"X\": 10, \"Y\": 20}}";
MyType sample = typeSupport.FromString(jsonSample);
Console.WriteLine(sample);
```

Example: Serialize a data sample into a byte buffer

```
var sample = new MyType();
sample.MyPoint.X = 10;
// ...
// Create a serializer.
//
// Warning: a serializer is not thread-safe. To use a serializer in
// multiple thread, either protect its operations or create a different
// serializer per thread.
ISerializer<MyType> serializer = MyTypeSupport.Instance.CreateSerializer();
// Serialize the data sample into a byte buffer
byte[] sampleBuffer = serializer.Serialize(sample);
// Create a new MyType object from the byte buffer
MyType deserializedSample = serializer.Deserialize(sampleBuffer);
Debug.Assert(deserializedSample.Equals(sample));
```

Example: Get the dynamic type definition of an IDL type

```
// Each type generated from IDL has a DynamicType definition available:
DynamicType myType = MyTypeSupport.Instance.DynamicType;
Console.WriteLine(myType.Name);
// We know it's a struct type:
Debug.Assert(myType.Kind == TypeKind.Structure);
StructType myStruct = (StructType) myType;
// We can inspect the type:
StructMember member = myStruct.GetMember("MyKey");
Debug.Assert(member.IsKey); // MyKey has the @key annotation in IDL
// We can use it to create a DynamicData sample:
DynamicData dynamicSample = new DynamicData(myType);
dynamicSample.SetValue("MyKey", 10);
dynamicSample.SetValue("MyPoint.X", 10);
```

7.10 DynamicData examples

How to publish and subscribe to topics for dynamically-defined types.

How to publish and subscribe to topics for dynamically-defined types.

In addition to IDL and code generation, data types can be defined dynamically in code and in XML using **Rti.Types.Dynamic.DynamicType** (p. 582). Data for those types can be published and subscribed to using **Rti.Types.Dynamic.DynamicData** (p. 564).

Example (p. 61) 1: define a type and publish a data sample

```
// Define the Shape type dynamically:
var typeFactory = Rti.Types.Dynamic.DynamicTypeFactory.Instance;
StructType shapeType = typeFactory.BuildStruct()
    .WithName("Shape")
    .AddMember(new StructMember("color", typeFactory.CreateString(bounds: 128), isKey: true))
    .AddMember(new StructMember("x", typeFactory.GetPrimitiveType<int>()))
    .AddMember(new StructMember("y", typeFactory.GetPrimitiveType<int>()))
    .AddMember(new StructMember("shapesize", typeFactory.GetPrimitiveType<int>()))
    .Create();
// Create a topic for the type we have defined. The generic type argument
// for Topic is DynamicData when we call CreateTopic with a DynamicType.
Topic<DynamicData> topic = participant.CreateTopic(
    name: "Square",
    type: shapeType);
// Create a DataWriter
DataWriter<DynamicData> writer = participant.ImplicitPublisher
    .CreateDataWriter(topic);
// Create a sample
DynamicData sample = new DynamicData(shapeType);
// writer.CreateData() has the same effect:
DynamicData sample2 = writer.CreateData();
// Set the fields by name
sample.SetValue(memberName: "color", value: "GREEN");
sample.SetValue(memberName: "shapesize", value: 40);
// Or by member index (which is more efficient)
sample.SetValue(memberId: 2, value: 100); // sample.x = 100
sample.SetValue(memberId: 3, value: 100); // sample.y = 100
// The type of the argument value must match exactly the declared field
// type. For convenience, SetAnyValue will attempt to transform the
// intput value to the declared type. In this example it will convert
// the string "17" to an the int 17.
sample.SetAnyValue(memberName: "x", value: "17");
```

Example (p. 61) 2: load a type definition from XML and subscribe to it

```
static void ProcessData(AnyDataReader anyReader)
{
    var reader = (DataReader<DynamicData>)anyReader;
    using var samples = reader.Take();
    foreach (var sample in samples)
    {
        if (sample.Info.ValidData)
        {
            DynamicData data = sample.Data;
            // Get the fields using member name or member index
            string color = data.GetValue<string>(memberName: "color");
            int shapesize = data.GetValue<int>(memberName: "shapesize");
            var coordinates = (
                data.GetValue<int>(memberId: 2), // data.x
                data.GetValue<int>(memberId: 3)  // data.y
            );
            // The type argument for GetValue must exactly match the declared
            // field type. You can use GetAnyValue to return an object instead
            object colorAsObject = data.GetAnyValue("color");
            // You can also convert the data to string
            Console.WriteLine(data);
        }
    }
}
// Load the ShapeType from an XML file
var provider = new QosProvider("Shape.xml");
DynamicType shapeType = provider.GetType("Shape");
// Create a topic for the type we have defined. The generic type argument
// for Topic is DynamicData when we call CreateTopic with a DynamicType.
Topic<DynamicData> topic = participant.CreateTopic(
    name: "Square",
    type: shapeType);
// Create a DataReader with an event handler for DataAvailable
DataReader<DynamicData> reader =
    participant.ImplicitSubscriber.CreateDataReader(
        topic,
```

```
            preEnableAction: reader => reader.DataAvailable += ProcessData);
    // ...
```

The XML definition of the Shape type is:

```
<?xml version="1.0" encoding="UTF-8"?>
<dds xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:noNamespaceSchemaLocation="https://community.rti.com/schema/current/rti_dds_profiles.xsd">
  <types>
    <module name="Example">
      <struct name= "Shape">
        <member name="color" stringMaxLength="128" type="string" key="true"/>
        <member name="x" type="int32"/>
        <member name="y" type="int32"/>
        <member name="shapesize" type="int32"/>
      </struct>
    </module>
  </types>
</dds>
```

The **rticonnextdds-examples** GitHub repository provides additional DynamicData examples

- `Dynamic Data Publisher and Subscriber`
- `Dynamic Data Sequences`

7.11 XML application examples

How to define DDS applications in XML.

How to define DDS applications in XML.

Sections:

- **Example XML definition** (p. 52)
- **Creating and looking up the DDS entities** (p. 53)
- **Using IDL-based types** (p. 54)

7.11.1 Example XML definition

The following is the configuration (`ddsApplication.xml`) that we will be using in the examples in this section:

```
<?xml version="1.0" encoding="UTF-8"?>
<dds xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:noNamespaceSchemaLocation="https://community.rti.com/schema/current/rti_dds_profiles.xsd">
  <types>
      <struct name="Shape">
        <member name="color" stringMaxLength="128" type="string" key="true"/>
        <member name="x" type="int32"/>
        <member name="y" type="int32"/>
        <member name="shapesize" type="int32"/>
      </struct>
  </types>
  <domain_library name="ExampleDomainLibrary">
    <domain name="ExampleDomain" domain_id="0">
      <!-- Register the type Shape and use its definition above -->
      <register_type name="Shape" type_ref="Shape"/>
      <!-- Register the type MyType but do not provide an XML definition. -->
      <!-- The application will use a C# type -->
      <register_type name="MyType"/>
      <topic name="Square" register_type_ref="Shape"/>
```

```
      <topic name="MyTypeTopic" register_type_ref="MyType"/>
    </domain>
  </domain_library>
  <domain_participant_library name="ExampleParticipantLibrary">
    <domain_participant name="ExamplePublicationParticipant"
                        domain_ref="ExampleDomainLibrary::ExampleDomain">
      <publisher name="ExamplePublisher">
        <data_writer name="ShapeWriter" topic_ref="Square"/>
      </publisher>
    </domain_participant>
    <domain_participant name="ExampleSubscriptionParticipant"
                        domain_ref="ExampleDomainLibrary::ExampleDomain">
      <data_reader name="ShapeReader" topic_ref="Square">
        <content_filter name="ExampleTopic" kind="builtin.sql">
          <expression>color='BLUE'</expression>
        </content_filter>
      </data_reader>
    </domain_participant>
    <domain_participant name="ExampleIdlParticipant"
                        domain_ref="ExampleDomainLibrary::ExampleDomain">
      <publisher name="ExamplePublisher">
        <data_writer name="MyTypeWriter" topic_ref="MyTypeTopic"/>
      </publisher>
    </domain_participant>
  </domain_participant_library>
</dds>
```

7.11.2 Creating and looking up the DDS entities

Example: Create the participants defined in the XML file

```
var provider = new Rti.Dds.Core.QosProvider("ddsApplication.xml");
// Create the participants identified by the name we used in their
// XML definition. This operation also creates all the contained
// entities (topics, publishers, subscribers, readers, writers)
using var pubParticipant = provider.CreateParticipantFromConfig(
    "ExampleParticipantLibrary::ExamplePublicationParticipant");
using var subParticipant = provider.CreateParticipantFromConfig(
    "ExampleParticipantLibrary::ExampleSubscriptionParticipant");
```

Example: lookup the DataWriter and publish data

```
// Look up the writer using the name we used in its XML definition
//
// The type of ShapeWriter is DynamicData, because ShapeType is
// defined in the XML <types> tag and therefore created at runtime.
var writer = pubParticipant.LookupDataWriter<DynamicData>(
    "ExamplePublisher::ShapeWriter");
if (writer == null)
{
    // Lookup returns null if the entity name doesn't exist and throws
    // exceptions for other errors
    throw new Exception("DataWriter not found");
}
DynamicData data = writer.CreateData();
data.SetValue("color", "RED");
data.SetValue("shapesize", 70);
data.SetValue("x", 10);
data.SetValue("y", -10);
writer.Write(data);
```

Example: lookup the DataReader and receive data

```
var reader = subParticipant.LookupDataReader<DynamicData>("ShapeReader");
if (reader == null)
{
    // Lookup returns null if the entity name doesn't exist and throws
    // exceptions for other errors
    throw new Exception("DataReader not found");
}
reader.DataAvailable += _ =>
{
    using var samples = reader.Take();
    foreach (var sample in samples.ValidData())
    {
        Console.WriteLine(sample);
    }
};
// ...
```

7.11.3 Using IDL-based types

The previous examples used DynamicData, but it is also possible to use strongly typed C# classes generated from IDL even if the readers and writers are defined in XML.

Example: Register an IDL type used by a writer or reader defined in XML

```
// Register specific types (a)
// The 'name' argument must correspond to the name used in
// <register_type name="MyType"/>
DomainParticipantFactory.Instance.RegisterTypeSupport<Example.MyType>(
    name: "MyType");
// Or register a namespace within an assembly (b)
DomainParticipantFactory.Instance.RegisterNamespace(
    typeof(Example.MyType).Assembly,
    "Example");
// Whenever a type is referenced in the XML file, the QosProvider will
// now look for its definition among those that have been explicitly
// registered (a) or belong in a registered namespace (b)
var provider = new QosProvider("ddsApplication.xml");
using var participant = provider.CreateParticipantFromConfig(
    "ExampleParticipantLibrary::ExampleIdlParticipant");
// Now we can look up a reader or a writer that uses Example.MyType
// instead of DynamicData
DataWriter<Example.MyType> writer =
    participant.LookupDataWriter<Example.MyType>(
        "ExamplePublisher::MyTypeWriter");
if (writer == null)
{
    // Lookup returns null if the entity name doesn't exist and throws
    // exceptions for other errors
    throw new Exception("DataWriter not found");
}
var sample = new Example.MyType { /* ... */ };
writer.Write(sample);
Console.WriteLine(writer.Topic.TypeName);
```

7.12 Logging, version and utilities examples

Miscellaneous examples, such as configuring logging, printing the current version and other utilities.

Miscellaneous examples, such as configuring logging, printing the current version and other utilities.

Sections:

- **Getting the current RTI Connext version** (p. 54)
- **Configuring logging** (p. 55)
- **Tracking memory usage** (p. 55)
- **Network monitoring** (p. 55)

7.12.1 Getting the current RTI Connext version

Example: print the current version

```
Console.WriteLine(Rti.Dds.Core.ServiceEnvironment.Instance.Version);
```

7.12.2 Configuring logging

Example: change the logging verbosity to warnings

```
Rti.Config.Logger.Instance.SetVerbosity(Rti.Config.Verbosity.Warning);
```

Example: redirect log messages to a file

```
Logger.Instance.SetOutputFile("MyLogging.txt");
```

Example: capture logging messages to customize the output

```
// After installing an event handler, all messages logged by RTI Connext
// will be sent to this handler instead of being printed.
Logger.Instance.MessageLogged += log =>
{
    Console.WriteLine($"[RTI Connext Log: {log.Message}]");
    CustomLoggingSystem(log.Message);
};
```

7.12.3 Tracking memory usage

Example: enable the heap monitoring utility to track the memory that the middleware uses internally

```
// Before any other call to the Connext DDS API:
var heapMonitor = Rti.Utility.HeapMonitor.Enable();
// Use the API...
var participant = DomainParticipantFactory.Instance.CreateParticipant(domainId: 0);
// ...
// TakeSnapshot creates a detailed file that allows tracking the
// memory allocations performed by the middleware on the native heap
var snapshot = heapMonitor.TakeSnapshot("heap01.txt", printDetails: true);
Console.WriteLine($"Initial heap usage is: {snapshot.CurrentHeapUsage}");
participant.Dispose();
snapshot = heapMonitor.TakeSnapshot("heap02.txt", printDetails: true);
Console.WriteLine($"Final heap usage is: {snapshot.CurrentHeapUsage}");
```

7.12.4 Network monitoring

Rti.Utility.NetworkCapture (p. 808) allows capturing network traffic that one or more DomainParticipants send or receive. This feature can be used to analyze and debug communication problems between DDS applications.

The `Network Capture` example in the **rticonnextdds-examples** GitHub repository shows how to use this feature.

7.13 Request-Reply Examples

How to use the C# Request-Reply API.

How to use the C# Request-Reply API.

Requesters and Repliers provide a way to use the Request-Reply communication pattern on top of the DDS entities. An application uses a Requester to send requests to a Replier; another application using a Replier receives a request and can send one or more replies for that request. The Requester that sent the request (and only that one) will receive the reply (or replies).

Note

To use the C# Request-Reply API, add the following NuGet package to your C# project: `Rti.ConnextDds.RequestReply`

RTI Connext uses DDS data types for sending and receiving requests and replies. Valid types are those generated by the rtiddsgen code generator, the DDS built-in types, and DynamicData. Refer to the `User's Manual` and the `Modern C++ Request-Reply Examples` for more information.

The **rticonnextdds-examples** GitHub repository also provides a full example application using `Request-Reply`.

Sections:

- **Creation of a Requester and a Replier** (p. 56)
- **Communication between a Requester and a Replier** (p. 57)
- **Using ContentFilteredTopics to filter requests** (p. 58)
- **Using DynamicData** (p. 58)
- **Asynchronous Wait** (p. 59)
- **Using a SimpleReplier** (p. 59)

The IDL definitions of the `RandomNumberRequest` and `RandomNumberReply` types used in the examples are the following:

```
module Example {
    struct RandomNumberRequest {
        int minValue;
        int maxValue;
    };
    struct RandomNumberReply {
        int value;
    };
};
```

7.13.1 Creation of a Requester and a Replier

Example: Create a basic Requester

```
    // Create a DomainParticipant
    var factory = Rti.Dds.Domain.DomainParticipantFactory.Instance;
    using Rti.Dds.Domain.DomainParticipant participant =
        factory.CreateParticipant(domainId: 0);
    // The only property that is required for a Requester
    // is ServiceName. You can alternatively use WithTopicNames.
    Requester<RandomNumberRequest, RandomNumberReply> requester =
        participant.BuildRequester<RandomNumberRequest, RandomNumberReply>()
            .WithServiceName("RandomNumber")
            .Create();
```

Example: Create a basic Replier

```
    // Create a DomainParticipant
    var factory = Rti.Dds.Domain.DomainParticipantFactory.Instance;
    using Rti.Dds.Domain.DomainParticipant participant =
        factory.CreateParticipant(domainId: 0);
    // The only property that is required for a Replier
    // is ServiceName. You can alternatively use WithTopicNames.
    var replier = participant.BuildReplier<RandomNumberRequest, RandomNumberReply>()
            .WithServiceName("RandomNumber")
            .Create();
```

Example: Configure a Requester or Replier with additional properties

```
// Explicitly create a publisher for the requester
var publisher = participant.CreatePublisher();
// Define DataReader and DataWriter QoS
var readerQos = participant.DefaultDataReaderQos
        .WithReliability(policy => policy.Kind = ReliabilityKind.Reliable)
        .WithHistory(policy => policy.Kind = HistoryKind.KeepAll)
        .WithResourceLimits(policy => policy.MaxSamples = LengthUnlimited.Value);
var writerQos = participant.DefaultDataWriterQos
        .WithReliability(policy => policy.Kind = ReliabilityKind.Reliable)
        .WithHistory(policy => policy.Kind = HistoryKind.KeepAll)
        .WithResourceLimits(policy => policy.MaxSamples = 10);
var requester = participant.BuildRequester<RandomNumberRequest, RandomNumberReply>()
        .WithServiceName("RandomNumber")
        .WithPublisher(publisher)
        .WithDataReaderQos(readerQos)
        .WithDataWriterQos(writerQos)
        .Create();
```

7.13.2 Communication between a Requester and a Replier

Example: Send requests

```
// Send a request
var request = new RandomNumberRequest(10, 1000);
requester.SendRequest(request);
// Receive a reply (wait for it and take the sample)
using var replies = requester.ReceiveReplies(1, Duration.FromSeconds(5));
foreach (var reply in replies.ValidData())
{
    System.Console.WriteLine($"Reply received: {reply.Value}");
}
```

Example: Reply to received requests

```
// Wait for at least 2 requests asynchronously
// Note: a synchronous version of this wait method also exists
int receivedRequests = await replier.WaitForRequestsAsync(2, cancellationToken);
if (receivedRequests >= 2)
{
    LoanedSamples<RandomNumberRequest> requests = replier.TakeRequests();
    var randomNumber = new System.Random();
    foreach (var request in requests)
    {
        if (request.Info.ValidData)
        {
            var reply = new RandomNumberReply(
                randomNumber.Next(request.Data.MinValue, request.Data.MaxValue));
            // Send a reply for each request. Each reply uses a specific
            // request's information to correlate each request and its replies.
            replier.SendReply(reply, request.Info);
            // Note: a replier can send more than one reply for the same request
            // replier.SendReply(anotherRandomNumberRequest, request.Info);
        }
    }
}
// ...
```

Example: Correlate requests and their respective replies

```
// Send requests and save their id's
var request1 = new RandomNumberRequest(0, 100);
var request2 = new RandomNumberRequest(200, 300);
SampleIdentity requestId1 = requester.SendRequest(request1);
SampleIdentity requestId2 = requester.SendRequest(request2);
// Wait for a reply to request2
if (!requester.WaitForReplies(1, requestId2, Duration.FromSeconds(5)))
{
    System.Console.WriteLine("No reply for request 2");
}
else
{
    // Take replies for request2
    using var replies = requester.TakeReplies(requestId2);
    foreach (var reply in replies)
    {
        // This should always be true
```

```
            System.Diagnostics.Debug.Assert(
                request2.Equals(reply.Info.OriginalPublicationVirtualSampleIdentity));
        }
        // ...
    }
```

Example: Use a handler to process available requests

```
    // Create a handler for incoming requests in the replier
    static void customHandler(Replier<RandomNumberRequest, RandomNumberReply> replier)
    {
        // You can take all currently available requests
        using var requests = replier.TakeRequests();
        var randomNumber = new System.Random();
        foreach (var request in requests)
        {
            if (request.Info.ValidData)
            {
                var randomNumberRequest = new RandomNumberReply(
                    randomNumber.Next(request.Data.MinValue, request.Data.MaxValue));
                replier.SendReply(randomNumberRequest, request.Info);
            }
        }
    }
    // Add a handler to the RequestsAvailable event. This handler
    // will be triggered whenever the replier has available requests
    replier.RequestsAvailable += customHandler;
    // ...
    // Added handlers can be removed from the event
    replier.RequestsAvailable -= customHandler;
```

7.13.3 Using ContentFilteredTopics to filter requests

Example: Create a ContentFilteredTopic and make the Replier use it for requests

```
    // Create a Topic for requests
    var requestTopic = participant.CreateTopic<RandomNumberRequest>("RequestsTopic");
    // Create a ContentFilteredTopic using the request topic to filter
    // the requests using a specific Filter
    var cft = participant.CreateContentFilteredTopic(
        "RequestsCft",
        requestTopic,
        new Filter("minvalue > 100"));
    // Use the regular topic's name for the requester
    var requester =
        participant.BuildRequester<RandomNumberRequest, RandomNumberReply>()
            .WithTopicNames("RequestsTopic", "RepliesTopic")
            .Create();
    // Use the name of the CFT as the request topic name for the replier
    var filteringReplier =
        participant.BuildReplier<RandomNumberRequest, RandomNumberReply>()
            .WithTopicNames("RequestsCft", "RepliesTopic")
            .Create();
    // This request will not be received by filteringReplier
    requester.SendRequest(new RandomNumberRequest(50, 100));
    // This request will be received by filteringReplier
    requester.SendRequest(new RandomNumberRequest(150, 200));
    using var requests = filteringReplier.ReceiveRequests(1, Duration.FromSeconds(5));
    // ...
```

7.13.4 Using DynamicData

This example assumes that you have the DynamicType definition of the request type (randomNumberRequestType). See also **DynamicData examples** (p. 50) to see the different ways to create or get a DynamicType.

Example: Use DynamicData

```
    // Create requester specifying the DynamicType that will be used
    // for the requests and replies
    var requester = participant.BuildRequester<DynamicData, RandomNumberReply>()
            .WithServiceName("RandomNumber")
            .WithRequestDynamicType(randomNumberRequestType)
```

```
        .Create();
var request = new DynamicData(randomNumberRequestType);
request.SetValue("MinValue", 10);
request.SetValue("MaxValue", 100);
requester.SendRequest(request);
// ...
```

7.13.5 Asynchronous Wait

Example: Wait for samples asynchronously

```
// Wait for 1 or more requests asynchronously. The wait will stop when
// either the cancellationToken stops it, or when the same or more than
// the specified number of samples are received
var count = await replier.WaitForRequestsAsync(1, cancellationToken);
if (count == 0)
{
    throw new System.TimeoutException("No requests received");
}
// Take received requests after waiting for them
using var requests = replier.TakeRequests();
foreach (var request in requests)
{
    if (request.Info.ValidData)
    {
        replier.SendReply(
            new RandomNumberReply(new System.Random().Next()),
            request.Info);
    }
}
// ...
```

7.13.6 Using a SimpleReplier

Example: Use a SimpleReplier instead of a regular Replier for simplified request handling

```
// Create a SimpleReplier with a request handler that receives
// a request and builds a reply accordingly. The SimpleReplier will use
// this to reply to each incoming individual request
var simpleReplier =
    participant.BuildSimpleReplier<RandomNumberRequest, RandomNumberReply>()
        .WithServiceName("SimpleReplierExample")
        .WithRequestHandler(
            request =>
            {
                var randomNumber = new System.Random().Next(
                        request.MaxValue,
                        request.MinValue);
                return new RandomNumberReply(randomNumber);
            })
        .Create();
// ...
```

Chapter 8

Namespace Documentation

8.1 Example Namespace Reference

Data Structures

- struct **MyType**

  Example *(p. 61) C# class generated from the IDL* `struct` ***MyType*** *(p. 801)*
- class **MyTypeSupport**

  Provides utilities for ***MyType*** *(p. 801) (this class is a singleton).*
- struct **Point**

  Example *(p. 61) C# class generated from the IDL* `struct` ***Point*** *(p. 848), used by* ***MyType*** *(p. 801).*
- class **PointSupport**

  Provides utilities for ***Point*** *(p. 848) (this class is a singleton).*

8.2 Omg Namespace Reference

Contains the OMG standard interfaces.

8.2.1 Detailed Description

Contains the OMG standard interfaces.

This namespace will contain the standard interfaces defined by the future OMG C# Language PSM for DDS.

Warning

Currently this namespace is incomplete. Use the **Rti** (p. 70) namespace.

8.3 Omg.Dds Namespace Reference

8.4 Omg.Dds.Core Namespace Reference

Data Structures

- class **DdsException**

  Indicates a generic DDS error.
- struct **Duration**

  Represents a time duration.
- class **ImmutablePolicyException**

  Indicates that the application attempted to modify an immutable QoS policy.
- class **InconsistentPolicyException**

  Indicates that the application specified a set of QoS policies that are not consistent with each other
- class **LengthAuto**

  A special value indicating that the actual length will be automatically resolved.
- class **LengthUnlimited**

  A special value indicating an unlimited quantity.
- class **NotAllowedBySecurityException**

  Indicates that a DDS operation failed because the security plugins do not allow it.
- class **NotEnabledException**

  *Exception thrown when an operation is invoked on an **Rti.Dds.Core.Entity** (p. 596) that is not enabled.*
- class **OutOfResourcesException**

  Indicates that a DDS operation ran out of the resources needed to complete
- class **PreconditionNotMetException**

  Exception thrown when a precondition for an operation is not met.
- class **ServiceEnvironment**

  Contains global objects used by DDS.
- struct **Time**

  Represents a moment in time.

8.5 Omg.Dds.Core.Policy Namespace Reference

Data Structures

- class **ChangeableAttribute**

  Attribute that indicates that a Qos policy type can be changed after its Entity has been created.

Enumerations

- enum **ChangeableWhen** {
  AnyTime ,
  UntilEnable }

  Indicates when the policy can be changed
- enum **DurabilityKind** {
  Volatile ,
  TransientLocal ,
  Transient ,
  Persistent }

  Kinds of durability

8.5.1 Enumeration Type Documentation

8.5.1.1 ChangeableWhen

enum **Omg.Dds.Core.Policy.ChangeableWhen**

Indicates when the policy can be changed

Enumerator

AnyTime	Indicates that the Qos policy can be changed any time after creation
UntilEnable	Indicates that the Qos policy can only be changed while the entity hasn't been enabled yet.

8.5.1.2 DurabilityKind

enum **Omg.Dds.Core.Policy.DurabilityKind**

Kinds of durability

The full documentation is available in the C API: DDSDurabilityQosPolicyKind

Enumerator

Volatile	DDS does not need to keep any samples of data instances on behalf of any Rti.Dds.Subscription.DataReader<T> that is unknown by the Rti.Dds.Publication.DataWriter<T> at the time the instance is written. *The full documentation is available in the C API:* VOLATILE_DURABILITY_QOS
TransientLocal	DDS will attempt to keep some samples so that they can be delivered to any potential late-joining Rti.Dds.Subscription.DataReader<T>. *The full documentation is available in the C API:* TRANSIENT_LOCAL_DURABILITY_QOS

Enumerator

Transient	DDS will attempt to keep some samples so that they can be delivered to any potential late-joining Rti.Dds.Subscription.DataReader<T>. *The full documentation is available in the* `C API:` `TRANSIENT_DURABILITY_QOS`
Persistent	Data is kept on permanent storage, so that they can outlive a system session. *The full documentation is available in the* `C API:` `PERSISTENT_DURABILITY_QOS`

8.6 Omg.Dds.Core.Status Namespace Reference

Data Structures

- struct **EventCount**

  An event count has a value and a change from the last time the value was looked up

8.7 Omg.Dds.Subscription Namespace Reference

Data Structures

- class **DataState**

  Information about a sample's ***SampleState*** *(*p. *65), **ViewState** (*p. *65), and **InstanceState** (*p. *66).*
- class **DataStateOperations**

  Extensions for ***SampleState*** *(*p. *65), **ViewState** (*p. *65) and **InstanceState** (*p. *66) that allow combining them to form a **DataState** (*p. *326)*
- struct **GenerationCount**

  Keeps track of changes in ***InstanceState*** *(*p. *66).*
- struct **Rank**

  Keeps track of the number of samples related to the same instance that follow in a sample collection.

Enumerations

- enum **SampleState** {
  None = 0 ,
  Read = 0x0001 << 0 ,
  NotRead = 0x0001 << 1 ,
  Any = Read | NotRead }

  Indicates whether or not a sample has ever been read.
- enum **ViewState** {
  None = 0 ,
  New = 0x0001 << 0 ,
  NotNew = 0x0001 << 1 ,
  Any = New | NotNew }

  Indicates whether or not an instance is new.

- enum **InstanceState** {
  None = 0 ,
  Alive = 0x0001 << 0 ,
  NotAliveDisposed = 0x0001 << 1 ,
  NotAliveNoWriters = 0x0001 << 2 ,
  NotAlive = NotAliveDisposed | NotAliveNoWriters ,
  Any = Alive | NotAlive }

  Indicates if the samples are from a live DataWriter or not.

8.7.1 Enumeration Type Documentation

8.7.1.1 SampleState

enum **Omg.Dds.Subscription.SampleState**

Indicates whether or not a sample has ever been read.

The full documentation is available in the C API: DDS_SampleStateKind

Enumerator

None	Mask where no flag is selected.
Read	Indicates that the application has already accessed that sample by means of a read or take operation.
NotRead	Indicates that the application has not accessed that sample before.
Any	A mask containing all flags.

8.7.1.2 ViewState

enum **Omg.Dds.Subscription.ViewState**

Indicates whether or not an instance is new.

The full documentation is available in the C API: DDS_ViewStateKind

Enumerator

None	Mask where no flag is selected
New	Indicates that the latest generation of an instance has not previously been accessed.
NotNew	Indicates that the latest generation of an instance has previously been accessed.
Any	Mask containing all flags

8.7.1.3 InstanceState

enum **Omg.Dds.Subscription.InstanceState**

Indicates if the samples are from a live DataWriter or not.

The full documentation is available in the `C API:`DDS_InstanceStateKind

Enumerator

None	Mask where no flag is selected
Alive	Indicates that the instance is currently in existence.
NotAliveDisposed	Indicates that the instance has been disposed by a DataWriter.
NotAliveNoWriters	Indicates that none of the DataWriters that are currently alive (according to the Liveliness QoS policy) are writing this instance.
NotAlive	Mask containing the NotAliveDisposed and NotAliveNoWriters flags.
Any	Mask containing all flags.

8.8 Omg.Types Namespace Reference

Data Structures

- class **BoundAttribute**

  Specifies the maximum length for a bounded IDL sequence or string
- interface **ISequence**

  IDL sequences map to this type.
- class **KeyAttribute**

  Indicates that a field in a topic-type is a key (IDL @key annotation)
- class **MustUnderstandAttribute**

  Indicates that a field in a topic-type is "must understand" (IDL @must_understand annotation)
- class **OptionalAttribute**

  Indicates that a field in a topic-type is optional (IDL @optional annotation) annotation)

Enumerations

- enum **ExtensibilityKind** {
  Final ,
  Extensible ,
  Mutable }

  Represents the values of the IDL annotation `@extensibility`

8.8.1 Enumeration Type Documentation

8.8.1.1 ExtensibilityKind

enum **Omg.Types.ExtensibilityKind**

Represents the values of the IDL annotation `@extensibility`

Enumerator

Final	Final extensibility (`@final`).
Extensible	Extensible/appendable extensibility (`@appendable`).
Mutable	Mutable extensibility (`@mutable`)

8.9 Omg.Types.Dynamic Namespace Reference

Data Structures

- interface **IAggregationMember**
  Common interface for the members of an aggregation type.
- interface **IArrayType**
  *Defines an **IArrayType** (p. 650).*
- interface **ICollectionType**
  *Defines an **IDynamicType** (p. 655) collection.*
- interface **IConstructedType**
  Common interface for constructed types.
- interface **IDynamicType**
  Interface of DynamicType.
- interface **IEnumMember**
  *Defines a member of an **IEnumType** (p. 657).*
- interface **IEnumType**
  Represents an IDL enum.
- interface **IMember**
  *Common interface for all members of an **IDynamicType** (p. 655).*
- interface **IPrimitiveType**
  Represents an IDL primitive type.
- interface **ISequenceType**
  *Defines an **ISequenceType** (p. 673).*
- interface **IStringType**
  *Defines an **IStringType** (p. 678).*
- interface **IStructMember**

*Defines a member of an **IStructType** (p. 680).*

- interface **IStructType**

  Represents an IDL struct.

- interface **IUnidimensionalCollectionType**

  *Defines a single-dimension **ICollectionType** (p. 652).*

- interface **IUnionMember**

  *Defines a member of an **IUnionType** (p. 686).*

- interface **IUnionType**

  Represents an IDL union.

Enumerations

- enum **TypeKind** : int {
  None = 0 ,
  Annotation = 0x0080 ,
  Aggregation = 0x0100 ,
  Collection = 0x0200 ,
  Primitive = 0x4000 ,
  Boolean = Primitive | 0x0001 ,
  Uint8 = Primitive | 0x0002 ,
  Int16 = Primitive | 0x0003 ,
  Uint16 = Primitive | 0x0004 ,
  Int32 = Primitive | 0x0005 ,
  UInt32 = Primitive | 0x0006 ,
  Int64 = Primitive | 0x0007 ,
  UInt64 = Primitive | 0x0008 ,
  Float32 = Primitive | 0x0009 ,
  Float64 = Primitive | 0x000A ,
  Float128 = Primitive | 0x000B ,
  Char8 = Primitive | 0x000C ,
  Char16 = Primitive | 0x000D ,
  Int8 = Primitive | 0x000E ,
  Octet = Primitive | 0x000F ,
  Constructed = 0x8000 ,
  Enumeration = Constructed | 0x0001 ,
  Bitset = Constructed | 0x0002 ,
  Alias = Constructed | 0x0003 ,
  Union = Constructed | Aggregation | 0x0008 ,
  Structure = Constructed | Aggregation | 0x0009 ,
  UnionFwdDecl = Constructed | Aggregation | 0x000A ,
  StructureFwdDecl = Constructed | Aggregation | 0x000B ,
  Array = Constructed | Collection | 0x0004 ,
  Sequence = Constructed | Collection | 0x0005 ,
  String = Constructed | Collection | 0x0006 ,
  MapType = Constructed | Collection | 0x0007 ,
  WideString = Constructed | Collection | 0x0008 }

  The different kinds of DynamicType.

8.9.1 Enumeration Type Documentation

8.9.1.1 TypeKind

enum **Omg.Types.Dynamic.TypeKind** : int

The different kinds of DynamicType.

Enumerator

None	None.
Annotation	Flag indicating the definition of an annotation.
Aggregation	Flag indicating an aggregation type (Structure, Union)
Collection	Flag indicating a collection type
Primitive	Flag indicating a primitive type (Rti.Types.Dynamic.PrimitiveType<T>).
Boolean	Flag indicating a bool (`PrimitiveType<bool>)
Uint8	Flag indicating a byte (PrimitiveType<byte>)
Int16	Flag indicating a short (PrimitiveType<short>)
Uint16	Flag indicating a ushort (PrimitiveType<ushort>)
Int32	Flag indicating an int (PrimitiveType<int>)
UInt32	Flag indicating a uint (PrimitiveType<uint>)
Int64	Flag indicating a long (PrimitiveType<long>)
UInt64	Flag indicating a ulong (PrimitiveType<ulong>)
Float32	Flag indicating a float (PrimitiveType<float>)
Float64	Flag indicating a double (PrimitiveType<double>)
Float128	Flag indicating a long double (PrimitiveType<decimal>)
Char8	Flag indicating a UTF-8 character (PrimitiveType<char>)
Char16	Flag indicating a UTF-16 character.
Int8	Flag indicating a signed 8-bit integer.
Octet	Flag indicating an opaque byte.
Constructed	Flag indicating a constructed type (Enumeration, Alias, Collection, Aggregation)
Enumeration	Flag indicating an **Rti.Types.Dynamic.EnumType** (p. 615).
Bitset	Flag indicating a bitset type.
Alias	Flag indicating an **Rti.Types.Dynamic.AliasType** (p. 130).
Union	Flag indicating a **Rti.Types.Dynamic.UnionType** (p. 1239).
Structure	Flag indicating a **Rti.Types.Dynamic.StructType** (p. 1086).
UnionFwdDecl	Flag indicating a union forward declaration.
StructureFwdDecl	Flag indicating a structure forward declaration.
Array	Flag indicating an **Rti.Types.Dynamic.ArrayType** (p. 173).
Sequence	Flag indicating a **Rti.Types.Dynamic.SequenceType** (p. 1046).
String	Flag indicating a UTF-8 **Rti.Types.Dynamic.StringType** (p. 1076).
MapType	Flag indicating a map type.
WideString	Flag indicating a UTF-16 **Rti.Types.Dynamic.WideStringType** (p. 1255).

8.10 Rti Namespace Reference

Contains the RTI Connext C# API.

Namespaces

- namespace **Config**

  Contains configuration utilities, such as logging
- namespace **Dds**

  Contains the RTI Connext DDS C# API.
- namespace **RequestReply**

  Support for the request-reply communication pattern on top of RTI Connext.
- namespace **Types**

  Support for topic-types.
- namespace **Utility**

  Contains general-purpose utilities

8.10.1 Detailed Description

Contains the RTI Connext C# API.

8.11 Rti.Config Namespace Reference

Contains configuration utilities, such as logging

Data Structures

- class **Compliance**

  This class contains methods to configure the compliance masks.
- class **Logger**

  The singleton used to configure RTI Connext logging
- struct **LogMessage**

  *A log message provided by the **Logger.MessageLogged** (p. 733) event.*
- class **ProductVersion**

  Contains the version of the RTI Connext DDS and its different libraries.

Enumerations

- enum **LogLevel** {
  FatalError = NDDS_Config_LogLevel.NDDS_CONFIG_LOG_LEVEL_FATAL_ERROR ,
  Error = NDDS_Config_LogLevel.NDDS_CONFIG_LOG_LEVEL_ERROR ,
  Warning = NDDS_Config_LogLevel.NDDS_CONFIG_LOG_LEVEL_WARNING ,
  StatusLocal = NDDS_Config_LogLevel.NDDS_CONFIG_LOG_LEVEL_STATUS_LOCAL ,
  StatusRemote = NDDS_Config_LogLevel.NDDS_CONFIG_LOG_LEVEL_STATUS_REMOTE ,
  Debug = NDDS_Config_LogLevel.NDDS_CONFIG_LOG_LEVEL_DEBUG }

  The level at which diagnostic information is logged.
- enum **SyslogLevel** {
  Emergency = RTISyslogLevel.RTI_SYSLOG_LEVEL_EMERGENCY ,
  Alert = RTISyslogLevel.RTI_SYSLOG_LEVEL_ALERT ,
  Critical = RTISyslogLevel.RTI_SYSLOG_LEVEL_CRITICAL ,
  Error = RTISyslogLevel.RTI_SYSLOG_LEVEL_ERROR ,
  Warning = RTISyslogLevel.RTI_SYSLOG_LEVEL_WARNING ,
  Notice = RTISyslogLevel.RTI_SYSLOG_LEVEL_NOTICE ,
  Informational = RTISyslogLevel.RTI_SYSLOG_LEVEL_INFORMATIONAL ,
  Debug = RTISyslogLevel.RTI_SYSLOG_LEVEL_DEBUG }

  Syslog level category assigned to RTI Connext log messages.
- enum **Verbosity** {
  Silent = LogBits.SILENCE ,
  Error = LogBits.EXCEPTION | LogBits.FATALERROR ,
  Warning = Error | LogBits.WARN ,
  StatusLocal = Warning | LogBits.LOCAL ,
  StatusRemote = StatusLocal | LogBits.REMOTE ,
  StatusAll = StatusRemote | LogBits.PERIODIC }

  The verbosity levels at which diagnostic information is logged
- enum **SyslogVerbosity** {
  Silent = SyslogBits.SILENCE ,
  Emergency = SyslogBits.EMERGENCY ,
  Alert = Emergency | SyslogBits.ALERT ,
  Critical = Alert | SyslogBits.CRITICAL ,
  Error = Critical | SyslogBits.ERROR ,
  Warning = Error | SyslogBits.WARNING ,
  Notice = Warning | SyslogBits.NOTICE ,
  Informational = Notice | SyslogBits.INFORMATIONAL ,
  Debug = Informational | SyslogBits.DEBUG }

  The Syslog verbosity levels at which RTI Connext diagnostic information is logged.
- enum **LogCategory** {
  Platform = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_PLATFORM ,
  Communication = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_COMMUNICATION ,
  Database = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_DATABASE ,
  Entities = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_ENTITIES ,
  Api = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_API ,
  Discovery = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_DISCOVERY ,
  Security = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_SECURITY ,
  User = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_USER ,
  All = NDDS_Config_LogCategory.NDDS_CONFIG_LOG_CATEGORY_ALL }

  Categories of log messages
- enum **LogPrintFormat** {
  Default = 0x3412 ,
  Timestamped = 0x3512 ,

Verbose = 0x3e16 ,
VerboseTimestamped = 0x3f16 ,
Debug = 0x366f ,
Minimal = 0x011 ,
Maximal = 0x3f7f }

Configures the format to print diagnostic information.

- enum **LogFacility** {
User = NDDS_Config_LogFacility.NDDS_CONFIG_LOG_FACILITY_USER ,
SecurityEvent = NDDS_Config_LogFacility.NDDS_CONFIG_LOG_FACILITY_SECURITY_EVENT ,
Service = NDDS_Config_LogFacility.NDDS_CONFIG_LOG_FACILITY_SERVICE ,
Middleware = NDDS_Config_LogFacility.NDDS_CONFIG_LOG_FACILITY_MIDDLEWARE }

A number that identifies the source of a log message.

Functions

- delegate void **MessageLoggedEventHandler** (**LogMessage** message)

*Event handler for **Logger.MessageLogged*** (p. *733*).

8.11.1 Detailed Description

Contains configuration utilities, such as logging

8.11.2 Enumeration Type Documentation

8.11.2.1 LogLevel

enum **Rti.Config.LogLevel**

The level at which diagnostic information is logged.

The full documentation is available in the C API: NDDSLogLevel

Enumerator

FatalError	The message describes a fatal error. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_FATAL_ERROR
Error	The message describes an error. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_ERROR
Warning	The message describes a warning. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_WARNING
StatusLocal	The message contains information about the lifecycles of local RTI Connext objects will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_STATUS_LOCAL
StatusRemote	The message contains information about the lifecycles of remote RTI Connext objects will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_STATUS_REMOTE
Debug	The message contains debug information that might be relevant to your application. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_DEBUG

8.11.2.2 SyslogLevel

enum **Rti.Config.SyslogLevel**

Syslog level category assigned to RTI Connext log messages.

The full documentation is available in the C API: NDDSSyslogLevel

Enumerator

Emergency	System is unusable. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_EMERGENCY
Alert	Should be corrected immediately. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_ALERT
Critical	Critical conditions. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_CRITICAL
Error	Error conditions. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_LEVEL_ERROR
Warning	May indicate that an error will occur if action is not taken. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_LEVEL_WARNING
Notice	Events that are unusual, but not error conditions. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_LEVEL_NOTICE
Informational	Normal operational messages that require no action. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_LEVEL_INFORMATIONAL
Debug	Information useful to developers for debugging the application. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_LEVEL_DEBUG

8.11.2.3 Verbosity

enum **Rti.Config.Verbosity**

The verbosity levels at which diagnostic information is logged

The full documentation is available in the C API: NDDSLogVerbosity

Enumerator

Silent	No output will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_VERBOSITY_SILENT
Error	Only error and fatal error messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_VERBOSITY_ERROR
Warning	Both error and warning messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_VERBOSITY_WARNING Both error and warning messages will be logged. *The full documentation is available in the C API:*
Generated by Doxygen	NDDS_CONFIG_LOG_VERBOSITY_WARNING

Enumerator

StatusLocal	Errors, warnings, and verbose information about the lifecycles of local RTI Connext objects will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_VERBOSITY_STATUS_LOCAL
StatusRemote	Errors, warnings, and verbose information about the lifecycles of remote RTI Connext objects will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_VERBOSITY_STATUS_REMOTE
StatusAll	Errors, warnings, verbose information about the lifecycles of local and remote RTI Connext objects, and periodic information about RTI Connext threads will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_VERBOSITY_STATUS_ALL

8.11.2.4 SyslogVerbosity

enum **Rti.Config.SyslogVerbosity**

The Syslog verbosity levels at which RTI Connext diagnostic information is logged.

The full documentation is available in the C API: NDDSSyslogVerbosity

Enumerator

Silent	No output will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_SILENT
Emergency	Only fatal log messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_EMERGENCY
Alert	Only fatal log messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_ALERT
Critical	Only fatal log messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_CRITICAL
Error	Only error and fatal error messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_ERROR
Warning	Fatal, error and warning messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_WARNING
Notice	Fatal, error and warning messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_NOTICE
Informational	Local, remote, fatal, error and warning messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_INFORMATIONAL
Debug	All messages will be logged. *The full documentation is available in the C API:* NDDS_CONFIG_SYSLOG_VERBOSITY_DEBUG

8.11.2.5 LogCategory

enum **Rti.Config.LogCategory**

Categories of log messages

The full documentation is available in the C API: NDDSLogCategory

Enumerator

Platform	Log messages pertaining to the underlying platform (hardware and OS) on which RTI Connext is running are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_PLATFORM
Communication	Log messages pertaining to data serialization and deserialization and network traffic are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_COMMUNICATION
Database	Log messages pertaining to the internal database in which RTI Connext objects are stored are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_DATABASE
Entities	Log messages pertaining to local and remote entities and to the discovery process are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_ENTITIES
Api	Log messages pertaining to the API layer of RTI Connext (such as argument validation) are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_API
Discovery	Log messages pertaining to Discovery are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_DISCOVERY
Security	Log messages pertaining to Security are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_SECURITY
User	Log messages pertaining to Security are in this category. *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_USER
All	Log messages pertaining to all category of RTI Connext *The full documentation is available in the C API:* NDDSLogCategory_NDDS_CONFIG_LOG_CATEGORY_ALL

8.11.2.6 LogPrintFormat

enum **Rti.Config.LogPrintFormat**

Configures the format to print diagnostic information.

Enumerator

Default	Print message, method name, category, log level and activity context (what was happening when the event occurred). *The full documentation is available in the C API:* NDDS_CONFIG_LOG_PRINT_FORMAT_DEFAULT
Timestamped	Print message, method name, category, log level, activity context, and timestamp. *The full documentation is available in the C API:* NDDS_CONFIG_LOG_PRINT_FORMAT_TIMESTAMPED

Enumerator

Verbose	Print message with all available context information. *The full documentation is available in the* *C API:* NDDS_CONFIG_LOG_PRINT_FORMAT_VERBOSE
VerboseTimestamped	Print message with all available context information, and timestamp. *The full documentation is available in the* *C API:* NDDS_CONFIG_LOG_PRINT_FORMAT_VERBOSE_TIMESTAMPED
Debug	Print a set of fields (including the activity context and backtrace information) that may be useful for internal debugging. *The full documentation is available in the* *C API:* NDDS_CONFIG_LOG_PRINT_FORMAT_DEBUG
Minimal	Print only message number and method name. *The full documentation is available in the* *C API:* NDDS_CONFIG_LOG_PRINT_FORMAT_MINIMAL
Maximal	Print all available fields (including backtrace information). *The full documentation is available in the* *C API:* NDDS_CONFIG_LOG_PRINT_FORMAT_MAXIMAL

8.11.2.7 LogFacility

enum **Rti.Config.LogFacility**

A number that identifies the source of a log message.

The full documentation is available in the *C API:* DDS_LogFacility

Enumerator

User	A log message produced by the user's application. *The full documentation is available in the* *C API:* DDS_LogFacility_NDDS_CONFIG_LOG_FACILITY_USER
SecurityEvent	A security event logged with the RTI Security Plugins Logging Plugin. *The full documentation is available in the* *C API:* DDS_LogFacility_NDDS_CONFIG_LOG_FACILITY_SECURITY_EVENT
Service	A log message produced by an Infrastructure Service. *The full documentation is available in the* *C API:* DDS_LogFacility_NDDS_CONFIG_LOG_FACILITY_SERVICE
Middleware	A log message produced by Connext. *The full documentation is available in the* *C API:* DDS_LogFacility_NDDS_CONFIG_LOG_FACILITY_MIDDLEWARE

8.11.3 Function Documentation

8.11.3.1 MessageLoggedEventHandler()

```
delegate void Rti.Config.MessageLoggedEventHandler (
            LogMessage message )
```

Event handler for **Logger.MessageLogged** (p. 733).

8.12 Rti.Dds Namespace Reference

Contains the RTI Connext DDS C# API.

Namespaces

- namespace **Core**

  Contains infrastructure types.
- namespace **Domain**

  *Contains **DomainParticipant** (p. 451) and related classes.*
- namespace **NativeInterface**

  For internal use only.
- namespace **Publication**

  Contains the classes to support publishing topics.
- namespace **Subscription**

  Contains the classes to support subscribing to topics.
- namespace **Topics**

  Contains classes for defining topics.

8.12.1 Detailed Description

Contains the RTI Connext DDS C# API.

8.13 Rti.Dds.Core Namespace Reference

Contains infrastructure types.

Namespaces

- namespace **Policy**

  Contains the QoS policies
- namespace **Status**

  *Contains the **Status** (p. 103) classes*

Data Structures

- class **AsyncWaitSetProperty**

  *Configures an AsyncWaitSet, which is also the object that manages a **Subscription.SampleProcessor** (p. 1032).*
- class **AsyncWaitSetPropertyBuilder**

  *A modifiable type used to create an immutable **AsyncWaitSetProperty** (p. 181)*
- class **CoherentSetInfo**

  *Information about the coherent set a sample belongs to. Coherent sets are started with **Publication.Publisher.Begin↩ CoherentChanges** (p. 889).*
- class **Condition**

  *Base class for all the conditions that may be attached to a **WaitSet** (p. 1248).*
- class **ContentFilterProperty**

  Type used to provide all the required information to enable content filtering.
- class **Cookie**

  Unique identifier for a written data sample in the form of a sequence of bytes.
- class **Entity**

  Abstract base class for all the DDS objects that support QoS policies, status events, and a status condition.
- class **EntityLock**

  *The lock used by an **Entity** (p. 596) to protect its operations. Obtained via **Entity.Lock** (p. 598).*
- class **GuardCondition**

  *A **Condition** (p. 228) whose **Condition.TriggerValue** (p. 230) is completely under the control of the application.*
- struct **Guid**

  A global unique identifier.
- struct **InstanceHandle**

  Handle to identity different instances of the same Topics.Topic<T> of a certain type.
- class **Locator**

  Type used to represent the addressing information needed to send a message to an RTPS Endpoint using one of the supported transports.
- class **LocatorBuilder**

  *A modifiable type used to create an immutable **Locator** (p. 718)*
- class **Priority**

  *Special priority values for policies such as **Rti.Dds.Core.Policy.ChannelSettings.Priority** (p. 214) or **Rti.Dds.Core.↩ Policy.PublishMode.Priority** (p. 905)*
- class **QosPrintAll**

  Sentinel that selects a particular ToString() overload of a QoS object.
- class **QosPrintFormat**

  Used to conifgure the output of the QoS ToString APIs.
- class **QosProvider**

  Provides access to XML-defined QoS profiles, data types, and complete DDS systems.
- struct **SampleIdentity**

  Uniquely identifies a data sample within a DDS domain and a Topic.
- class **SequenceNumber**

  Contains constants for particular sequence numbers
- class **ServiceEnvironment**

  The global entry point to the RTI Connext DDS API.
- class **StatusCondition**

  *A **Condition** (p. 228) that is associated with each **Entity** (p. 596) and activates when certain status changes happen to that **Entity** (p. 596).*

- class **ThreadContext**

  Utility *(*p. *123) that cleans up memory used by Connext on the thread.*
- class **TransportInfo**

  Contains the class id and message max size of an installed transport.
- class **TransportInfoBuilder**

  A modifiable type used to create an immutable ***TransportInfo*** *(*p. *1184)*
- struct **VendorId**

  Type used to represent the vendor of the service implementing the RTPS protocol.
- class **WaitSet**

  Allows an application to wait until one or more of the attached ***Condition*** *(*p. *228) objects have a trigger value of true or else until the timeout expires.*
- class **WaitSetProperty**

  Specifies how a ***WaitSet*** *(*p. *1248) behaves when multiple conditions are triggered.*
- class **WaitSetPropertyBuilder**

  A modifiable type used to create an immutable ***WaitSetProperty*** *(*p. *1251)*

Enumerations

- enum **TransportClassId** {
  Invalid = -1 ,
  Any = 0 ,
  UDPv4 = 1 ,
  Shmem510 = 2 ,
  UDPv6 = Shmem510 ,
  Intra = 3 ,
  UDPv6510 = 5 ,
  TCPv4LAN = 8 ,
  TCPv4WAN = 9 ,
  TLSv4LAN = 10 ,
  TLSv4WAN = 11 ,
  ReservedRange = 1000 ,
  Shmem = 0x01000000 ,
  UDPv4Wan = 0x01000001 }

  Definition of the transport class id.

8.13.1 Detailed Description

Contains infrastructure types.

8.13.2 Enumeration Type Documentation

8.13.2.1 TransportClassId

`enum` **`Rti.Dds.Core.TransportClassId`**

Definition of the transport class id.

Enumerator

Invalid	Invalid.
Any	Any.
UDPv4	UDPv4.
Shmem510	Shared memory in RTI Connext 5.1.0 and earlier.
UDPv6	UDPv6.
Intra	Intra.
UDPv6510	UDPv6 in RTI Connext 5.1.0 and earlier.
TCPv4LAN	TCPv4 LAN mode.
TCPv4WAN	TCPv4 WAN mode.
TLSv4LAN	TLSv4 LAN mode.
TLSv4WAN	TLSv4 WAN mode.
ReservedRange	Reserved for additional user-defined transport plugins.
Shmem	Shared memory.
UDPv4Wan	UDPv4 WAN.

8.14 Rti.Dds.Core.Policy Namespace Reference

Contains the QoS policies

Data Structures

- class **AllocationSettings**

  Configures the allocation policy of a resource.
- class **AllocationSettingsBuilder**

  A modifiable type used to create an immutable ***AllocationSettings*** *(*p. *132)*
- class **AsynchronousPublisher**

  Configures the mechanism that sends user data in an external middleware thread.
- class **AsynchronousPublisherBuilder**

  A modifiable type used to create an immutable ***AsynchronousPublisher*** *(*p. *175)*
- class **Availability**

  configures the availability of data.
- class **AvailabilityBuilder**

  A modifiable type used to create an immutable ***Availability*** *(*p. *187)*
- class **Batch**

  Configures mechanism for collecting multiple data samples to be sent in a single network packet.
- class **BatchBuilder**

  A modifiable type used to create an immutable ***Batch*** *(*p. *192)*
- class **BuiltinTopicReaderResourceLimits**

  Built-in topic reader's resource limits.
- class **BuiltinTopicReaderResourceLimitsBuilder**

  A modifiable type used to create an immutable ***BuiltinTopicReaderResourceLimits*** *(*p. *201)*
- class **ChannelSettings**

*Configures the properties of a channel in **MultiChannel** (p. 796).*

- class **ChannelSettingsBuilder**

  *A modifiable type used to create an immutable **ChannelSettings** (p. 212)*

- class **CompressionSettings**

  Configures data compression

- class **CompressionSettingsBuilder**

  *A modifiable type used to create an immutable **CompressionSettings** (p. 223)*

- class **Database**

  Configures various threads and resource limits used to control the internal database.

- class **DatabaseBuilder**

  *A modifiable type used to create an immutable **Database** (p. 237)*

- class **DataReaderProtocol**

  Configures Subscription.DataReader<T>-specific aspects of the RTPS protocol.

- class **DataReaderProtocolBuilder**

  *A modifiable type used to create an immutable **DataReaderProtocol** (p. 257)*

- class **DataReaderResourceLimits**

  Various settings that configure how a DataReader<T> allocates and uses physical memory for internal resources.

- class **DataReaderResourceLimitsBuilder**

  *A modifiable type used to create an immutable **DataReaderResourceLimits** (p. 301)*

- class **DataRepresentation**

  Specifies a list of representation identifiers and compression settings used by Publication.DataWriter<T> and Subscription.DataReader<T> entities to negotiate which data representation and compression settings to use.

- class **DataRepresentationBuilder**

  *A modifiable type used to create an immutable **DataRepresentation** (p. 321)*

- class **DataTags**

  Stores name-value (string) pairs that can be used to determine access permissions.

- class **DataWriterProtocol**

  Configures DDS on-the-wire protocol (RTPS).

- class **DataWriterProtocolBuilder**

  *A modifiable type used to create an immutable **DataWriterProtocol** (p. 346)*

- class **DataWriterResourceLimits**

  Configures how Publication.DataWriter<T>'s allocate and use physical memory for internal resources.

- class **DataWriterResourceLimitsBuilder**

  *A modifiable type used to create an immutable **DataWriterResourceLimits** (p. 397)*

- class **Deadline**

  Expresses the maximum duration (deadline) within which an

- class **DeadlineBuilder**

  *A modifiable type used to create an immutable **Deadline** (p. 409)*

- class **DestinationOrder**

  Controls how the middleware will deal with data sent by

- class **DestinationOrderBuilder**

  *A modifiable type used to create an immutable **DestinationOrder** (p. 413)*

- class **Discovery**

  Configures the mechanism used by the middleware to automatically discover and connect with new remote applications.

- class **DiscoveryBuilder**

  *A modifiable type used to create an immutable **Discovery** (p. 417)*

- class **DiscoveryConfig**

Controls how often to send discovery packets, how to determine when participants are alive or dead, and resources used by the discovery mechanism.

- class **DiscoveryConfigBuilder**

  *A modifiable type used to create an immutable **DiscoveryConfig** (p. 423)*

- class **DomainParticipantResourceLimits**

  *Various settings that configure how a **Rti.Dds.Domain.DomainParticipant** (p. 451) allocates and uses physical memory for internal resources, including the maximum sizes of various properties.*

- class **DomainParticipantResourceLimitsBuilder**

  *A modifiable type used to create an immutable **DomainParticipantResourceLimits** (p. 510)*

- class **Durability**

  This QoS policy specifies whether or not DDS will store and deliver previously published data samples to new Subscription.DataReader<T> entities that join the network later.

- class **DurabilityBuilder**

  *A modifiable type used to create an immutable **Durability** (p. 545)*

- class **DurabilityService**

  *Configures an external Persistence **Service** (p. 1049) used for Datawriters with a **Durability.Kind** (p. 547) of Durability↩ Kind.Persistent or DurabilityKind.Transient*

- class **DurabilityServiceBuilder**

  *A modifiable type used to create an immutable **DurabilityService** (p. 550)*

- class **EndpointGroup**

  Specifies a group of endpoints that can be collectively identified by a name and satisfied by a quorum.

- class **EndpointGroupBuilder**

  *A modifiable type used to create an immutable **EndpointGroup** (p. 592)*

- class **EntityFactory**

  *Configures whether an **Entity** (p. 596) that acts as a factory automatically enables the entities it creates or not.*

- class **EntityName**

  *Assigns a name and a role name to a **Domain.DomainParticipant** (p. 451), **Publication.Publisher** (p. 884), **Subscription.Subscriber** (p. 1090), Publication.DataWriter<T> or Subscription.DataReader<T>. Except for **Publication.Publisher** (p. 884) and **Subscription.Subscriber** (p. 1090), these names will be visible during the discovery process and in RTI tools to help you visualize and debug your system.*

- class **EntityNameBuilder**

  *A modifiable type used to create an immutable **EntityName** (p. 602)*

- class **Event**

  *Configures the **Domain.DomainParticipant** (p. 451) event thread and the resources it uses.*

- class **EventBuilder**

  *A modifiable type used to create an immutable **Event** (p. 619)*

- class **GroupData**

  Attaches a buffer of opaque data that is distributed by means of the built-in topics.

- class **History**

  Specifies the middleware behavior in the case where the value of a sample changes (one or more times) before it can be successfully communicated to one or more existing subscribers.

- class **HistoryBuilder**

  *A modifiable type used to create an immutable **History** (p. 643)*

- class **InstanceReplacementSettings**

  Instance replacement kind applied to each instance state.

- class **InstanceReplacementSettingsBuilder**

  *A modifiable type used to create an immutable **InstanceReplacementSettings** (p. 664)*

- class **LatencyBudget**

Provides a hint as to the maximum acceptable delay from the time the data is written to the time it is received by the subscribing applications.

- class **LatencyBudgetBuilder**

  *A modifiable type used to create an immutable **LatencyBudget** (p. 695)*

- class **Lifespan**

  Specifies how long the data written by a Publication.DataWriter<T> is considered valid.

- class **LifespanBuilder**

  *A modifiable type used to create an immutable **Lifespan** (p. 700)*

- class **Liveliness**

  Configures the mechanism that allows Subscription.DataReader<T> entities to detect when Publication.DataWriter<T> entities become disconnected or "dead."

- class **LivelinessBuilder**

  *A modifiable type used to create an immutable **Liveliness** (p. 704)*

- class **LocatorFilter**

  *Specifies the configuration of an individual channel within a **MultiChannel** (p. 796) Publication.DataWriter<T>.*

- class **LocatorFilters**

  *This policy is only applicable to the built-in topic for a **Publication** (p. 111)*

- class **Monitoring**

  *Enables the collection and distribution of telemetry data for a Connext application using RTI **Monitoring** (p. 744) Library 2.0*

- class **MonitoringBuilder**

  *A modifiable type used to create an immutable **Monitoring** (p. 744)*

- class **MonitoringDedicatedParticipantSettings**

  Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

- class **MonitoringDedicatedParticipantSettingsBuilder**

  *A modifiable type used to create an immutable **MonitoringDedicatedParticipantSettings** (p. 749).*

- class **MonitoringDistributionSettings**

  Configures the distribution of telemetry data

- class **MonitoringDistributionSettingsBuilder**

  *A modifiable type used to create an immutable **MonitoringDistributionSettings** (p. 754).*

- class **MonitoringEventDistributionSettings**

  Configures the distribution of event metrics

- class **MonitoringEventDistributionSettingsBuilder**

  *A modifiable type used to create an immutable **MonitoringEventDistributionSettings** (p. 760).*

- class **MonitoringLoggingDistributionSettings**

  Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

- class **MonitoringLoggingDistributionSettingsBuilder**

  *A modifiable type used to create an immutable **MonitoringLoggingDistributionSettings** (p. 765).*

- class **MonitoringLoggingForwardingSettings**

  *Configures the forwarding levels of log messages for the different **Rti.Config.LogFacility** (p. 76).*

- class **MonitoringLoggingForwardingSettingsBuilder**

  *A modifiable type used to create an immutable **MonitoringLoggingForwardingSettings** (p. 771).*

- class **MonitoringMetricSelection**

  Configures event and periodic metrics collection and distribution for a specific set of observable resources.

- class **MonitoringMetricSelectionBuilder**

  *A modifiable type used to create an immutable **MonitoringMetricSelection** (p. 776).*

- class **MonitoringPeriodicDistributionSettings**

  Configures the distribution of periodic metrics

- class **MonitoringPeriodicDistributionSettingsBuilder**

  *A modifiable type used to create an immutable **MonitoringPeriodicDistributionSettings** (p. 781).*
- class **MonitoringTelemetryData**

  Configures the telemetry data that will be distributed.
- class **MonitoringTelemetryDataBuilder**

  *A modifiable type used to create an immutable. **MonitoringTelemetryData** (p. 786).*
- class **MulticastMapping**

  Maps topics to multicast addresses
- class **MulticastMappingBuilder**

  *A modifiable type used to create an immutable **MulticastMapping** (p. 790)*
- struct **MulticastMappingFunction**

  Identifies an external function
- class **MultiChannel**

  Configures DataWriter to send data using different multicast groups (addresses) based on data value.
- class **MultiChannelBuilder**

  *A modifiable type used to create an immutable **MultiChannel** (p. 796)*
- class **Ownership**

  Specifies whether it is allowed for multiple Publication.DataWriter<T> entities to write the same instance of the data and if so, how these modifications should be arbitrated.
- class **OwnershipBuilder**

  *A modifiable type used to create an immutable **Ownership** (p. 824)*
- class **OwnershipStrength**

  Specifies the value of the strength used to arbitrate among multiple Publication.DataWriter<T> objects that attempt to modify the same instance of a data type.
- class **OwnershipStrengthBuilder**

  *A modifiable type used to create an immutable **OwnershipStrength** (p. 828)*
- class **Partition**

  Set of strings that introduces logical partitions in DomainParticipant, Publisher, or Subscriber entities
- class **PersistentStorageSettings**

  Configures durable writer history and durable reader state.
- class **PersistentStorageSettingsBuilder**

  *A modifiable type used to create an immutable **PersistentStorageSettings** (p. 840).*
- class **Presentation**

  Specifies how the samples representing changes to data instances are presented to a subscribing application.
- class **PresentationBuilder**

  *A modifiable type used to create an immutable **Presentation** (p. 853)*
- class **Profile**

  *Configures the way that XML documents containing QoS profiles are loaded by a **QosProvider** (p. 910)*
- class **ProfileBuilder**

  *A modifiable type used to create an immutable **Profile** (p. 864)*
- class **Property**

  *Stores key-value string pairs that can configure certain Connext DDS parameters not exposed through QoS policies. It can also store and propagate through the discovery mechanism application-specific information associated with an **Entity** (p. 596).*
- class **PublishMode**

  Specifies whether a Publication.DataWriter<T> sends data synchronously or asynchronously.
- class **PublishModeBuilder**

  *A modifiable type used to create an immutable **PublishMode** (p. 902)*

- class **ReaderDataLifecycle**

  Controls how a Subscription.DataReader<T> manages the lifecycle of the data that it has received.
- class **ReaderDataLifecycleBuilder**

  *A modifiable type used to create an immutable **ReaderDataLifecycle** (p. 930)*
- class **ReceiverPool**

  Configures threads used by the middleware to receive and process data from transport (for example, UDP sockets).
- class **ReceiverPoolBuilder**

  *A modifiable type used to create an immutable **ReceiverPool** (p. 935)*
- class **Reliability**

  Configures the level of reliability offered or requested.
- class **ReliabilityBuilder**

  *A modifiable type used to create an immutable **Reliability** (p. 940)*
- class **ResourceLimits**

  Controls the amount of physical memory allocated for DDS entities, if dynamic allocations are allowed, and how they occur. Also controls memory usage among different instance values for keyed topics.
- class **ResourceLimitsBuilder**

  *A modifiable type used to create an immutable **ResourceLimits** (p. 985)*
- class **RtpsReliableReaderProtocol**

  Qos related to reliable reader protocol defined in RTPS.
- class **RtpsReliableReaderProtocolBuilder**

  *A modifiable type used to create an immutable **RtpsReliableReaderProtocol** (p. 991)*
- class **RtpsReliableWriterProtocol**

  QoS related to the reliable writer protocol defined in RTPS.
- class **RtpsReliableWriterProtocolBuilder**

  *A modifiable type used to create an immutable **RtpsReliableWriterProtocol** (p. 999)*
- class **RtpsWellKnownPorts**

  Configures the RTPS well-known ports mapping.
- class **RtpsWellKnownPortsBuilder**

  *A modifiable type used to create an immutable **RtpsWellKnownPorts** (p. 1015)*
- class **Service**

  *Identifies the Connext DDS **Service** (p. 1049) that created an **Entity** (p. 596), if any.*
- class **ServiceBuilder**

  *A modifiable type used to create an immutable **Service** (p. 1049)*
- class **SystemResourceLimits**

  Configures DomainParticipant-independent resources used by RTI Connext. Mainly used to change the maximum number of DomainParticipant entities that can be created within a single process (address space).
- class **SystemResourceLimitsBuilder**

  *A modifiable type used to create an immutable **SystemResourceLimits** (p. 1123)*
- class **ThreadSettings**

  The properties of a thread of execution.
- class **ThreadSettingsBuilder**

  *A modifiable type used to create an immutable **ThreadSettings** (p. 1129)*
- class **TimeBasedFilter**

  Allows a Subscription.DataReader<T> to indicate that it is not interested in all the sample updates that occur within a time period.
- class **TimeBasedFilterBuilder**

  *A modifiable type used to create an immutable **TimeBasedFilter** (p. 1141)*
- class **TopicData**

Attaches a buffer of opaque data that is distributed by means of the built-in topics.

- class **TopicQueryDispatch**

  *Configures the ability of a Publication.DataWriter<T> to publish samples in response to a **TopicQueryDispatch** (p. 1175).*

- class **TopicQueryDispatchBuilder**

  *A modifiable type used to create an immutable **TopicQueryDispatch** (p. 1175)*

- class **TransportBuiltin**

  Specifies which built-in transports are used.

- class **TransportBuiltinAlias**

  String aliases for the built-in transports

- class **TransportBuiltinBuilder**

  *A modifiable type used to create an immutable **TransportBuiltin** (p. 1179)*

- class **TransportMulticast**

  *Specifies the multicast address on which a Subscription.DataReader<T> wants to receive its data. It can also specify a port number as well as a subset of the available (at the **Domain.DomainParticipant** (p. 451) level) transports with which to receive the multicast data.*

- class **TransportMulticastBuilder**

  *A modifiable type used to create an immutable **TransportMulticast** (p. 1188)*

- class **TransportMulticastMapping**

  *Specifies a list of topic_expressions and multicast addresses that can be used by an **Entity** (p. 596) with a specific topic name to receive data.*

- class **TransportMulticastSettings**

  Represents a list of multicast locators.

- class **TransportMulticastSettingsBuilder**

  *A modifiable type used to create an immutable **TransportMulticastSettings** (p. 1195)*

- class **TransportPriority**

  Allows the application to take advantage of transports that are capable of sending messages with different priorities.

- class **TransportPriorityBuilder**

  *A modifiable type used to create an immutable **TransportPriority** (p. 1199)*

- class **TransportSelection**

  Specifies the transports that a Publication.DataWriter<T> or a Subscription.DataReader<T> may use to send or receive data.

- class **TransportSelectionBuilder**

  *A modifiable type used to create an immutable **TransportSelection** (p. 1203)*

- class **TransportUnicast**

  *Specifies a subset of transports and a port number that can be used by an **Entity** (p. 596) to receive data.*

- class **TransportUnicastSettings**

  Specifies a list of unicast locators and a unicast port.

- class **TransportUnicastSettingsBuilder**

  *A modifiable type used to create an immutable **TransportUnicastSettings** (p. 1210)*

- class **TypeConsistencyEnforcement**

  Defines the rules that determine whether the type used to publish a given Topics.Topic<T> is consistent with that used to subscribe to it.

- class **TypeConsistencyEnforcementBuilder**

  *A modifiable type used to create an immutable **TypeConsistencyEnforcement** (p. 1214)*

- class **TypeSupport**

  Used to attach application-specific value(s) to a Publication.DataWriter<T> or Subscription.DataReader<T>.

- class **TypeSupportBuilder**

  *A modifiable type used to create an immutable **TypeSupport** (p. 1222)*

- class **UserData**

  *Provides an area where your application can store additional information related to a **Domain.DomainParticipant** (p. 451), Publication.DataWriter<T> or Subscription.DataReader<T>*
- class **WireProtocol**

  *Specifies the wire-protocol-related attributes for a **Domain.DomainParticipant** (p. 451)*
- class **WireProtocolBuilder**

  *A modifiable type used to create an immutable **WireProtocol** (p. 1257)*
- class **WriterDataLifecycle**

  Controls how a Publication.DataWriter<T> handles the lifecycle of the instances (keys) that it writes.
- class **WriterDataLifecycleBuilder**

  *A modifiable type used to create an immutable **WriterDataLifecycle** (p. 1268)*

Enumerations

- enum **CompressionId** : uint {
  None = 0 ,
  PublicationDefault = None ,
  Zlib = (0x0001 << 0) ,
  Bzip2 = (0x0001 << 1) ,
  Lz4 = (0x0001 << 2) ,
  SubscriptionDefault = All ,
  All = Zlib | Bzip2 | Lz4 }

  A mask identifying compression algorithms to enable.
- enum **InstanceReplacementKind** {
  Unregistered ,
  Alive ,
  Disposed ,
  AliveThenDisposed ,
  DisposedThenAlive ,
  AliveOrDisposed }

  Kinds of instance replacements for Rti.Dds.Publication.DataWriter<T>'s.
- enum **DestinationOrderKind** {
  ByReceptionTimestamp ,
  BySourceTimestamp }

  Kinds of destination order
- enum **DestinationOrderScopeKind** {
  Instance ,
  Topic }

  Scope of the ordering when used along with DestinationOrderKind.BySourceTimestamp.
- enum **BuiltinPluginKind** : int {
  None = 0 ,
  BuiltinSpdp = 0x0001 << 0 ,
  BuiltinSedp = 0x0001 << 1 ,
  BuiltinSdp = BuiltinSpdp | BuiltinSedp ,
  BuiltinDpse = 0x0001 << 3 ,
  BuiltinSpdp2 = 0x0001 << 4 ,
  BuiltinSdp2 = BuiltinSpdp2 | BuiltinSedp ,
  Default = BuiltinSdp }

  Built-in discovery plugins that can be used.

- enum **BuiltinChannelsKind** {
  None = 0 ,
  ServiceRequest = 0x0003 ,
  TypeLookupService = 0xF000 ,
  TypeLookupServiceRequest = 0x3000 ,
  TypeLookupServiceReply = 0xC000 ,
  Default = ServiceRequest | TypeLookupService ,
  All = ServiceRequest | TypeLookupService }

  Built-in channels that can be enabled.
- enum **RemoteParticipantPurgeKind** {
  LivelinessBased ,
  None }

  The participant's behavior for maintaining knowledge of remote participants (and their contained entities) with which discovery communication has been lost.
- enum **IgnoredEntityReplacementKind** {
  NoReplacement ,
  NotAliveFirst }

  Available replacement policies for the ignored entities.
- enum **HistoryKind** {
  KeepLast ,
  KeepAll }

  History kinds
- enum **InstanceRemovalKind** {
  NoInstanceRemoval ,
  EmptyInstanceRemoval ,
  FullyProcessedInstanceRemoval ,
  AnyInstanceRemoval }

  Sets the kinds of instances that can be replaced when instance resource limits ResourceLimits.MaxInstances" are reached.
- enum **LivelinessKind** {
  Automatic ,
  ManualByParticipant ,
  ManualByTopic }

  Kinds of liveliness
- enum **OwnershipKind** {
  Shared ,
  Exclusive }

  Kinds of ownership
- enum **PersistentJournalKind** {
  Delete = DDS_PersistentJournalKind.DDS_DELETE_PERSISTENT_JOURNAL ,
  Truncate = DDS_PersistentJournalKind.DDS_TRUNCATE_PERSISTENT_JOURNAL ,
  Persist = DDS_PersistentJournalKind.DDS_PERSIST_PERSISTENT_JOURNAL ,
  Memory = DDS_PersistentJournalKind.DDS_MEMORY_PERSISTENT_JOURNAL ,
  Wal = DDS_PersistentJournalKind.DDS_WAL_PERSISTENT_JOURNAL ,
  Off = DDS_PersistentJournalKind.DDS_OFF_PERSISTENT_JOURNAL }

  Kinds of persistent journals.
- enum **PersistentSynchronizationKind** {
  Normal = DDS_PersistentSynchronizationKind.DDS_NORMAL_PERSISTENT_SYNCHRONIZATION ,
  Full = DDS_PersistentSynchronizationKind.DDS_FULL_PERSISTENT_SYNCHRONIZATION ,
  Off = DDS_PersistentSynchronizationKind.DDS_OFF_PERSISTENT_SYNCHRONIZATION }

  Kinds of persistent storage synchronization modes.

- enum **PresentationAccessScopeKind** : int {
  Instance ,
  Topic ,
  Group ,
  HighestOffered }

  Access scope determines the largest scope spanning the entities for which the order and coherency of changes can be preserved.
- enum **PublishModeKind** {
  Synchronous ,
  Asynchronous }

  Specifies how RTI Connext sends application data on the network.
- enum **ReliabilityKind** {
  BestEffort ,
  Reliable }

  Kinds of reliability
- enum **AcknowledgmentModeKind** {
  Protocol = DDS_ReliabilityQosPolicyAcknowledgmentModeKind.DDS_PROTOCOL_ACKNOWLEDGMENT_↩
  MODE ,
  ApplicationAuto = DDS_ReliabilityQosPolicyAcknowledgmentModeKind.DDS_APPLICATION_AUTO_↩
  ACKNOWLEDGMENT_MODE ,
  ApplicationExplicit = DDS_ReliabilityQosPolicyAcknowledgmentModeKind.DDS_APPLICATION_EXPLICIT_↩
  ACKNOWLEDGMENT_MODE }

  Kinds of acknowledgment for reliable communication.
- enum **InstanceStateConsistencyKind** {
  None ,
  RecoverState }

  Indicates whether instance state consistency is enabled.
- enum **ServiceKind** {
  None ,
  Persistence ,
  Queueing ,
  Routing ,
  Recording ,
  Replay ,
  DatabaseIntegration ,
  WebIntegration ,
  ObservabilityCollector ,
  AdminConsole }

  Kinds of RTI Services
- enum **ThreadSettingsKind** : uint {
  FloatingPoint = 0x01 ,
  Stdio = 0x02 ,
  RealtimePriority = 0x08 ,
  PriorityEnforce = 0x10 ,
  CancelAsynchronous = 0x20 }

  A collection of flags used to configure threads of execution.
- enum **CpuRotationKind** {
  None ,
  RoundRobin }

  Determines how ThreadSettings.CpuList affects processor affinity for thread-related QoS policies that apply to multiple threads.

- enum **TransportBuiltinMask** {
  All = ∼None ,
  None = 0 ,
  Udpv4 = 0x00000001 << 0 ,
  Shmem = 0x00000001 << 1 ,
  Default = Udpv4 | Shmem ,
  Udpv6 = 0x00000001 << 3 ,
  Udpv4Wan = 0x00000001 << 4 }

  The built-in transports
- enum **TransportMulticastKind** {
  Automatic ,
  UnicastOnly }

  Transport Multicast Policy Kind.
- enum **TypeConsistencyKind** {
  DisallowTypeCoercion ,
  AllowTypeCoercion ,
  AutoTypeCoercion }

  Kinds of type consistency.
- enum **CdrPaddingKind** {
  Zero ,
  NotSet ,
  Auto }

  Determines whether or not the padding bytes will be set to zero during CDR serialization.
- enum **WireProtocolAutoKind** {
  FromIp ,
  FromMac ,
  FromUuid }

  Mechanism to automatically calculate the GUID prefix (see WireProtocol.RtpsAutoIdKind)

8.14.1 Detailed Description

Contains the QoS policies

8.14.2 Enumeration Type Documentation

8.14.2.1 CompressionId

`enum` **`Rti.Dds.Core.Policy.CompressionId`** `:` `uint`

A mask identifying compression algorithms to enable.

Enumerator

None	Disables user-data compression
PublicationDefault	Mask that contains the default compression algorithms enabled for a publication

Enumerator

Zlib	Selects the ZLIB compression algorithm
Bzip2	Selects the BZIP2 compression algorithm
Lz4	Selects the LZ4 compression algorithm
SubscriptionDefault	Mask that contains the default compression algorithms enabled for a subscription
All	Mask that enables all the supported built-in compression algorithms

8.14.2.2 InstanceReplacementKind

enum **Rti.Dds.Core.Policy.InstanceReplacementKind**

Kinds of instance replacements for Rti.Dds.Publication.DataWriter<T>'s.

The full documentation is available in the C API: DDSDataWriterResourceLimitsInstanceReplacementKind

Enumerator

Unregistered	Allows a Publication.DataWriter<T> to reclaim unregistered acknowledged instances. *The full documentation is available in the C API:* DDSDataWriterResourceLimitsInstanceReplacementKind_UNREGISTERED_INSTANCE_REPLACEMENT
Alive	Allows a Publication.DataWriter<T> to reclaim alive, acknowledged instances. *The full documentation is available in the C API:* DDSDataWriterResourceLimitsInstanceReplacementKind_ALIVE_INSTANCE_REPLACEMENT
Disposed	Allows a Publication.DataWriter<T> to reclaim disposed acknowledged instances. *The full documentation is available in the C API:* DDSDataWriterResourceLimitsInstanceReplacementKind_DISPOSED_INSTANCE_REPLACEMENT
AliveThenDisposed	Allows a Publication.DataWriter<T> first to reclaim an alive, acknowledged instance, and then, if necessary, a disposed, acknowledged instance. *The full documentation is available in the C API:* DDSDataWriterResourceLimitsInstanceReplacementKind_ALIVE_THEN_DISPOSED_INSTANCE_REPLACEMENT
DisposedThenAlive	Allows a Publication.DataWriter<T> first to reclaim a disposed, acknowledged instance, and then, if necessary, an alive, acknowledged instance. *The full documentation is available in the C API:* DDSDataWriterResourceLimitsInstanceReplacementKind_DISPOSED_THEN_ALIVE_INSTANCE_REPLACEMENT
AliveOrDisposed	Allows a Publication.DataWriter<T> to reclaim either an alive acknowledged instance or a disposed acknowledged instance. *The full documentation is available in the C API:* DDSDataWriterResourceLimitsInstanceReplacementKind_ALIVE_OR_DISPOSED_INSTANCE_REPLACEMENT

8.14.2.3 DestinationOrderKind

enum **Rti.Dds.Core.Policy.DestinationOrderKind**

Kinds of destination order

Enumerator

ByReceptionTimestamp	(Default) Indicates that data is ordered based on the reception time at each subscriber. *The full documentation is available in the C API:* BY_RECEPTION_TIMESTAMP_DESTINATIONORDER_QOS
BySourceTimestamp	Indicates that data is ordered based on a timestamp placed at the source (by the middleware or by the application). *The full documentation is available in the C API:* BY_SOURCE_TIMESTAMP_DESTINATIONORDER_QOS

8.14.2.4 DestinationOrderScopeKind

enum **Rti.Dds.Core.Policy.DestinationOrderScopeKind**

Scope of the ordering when used along with **DestinationOrderKind.BySourceTimestamp** (p. 92).

Enumerator

Instance	(Default) Indicates that data is ordered on a per-instance basis. *The full documentation is available in the C API:* DDS_DestinationOrderQosPolicyScopeKind_INSTANCE_SCOPE_↩ DESTINATIONORDER_QOS
Topic	(Default) Indicates that data is ordered on a per-topic basis. *The full documentation is available in the C API:* DDS_DestinationOrderQosPolicyScopeKind_TOPIC_SCOPE_↩ DESTINATIONORDER_QOS

8.14.2.5 BuiltinPluginKind

enum **Rti.Dds.Core.Policy.BuiltinPluginKind** : int

Built-in discovery plugins that can be used.

Enumerator

None	No plugins kinds.
BuiltinSpdp	Simple participant discovery plugin.
BuiltinSedp	Simple endpoint discovery plugin.
BuiltinSdp	Simple discovery plugin.
BuiltinDpse	Dynamic Participant discovery, Static Endpoint discovery.
BuiltinSpdp2	Simple participant discovery plugin 2.0.
BuiltinSdp2	Simple discovery plugin 2.0.
Default	The default discovery plugin, same as BuiltinSdp.

8.14.2.6 BuiltinChannelsKind

enum **Rti.Dds.Core.Policy.BuiltinChannelsKind**

Built-in channels that can be enabled.

Enumerator

None	No channels.
ServiceRequest	**Service** (p. 1049) Request Channel.
TypeLookupService	TypeLookup **Service** (p. 1049) Channel.
TypeLookupServiceRequest	TypeLookup **Service** (p. 1049) Request Channel.
TypeLookupServiceReply	TypeLookup **Service** (p. 1049) Reply Channel.
Default	The default channels to enable.
All	All channels.

8.14.2.7 RemoteParticipantPurgeKind

enum **Rti.Dds.Core.Policy.RemoteParticipantPurgeKind**

The participant's behavior for maintaining knowledge of remote participants (and their contained entities) with which discovery communication has been lost.

The full documentation is available in the C API: DDS_RemoteParticipantPurgeKind

Enumerator

LivelinessBased	Maintain knowledge of the remote participant for as long as it maintains its liveliness contract. *The full documentation is available in the C API:* DDS_RemoteParticipantPurge↩Kind_LIVELINESS_BASED_REMOTE_PARTICIPANT_PURGE
None	Never "forget" a remote participant with which discovery communication has been lost. *The full documentation is available in the C API:* DDS_RemoteParticipantPurgeKind_NO_REMOTE_PARTICIPANT_PURGE

8.14.2.8 IgnoredEntityReplacementKind

enum **Rti.Dds.Core.Policy.IgnoredEntityReplacementKind**

Available replacement policies for the ignored entities.

The full documentation is available in the C API: DDSDomainParticipantResourceLimitsIgnored↩
EntityReplacementKind

Enumerator

NoReplacement	Default value for **DomainParticipantResourceLimits.IgnoredEntityReplacement** (p. 526), no replacement is done, the ignore will fail if the ignored_entity table is full. *The full documentation is available in the C API:* DDSDomainParticipantResourceLimitsIgnored↩ EntityReplacementKindNO_REPLACEMENT_IGNORED_ENTITY_REPLACEMENT
NotAliveFirst	If the ignored_entity table is full and if there is at least one ignored participant in the table, the participant record that has been not updated for the longest time will be replaced. Note that if the table is full and there are no participant records to replace, the ignore will fail. *The full documentation is available in the C API:* DDSDomainParticipantResourceLimitsIgnoredEntityReplacement↩ KindNOT_ALIVE_FIRST_IGNORED_ENTITY_REPLACEMENT

8.14.2.9 HistoryKind

enum **Rti.Dds.Core.Policy.HistoryKind**

History (p. 643) kinds

Enumerator

KeepLast	Keep the last **History.Depth** (p. 646) samples. *The full documentation is available in the C API:* KEEP_LAST_HISTORY_QOS
KeepAll	Keep all the samples. *The full documentation is available in the C API:* KEEP_ALL_HISTORY_QOS

8.14.2.10 InstanceRemovalKind

enum **Rti.Dds.Core.Policy.InstanceRemovalKind**

Sets the kinds of instances that can be replaced when instance resource limits **ResourceLimits.MaxInstances** (p. 987)" are reached.

The full documentation is available in the C API: DDS_DataReaderInstanceRemovalKind

Enumerator

NoInstanceRemoval	No instance can be removed. *The full documentation is available in the C API:* DDS_DataReaderInstanceRemovalKind_NO_INSTANCE_↩ REMOVAL
EmptyInstanceRemoval	Only empty instances can be removed. *The full documentation is available in the C API:* DDS_DataReaderInstanceRemovalKind_EMPTY_↩ INSTANCE_REMOVAL

Enumerator

FullyProcessedInstanceRemoval	Only fully-processed instances can be removed. *The full documentation is available in the* *C API:* DDS_DataReaderInstanceRemovalKind↩ _FULLY_PROCESSED_INSTANCE_REMOVAL
AnyInstanceRemoval	Any instance can be removed. *The full documentation is available in the* *C API:* DDS_DataReaderInstanceRemovalKind_ANY_INSTANCE↩ _REMOVAL

8.14.2.11 LivelinessKind

enum **Rti.Dds.Core.Policy.LivelinessKind**

Kinds of liveliness

Enumerator

Automatic	(Default) The infrastructure will automatically signal for the writers at least as often as required by the writer's **Liveliness.LeaseDuration** (p. 706) *The full documentation is available in the* *C API:* AUTOMATIC_LIVELINESS_QOS
ManualByParticipant	The infrastructure will assume that as long as at least one writer belonging to the participant (or the participant itself) has asserted its liveliness, then the other writers belonging to the same participant are also alive. *The full documentation is available in the* *C API:* MANUAL_BY_PARTICIPANT_LIVELINESS_QOS
ManualByTopic	The infrastructure will only assume liveliness of a writer if the application has asserted liveliness of that writer. *The full documentation is available in the* *C API:* MANUAL_BY_TOPIC_LIVELINESS_QOS

8.14.2.12 OwnershipKind

enum **Rti.Dds.Core.Policy.OwnershipKind**

Kinds of ownership

The full documentation is available in the *C API:* DDSOwnershipQosPolicyKind

Enumerator

Shared	(Default) Indicates shared ownership for each instance among all writers. *The full documentation is available in the* *C API:* DDSOwnershipQosPolicyKind_EXCLUSIVE_OWNERSHIP_QOS
Exclusive	Indicates that each instance can only be owned by one writer, but the owner of an instance can change dynamically *The full documentation is available in the* *C API:* DDSOwnershipQosPolicyKind_EXCLUSIVE_OWNERSHIP_QOS

8.14.2.13 PersistentJournalKind

enum **Rti.Dds.Core.Policy.PersistentJournalKind**

Kinds of persistent journals.

Enumerator

Delete	Deletes the rollback journal at the conclusion of each transaction. *The full documentation is available in the C API:* DDS_PersistentJournalKind_DELETE_PERSISTENT_JOURNAL
Truncate	Commits transactions by truncating the rollback journal to zero-length instead of deleting it. *The full documentation is available in the C API:* DDS_PersistentJournalKind_TRUNCATE_PERSISTENT_JOURNAL
Persist	Prevents the rollback journal from being deleted at the end of each transaction. Instead, the header of the journal is overwritten with zeros. *The full documentation is available in the C API:* DDS_PersistentJournalKind_PERSIST_PERSISTENT_JOURNAL
Memory	Stores the rollback journal in volatile RAM. This saves disk I/O. *The full documentation is available in the C API:* DDS_PersistentJournalKind_MEMORY_PERSISTENT_JOURNAL
Wal	Uses a write-ahead log instead of a rollback journal to implement transactions. *The full documentation is available in the C API:* DDS_PersistentJournalKind_WAL_PERSISTENT_JOURNAL
Off	Disables the rollback journal. *The full documentation is available in the C API:* DDS_PersistentJournalKind_OFF_PERSISTENT_JOURNAL

8.14.2.14 PersistentSynchronizationKind

enum **Rti.Dds.Core.Policy.PersistentSynchronizationKind**

Kinds of persistent storage synchronization modes.

Enumerator

Normal	Data (e.g., new sample) is written to disk at critical moments. *The full documentation is available in the C API:* DDS_PersistentSynchronizationKind_NORMAL_PERSISTENT_SYNCHRONIZATION
Full	Data (e.g., new sample) is written to physical disk immediately. *The full documentation is available in the C API:* DDS_PersistentSynchronizationKind_FULL_PERSISTENT_SYNCHRONIZATION
Off	No synchronization is enforced. *The full documentation is available in the C API:* DDS_PersistentSynchronizationKind_OFF_PERSISTENT_SYNCHRONIZATION

8.14.2.15 PresentationAccessScopeKind

enum **Rti.Dds.Core.Policy.PresentationAccessScopeKind** : int

Access scope determines the largest scope spanning the entities for which the order and coherency of changes can be preserved.

Enumerator

Instance	Scope spans only a single instance
Topic	Scope spans all instances within the same writer (or reader) but not across instances in different writers (or readers)
Group	Scope spans all instances belonging to writers (or readers) within the same publisher (or subscriber)
HighestOffered	This value only applies to a subscriber. The subscriber will use the access scope specified by each publisher.

8.14.2.16 PublishModeKind

enum **Rti.Dds.Core.Policy.PublishModeKind**

Specifies how RTI Connext sends application data on the network.

The full documentation is available in the C API: DDS_PublishModeQosPolicyKind

Enumerator

Synchronous	Indicates to send data synchronously. *The full documentation is available in the C API:* SYNCHRONOUS_PUBLISH_MODE_QOS
Asynchronous	Indicates to send data asynchronously using a separate publishing thread. *The full documentation is available in the C API:* ASYNCHRONOUS_PUBLISH_MODE_QOS

8.14.2.17 ReliabilityKind

enum **Rti.Dds.Core.Policy.ReliabilityKind**

Kinds of reliability

Enumerator

BestEffort	Indicates that it is acceptable not to retry propagation of any samples. *The full documentation is available in the C API:* DDSReliabilityQosPolicyKind_BEST_EFFORT_RELIABILITY_QOS
Reliable	Indicates that the middleware will attempt to deliver all samples in its history. Missed samples may be resent. *The full documentation is available in the C API:* DDSReliabilityQosPolicyKind_RELIABLE_RELIABILITY_QOS

8.14.2.18 AcknowledgmentModeKind

enum **Rti.Dds.Core.Policy.AcknowledgmentModeKind**

Kinds of acknowledgment for reliable communication.

Enumerator

Protocol	Samples are acknowledged at the RTPS protocol level *The full documentation is available in the C API:* DDSReliabilityQosPolicyAcknowledgmentModeKind↩ PROTOCOL_ACKNOWLEDGEMENT_MODE
ApplicationAuto	Samples are acknowledged at the application level, automatically after a subscribing application has accessed them. *The full documentation is available in the C API:* DDSReliabilityQosPolicyAcknowledgmentModeKindAPPLICATION_↩ AUTO_ACKNOWLEDGEMENT_MODE
ApplicationExplicit	Samples are individually acknowledged at the application level specifying each sequence number. *The full documentation is available in the C API:* DDSReliabilityQosPolicyAcknowledgmentModeKindAPPLICATION_↩ EXPLICIT_ACKNOWLEDGEMENT_MODE

8.14.2.19 InstanceStateConsistencyKind

enum **Rti.Dds.Core.Policy.InstanceStateConsistencyKind**

Indicates whether instance state consistency is enabled.

Enumerator

None	Instance state consistency is not enabled. Instance states on the DataReader are not guaranteed to be correct after liveliness is regained after a disconnect. Instance state is not restored on a DataReader after reconnecting with a DataWriter until the DataWriter sends a new sample. When DataReaders rediscover DataWriters, they will not request updated instance state data. DataWriters always provide instance state data alongside each sample update regardless of this setting.

Enumerator

RecoverState	Instance state consistency is enabled. Instance states on the DataReader are guaranteed to be correct after liveliness is regained after a disconnect. Instance state is restored on the DataReader after it reconnects with a DataWriter that has regained liveliness, even before the DataWriter sends a new sample. When DataReaders rediscover DataWriters, they will request updated instance state data. DataWriters will respond to requests for updated instance state data and publish updates on a builtin channel. DataWriters still provide instance state data alongside each sample update regardless of this setting. The following limitation applies to using `RECOVER_INSTANCE_STATE_CONSISTENCY`: If the DDSDestinationOrderQosPolicyKind is set to BY_SOURCE_TIMESTAMP_DESTINATIONORDER_QOS, `RECOVER_INSTANCE_STATE_CONSISTENCY` can only be used if scope is set to DDS_DestinationOrderQosPolicyScopeKind_INSTANCE_SCOPE_DESTINATIONORDER_QOS (the default).

8.14.2.20 ServiceKind

`enum` **`Rti.Dds.Core.Policy.ServiceKind`**

Kinds of RTI Services

Enumerator

None	The **Entity** (p. 596) wasn't created by a **Service** (p. 1049) (default)
Persistence	The **Entity** (p. 596) was created by RTI Persistence **Service** (p. 1049)
Queueing	The **Entity** (p. 596) was created by RTI Queueing **Service** (p. 1049)
Routing	The **Entity** (p. 596) was created by RTI Routing **Service** (p. 1049)
Recording	The **Entity** (p. 596) was created by RTI Recording **Service** (p. 1049)
Replay	The **Entity** (p. 596) was created by RTI Replay **Service** (p. 1049)
DatabaseIntegration	The **Entity** (p. 596) was created by RTI **Database** (p. 237) Integration **Service** (p. 1049)
WebIntegration	The **Entity** (p. 596) was created by RTI Web Integration **Service** (p. 1049)
ObservabilityCollector	The **Entity** (p. 596) was created by RTI Observability Collector **Service** (p. 1049)
AdminConsole	The **Entity** (p. 596) was created by RTI Admin Console

8.14.2.21 ThreadSettingsKind

`enum` **`Rti.Dds.Core.Policy.ThreadSettingsKind`** `:` `uint`

A collection of flags used to configure threads of execution.

The full documentation is available in the `C API:`DDSThreadSettingsKind

Enumerator

FloatingPoint	Support floating point. *The full documentation is available in the C API:* THREAD_SETTINGS_FLOATING_POINT
Stdio	This thread can do standard io *The full documentation is available in the C API:* THREAD_SETTINGS_STDIO
RealtimePriority	This thread will run in real-time priority mode. *The full documentation is available in the C API:* THREAD_SETTINGS_REALTIME_PRIORITY
PriorityEnforce	Insist on the specified priority and fail if OS doesn't like it. *The full documentation is available in the C API:* THREAD_SETTINGS_PRIORITY_ENFORCE
CancelAsynchronous	Indicates to create the thread with the OS default stack size. If not supported, will use the platform default. *The full documentation is available in the C API:* THREAD_SETTINGS_CANCEL_ASYNCHRONOUS

8.14.2.22 CpuRotationKind

enum **Rti.Dds.Core.Policy.CpuRotationKind**

Determines how **ThreadSettings.CpuList** (p. 1131) affects processor affinity for thread-related QoS policies that apply to multiple threads.

The full documentation is available in the C API: DDSThreadSettingsCpuRotationKind

Enumerator

None	Any thread controlled by this QoS can run on any listed processor, as determined by OS scheduling. *The full documentation is available in the C API:* THREAD_SETTINGS_CPU_NO_ROTATION
RoundRobin	Threads controlled by this QoS will be assigned one processor from the list in round-robin order. *The full documentation is available in the C API:* THREAD_SETTINGS_CPU_RR_ROTATION

8.14.2.23 TransportBuiltinMask

enum **Rti.Dds.Core.Policy.TransportBuiltinMask**

The built-in transports

Enumerator

All	Select all built-in transports
None	Select no built-in transport
Udpv4	Built-in UDPv4 transport

Enumerator

Shmem	Built-in shared memory transport
Default	Default selection: Udpv4 and Shmem
Udpv6	Built-in UDPv6 transport
Udpv4Wan	Built-in UDPv4 asymmetric transport

8.14.2.24 TransportMulticastKind

enum **Rti.Dds.Core.Policy.TransportMulticastKind**

Transport Multicast **Policy** (p. 80) Kind.

The full documentation is available in the C API: DDS_TransportMulticastQosPolicyKind

Enumerator

Automatic	Selects the multicast address automatically. *The full documentation is available in the C API:* DDS_TransportMulticastQosPolicyKind_AUTOMATIC_TRANSPORT_↩ MULTICAST_QOS
UnicastOnly	Selects a unicast-only mode. *The full documentation is available in the C API:* DDS_TransportMulticastQosPolicyKind_UNICAST_ONLY_TRANSPORT_↩ MULTICAST_QOS

8.14.2.25 TypeConsistencyKind

enum **Rti.Dds.Core.Policy.TypeConsistencyKind**

Kinds of type consistency.

The full documentation is available in the C API: DDS_TypeConsistencyKind

Enumerator

DisallowTypeCoercion	The Publication.DataWriter<T> and the Subscription.DataReader<T> must support the same data type in order for them to communicate. *The full documentation is available in the C API:* DISALLOW_TYPE_COERCION
AllowTypeCoercion	The Publication.DataWriter<T> and the Subscription.DataReader<T> need not support the same data type in order for them to communicate as long as the Subscription.DataReader<T>'s type is assignable from the Publication.DataWriter<T>'s type. *The full documentation is available in the C API:* ALLOW_TYPE_COERCION
AutoTypeCoercion	Equal to AllowTypeCoercion. *The full documentation is available in the C API:* AUTO_TYPE_COERCION

8.14.2.26 CdrPaddingKind

enum **Rti.Dds.Core.Policy.CdrPaddingKind**

Determines whether or not the padding bytes will be set to zero during CDR serialization.

The full documentation is available in the C API: DDS_CdrPaddingKind

Enumerator

Zero	Padding bytes will be set to zero during CDR serialization. *The full documentation is available in the C API:* DDS_CdrPaddingKind_ZERO_CDR_PADDING
NotSet	Padding bytes will not be set to any value during CDR serialization. *The full documentation is available in the C API:* DDS_CdrPaddingKind_NOT_SET_CDR_PADDING
Auto	By default, **Domain.DomainParticipant** (p. 451)'s behavior is set to NotSet, and Publication.DataWriter<T>'s and Subscription.DataReader<T>'s inherit the behavior from the **Domain.DomainParticipant** (p. 451). *The full documentation is available in the C API:* DDS_CdrPaddingKind_AUTO_CDR_PADDING

8.14.2.27 WireProtocolAutoKind

enum **Rti.Dds.Core.Policy.WireProtocolAutoKind**

Mechanism to automatically calculate the GUID prefix (see **WireProtocol.RtpsAutoIdKind** (p. 1260))

Enumerator

FromIp	Select the IP-based algorithm. *The full documentation is available in the C API:* RTPS_AUTO_ID_FROM_IP
FromMac	Select the MAC-based algorithm. *The full documentation is available in the C API:* RTPS_AUTO_ID_FROM_MAC
FromUuid	Select the UUID-based algorithm, which doesn't require a network interface. *The full documentation is available in the C API:* RTPS_AUTO_ID_FROM_UUID

8.15 Rti.Dds.Core.Status Namespace Reference

Contains the **Status** (p. 103) classes

Data Structures

- class **DataReaderCacheStatus**

  The status of the reader's cache.
- class **DataReaderProtocolStatus**

  The status of a reader's internal protocol related metrics, like the number of samples received and rejected; and status of wire protocol traffic.
- class **DataWriterCacheStatus**

  The status of the DataWriter's cache. Provides information on cache related metrics such as the number of samples and instances in the DataWriter queue.
- class **DataWriterProtocolStatus**

  The status of a writer's internal protocol related metrics, like the number of samples pushed and pulled; and status of wire protocol traffic.
- class **DomainParticipantProtocolStatus**

  The status of a participant's protocol related metrics, like the number of corrupted messages, change in corrupted messages and timestamp of the last corrupted message.
- class **InconsistentTopicStatus**

  *Notifies of a change in the **StatusMask.InconsistentTopic** (p. 108) status*
- class **InvalidLocalAdvanceNoticeStatus**

  Notifies you when a local DomainParticipant's artifact (identity or permissions) is about to expire
- class **LivelinessChangedStatus**

  Indicates that the liveliness of one or more matched Publication.DataWriter<T> has changed.
- class **LivelinessLostStatus**

  *The liveliness that the Publication.DataWriter<T> has committed to through its **Policy.Liveliness** (p. 704) was not respected, thus Subscription.DataReader<T> entities will consider the Publication.DataWriter<T> as no longer alive.*
- class **OfferedDeadlineMissedStatus**

  *Notifies of a change in the **StatusMask.OfferedDeadlineMissed** (p. 108) status*
- class **OfferedIncompatibleQosStatus**

  A QosPolicy value was incompatible with what was requested.
- class **PublicationMatchedStatus**

  *Notifies of a change in the **StatusMask.PublicationMatched** (p. 109) status*
- class **ReliableReaderActivityChangedStatus**

  Describes the activity (i.e. are acknowledgements forthcoming) of reliable readers matched to a reliable writer.
- class **ReliableWriterCacheChangedStatus**

  A summary of the state of a data writer's cache of unacknowledged samples written.
- class **RequestedDeadlineMissedStatus**

  *Indicates that the Subscription.DataReader<T> did not receive a new sample for an data-instance within the time period set in the Subscription.DataReader<T>'s **Policy.Deadline** (p. 409).*
- class **RequestedIncompatibleQosStatus**

  Indicates that the Subscription.DataReader<T> discovered a Publication.DataWriter<T> for the same Topics.Topic<↩ T>, but that Subscription.DataReader<T> had requested QoS settings incompatible with the ones offered by the Publication.DataWriter<T>.
- class **SampleLostStatus**

  Indicates that one or more samples written by a matched Publication.DataWriter<T> have failed to be received by the Subscription.DataReader<T>.
- class **SampleRejectedStatus**

  Indicates that one or more samples received from a matched Publication.DataWriter<T> have been rejected by the Subscription.DataReader<T> because a resource limit would have been exceeded.
- class **ServiceRequestAcceptedStatus**

  *Notifies of a change in the **StatusMask.ServiceRequestAccepted** (p. 109) status.*
- class **SubscriptionMatchedStatus**

  Indicates that the Subscription.DataReader<T> discovered a matching Publication.DataWriter<T>.

Enumerations

- enum **SampleLostStatusKind** : int {
  NotLost = DDS_SampleLostStatusKind.DDS_NOT_LOST ,
  LostByWriter = DDS_SampleLostStatusKind.DDS_LOST_BY_WRITER ,
  LostByInstancesLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_INSTANCES_LIMIT ,
  LostByRemoteWritersPerInstanceLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_REMOTE_↩
  WRITERS_PER_INSTANCE_LIMIT ,
  LostByIncompleteCoherentSet = DDS_SampleLostStatusKind.DDS_LOST_BY_INCOMPLETE_COHERENT↩
  _SET ,
  LostByLargeCoherentSet = DDS_SampleLostStatusKind.DDS_LOST_BY_LARGE_COHERENT_SET ,
  LostBySamplesPerRemoteWriterLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_SAMPLES_PER_↩
  REMOTE_WRITER_LIMIT ,
  LostByVirtualWritersLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_VIRTUAL_WRITERS_LIMIT ,
  LostByRemoteWritersPerSampleLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_REMOTE_WRITERS↩
  _PER_SAMPLE_LIMIT ,
  LostByAvailabilityWaitingTime = DDS_SampleLostStatusKind.DDS_LOST_BY_AVAILABILITY_WAITING_↩
  TIME ,
  LostByRemoteWriterSamplesPerVirtualQueueLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_↩
  REMOTE_WRITER_SAMPLES_PER_VIRTUAL_QUEUE_LIMIT ,
  LostByOutOfMemory = DDS_SampleLostStatusKind.DDS_LOST_BY_OUT_OF_MEMORY ,
  LostByUnknownInstance = DDS_SampleLostStatusKind.DDS_LOST_BY_UNKNOWN_INSTANCE ,
  LostByDeserializationFailure = DDS_SampleLostStatusKind.DDS_LOST_BY_DESERIALIZATION_FAILURE ,
  LostByDecodeFailure = DDS_SampleLostStatusKind.DDS_LOST_BY_DECODE_FAILURE ,
  LostBySamplesPerInstanceLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_SAMPLES_PER_↩
  INSTANCE_LIMIT ,
  LostBySamplesLimit = DDS_SampleLostStatusKind.DDS_LOST_BY_SAMPLES_LIMIT }

  Represents the reason why a sample written by a matched Publication.DataWriter<T> have failed to be received by the Subscription.DataReader<T>.
- enum **SampleRejectedStatusKind** : int {
  NotRejected = 0 ,
  RejectedByInstancesLimit = 1 ,
  RejectedBySamplesLimit = 2 ,
  RejectedBySamplesPerInstanceLimit = 3 ,
  RejectedBySamplesPerRemoteWriterLimit = 6 ,
  RejectedByRemoteWriterSamplesPerVirtualQueueLimit = 9 ,
  RejectedByDecodeFailure = 10 }

  Represents the reason why a sample may have been rejected by the Subscription.DataReader<T>.
- enum **StatusMask** : uint {
  None = 0U ,
  InconsistentTopic = 0x0001U << 0 ,
  OfferedDeadlineMissed = 0x0001U << 1 ,
  RequestedDeadlineMissed = 0x0001U << 2 ,
  OfferedIncompatibleQos = 0x0001U << 5 ,
  RequestedIncompatibleQos = 0x0001U << 6 ,
  SampleLost = 0x0001U << 7 ,
  SampleRejected = 0x0001U << 8 ,
  DataOnReaders = 0x0001U << 9 ,
  DataAvailable = 0x0001U << 10 ,
  LivelinessLost = 0x0001U << 11 ,
  LivelinessChanged = 0x0001U << 12 ,
  PublicationMatched = 0x0001U << 13 ,
  SubscriptionMatched = 0x0001U << 14 ,
  InvalidLocalAdvanceNotice = 0x0001U << 20 ,

ServiceRequestAccepted = 0x0001U << 21 ,
DataWriterApplicationAcknowledgementReceived = 0x0001U << 22 ,
DataWriterInstanceReplaced = 0x0001U << 23 ,
ReliableWriterCacheChanged = 0x0001U << 24 ,
ReliableReaderActivityChanged = 0x0001U << 25 ,
DataWriterCache = 0x0001U << 26 ,
DataWriterProtocol = 0x0001U << 27 ,
DataReaderCache = 0x0001U << 28 ,
DataReaderProtocol = 0x0001U << 29 ,
DataWriterSampleRemoved = 0x0001U << 31 ,
All = ~None }

Each flag identifies a Entity status.

8.15.1 Detailed Description

Contains the **Status** (p. 103) classes

8.15.2 Enumeration Type Documentation

8.15.2.1 SampleLostStatusKind

`enum` **`Rti.Dds.Core.Status.SampleLostStatusKind`** : `int`

Represents the reason why a sample written by a matched Publication.DataWriter<T> have failed to be received by the Subscription.DataReader<T>.

The full documentation is available in the `C API:DDSSampleLostStatusKind`

Enumerator

NotLost	The sample was not lost.
LostByWriter	A Publication.DataWriter<T> removed the sample before being received by the Subscription.DataReader<T>.
LostByInstancesLimit	A resource limit on the number of instances was reached.
LostByRemoteWritersPerInstanceLimit	A resource limit on the number of remote writers for a single instance from which a Subscription.DataReader<T> may read was reached.
LostByIncompleteCoherentSet	A sample was lost because it was part of an incomplete coherent set. An incomplete coherent set is a coherent set for which some of the samples are missing.
LostByLargeCoherentSet	A sample was lost because it was part of a large coherent set.
LostBySamplesPerRemoteWriterLimit	A resource limit on the number of samples from a given remote writer that a Subscription.DataReader<T> may store was reached.

Enumerator

LostByVirtualWritersLimit	A resource limit on the number of virtual writers from which a Subscription.DataReader<T> may read was reached.
LostByRemoteWritersPerSampleLimit	A resource limit on the number of remote writers per sample was reached.
LostByAvailabilityWaitingTime	**Policy.Availability.MaxDataAvailabilityWaitingTime** (p. 189) expired.
LostByRemoteWriterSamplesPerVirtualQueueLimit	A resource limit on the number of samples published by a remote writer on behalf of a virtual writer that a Subscription.DataReader<T> may store was reached.
LostByOutOfMemory	A sample was lost because there was not enough memory to store the sample.
LostByUnknownInstance	A received sample was lost because it doesn't contain enough information for the Subscription.DataReader<T> to know what instance it is associated with.
LostByDeserializationFailure	A received sample was lost because it could not be deserialized.
LostByDecodeFailure	When using **Policy.ReliabilityKind.BestEffort** (p. 99): A received sample was lost because it could not be decoded.
LostBySamplesPerInstanceLimit	When using **Policy.ReliabilityKind.BestEffort** (p. 99): A resource limit on the number of samples per instance (**Policy.ResourceLimits.MaxSamplesPerInstance** (p. 987)) was reached.
LostBySamplesLimit	When using **Policy.ReliabilityKind.BestEffort** (p. 99): A resource limit on the number of samples (**Policy.ResourceLimits.MaxSamples** (p. 987)) was reached.

8.15.2.2 SampleRejectedStatusKind

```
enum Rti.Dds.Core.Status.SampleRejectedStatusKind : int
```

Represents the reason why a sample may have been rejected by the Subscription.DataReader<T>.

The full documentation is available in the C API: `DDSSampleRejectedStatusKind`

Enumerator

NotRejected	Sample was accepted.
RejectedByInstancesLimit	A resource limit on the number of instances that can be handled at the same time by the Subscription.DataReader<T> was reached.
RejectedBySamplesLimit	A resource limit on the total number of samples was reached.
RejectedBySamplesPerInstanceLimit	A resource limit on the number of samples per instance was reached.

Enumerator

RejectedBySamplesPerRemoteWriterLimit	A resource limit on the number of samples that a Subscription.DataReader<T> may store from a specific Publication.DataWriter<T> was reached.
RejectedByRemoteWriterSamplesPerVirtualQueueLimit	A resource limit on the number of samples published by a remote Publication.DataWriter<T> on behalf of a virtual writer that a Subscription.DataReader<T> may store was reached.
RejectedByDecodeFailure	Failure to decode the sample by the Subscription.DataReader<T>.

8.15.2.3 StatusMask

`enum` **`Rti.Dds.Core.Status.StatusMask`** `:` `uint`

Each flag identifies a **Entity** (p. 596) status.

Enumerator

None	A mask with no status.
InconsistentTopic	Another topic exists with the same name but different characteristics. *The full documentation is available in the C API:* `INCONSISTENT_TOPIC_STATUS`
OfferedDeadlineMissed	The deadline that the Publication.DataWriter<T> has committed through its **Policy.Deadline** (p. 409) policy was not respected for a specific instance. *The full documentation is available in the C API:* `OFFERED_DEADLINE_MISSED_STATUS`
RequestedDeadlineMissed	The deadline that the Subscription.DataReader<T> was expecting through its **Policy.Deadline** (p. 409) was not respected for a specific instance. *The full documentation is available in the C API:* `REQUESTED_DEADLINE_MISSED_STATUS`
OfferedIncompatibleQos	A Qos policy value was incompatible with what was requested. *The full documentation is available in the C API:* `OFFERED_INCOMPATIBLE_QOS_STATUS`
RequestedIncompatibleQos	A Qos policy value was incompatible with what is offered. *The full documentation is available in the C API:* `REQUESTED_INCOMPATIBLE_QOS_STATUS`
SampleLost	A sample has been lost (i.e. was never received). *The full documentation is available in the C API:* `SAMPLE_LOST_STATUS`
SampleRejected	A (received) sample has been rejected. *The full documentation is available in the C API:* `SAMPLE_REJECTED_STATUS`
DataOnReaders	New data is available. *The full documentation is available in the C API:* `DATA_ON_READERS_STATUS`

Enumerator

DataAvailable	One or more new data samples have been received. *The full documentation is available in the C API:* DATA_AVAILABLE_STATUS
LivelinessLost	The liveliness that the Publication.DataWriter<T> has committed to through its **Policy.Liveliness** (p. 704) was not respected, thus Subscription.DataReader<T> entities will consider the Publication.DataWriter<T> as no longer alive. *The full documentation is available in the C API:* LIVELINESS_LOST_STATUS
LivelinessChanged	The liveliness of one or more Publication.DataWriter<T> that were writing instances read through the Subscription.DataReader<T> has changed. Some Publication.DataWriter<T> have become alive or not_alive. *The full documentation is available in the C API:* LIVELINESS_CHANGED_STATUS
PublicationMatched	The Publication.DataWriter<T> has found Subscription.DataReader<T> that matches the Topics.Topic<T> and has compatible QoS. *The full documentation is available in the C API:* PUBLICATION_MATCHED_STATUS
SubscriptionMatched	The Subscription.DataReader<T> has found Publication.DataWriter<T> that matches the Topics.Topic<T> and has compatible QoS. *The full documentation is available in the C API:* SUBSCRIPTION_MATCHED_STATUS
InvalidLocalAdvanceNotice	The local **Domain.DomainParticipant** (p. 451) has or is about to have an invalid identity or permissions credential. *The full documentation is available in the C API:* INVALID_LOCAL_ADVANCE_NOTICE_STATUS
ServiceRequestAccepted	A service request has been received for a Publication.DataWriter<T>. *The full documentation is available in the C API:* SERVICE_REQUEST_ACCEPTED_STATUS
DataWriterApplicationAcknowledgementReceived	A Publication.DataWriter<T> has received an application-level acknowledgment for a sample. *The full documentation is available in the C API:* DATA_↩ WRITER_APPLICATION_ACKNOWLEDGMENT_STATUS
DataWriterInstanceReplaced	A Publication.DataWriter<T> instance has been replaced. *The full documentation is available in the C API:* DATA_WRITER_INSTANCE_REPLACED_STATUS
ReliableWriterCacheChanged	The number of unacknowledged samples in a reliable writer's cache has changed and reached a pre-defined trigger point. *The full documentation is available in the C API:* RELIABLE_WRITER_CACHE_CHANGED_STATUS
ReliableReaderActivityChanged	One or more reliable readers has become active or inactive. *The full documentation is available in the C API:* RELIABLE_READER_ACTIVITY_CHANGED_STATUS
DataWriterCache	The status of the writer's cache. *The full documentation is available in the C API:* DATA_WRITER_CACHE_STATUS

Enumerator

DataWriterProtocol	The status of a writer's internal protocol related metrics. *The full documentation is available in the C API:* DATA_WRITER_PROTOCOL_STATUS
DataReaderCache	The status of the reader's cache. *The full documentation is available in the C API:* DATA_READER_CACHE_STATUS
DataReaderProtocol	The status of a reader's internal protocol related metrics. *The full documentation is available in the C API:* DATA_READER_PROTOCOL_STATUS
DataWriterSampleRemoved	A sample has been removed from a Publication.DataWriter<T>. *The full documentation is available in the C API:* DATA_WRITER_SAMPLE_REMOVED_STATUS
All	A mask with all statuses

8.16 Rti.Dds.Core.XmlPlugin Namespace Reference

8.17 Rti.Dds.Domain Namespace Reference

Contains **DomainParticipant** (p. 451) and related classes.

Data Structures

- class **DomainParticipant**

  Container for all other Entity objects.
- class **DomainParticipantConfigParams**

  Allows configuring QosProvider.CreateParticipantFromConfig(string, DomainParticipantConfigParams).
- class **DomainParticipantFactory**

  *Singleton that manages the creation of **DomainParticipant** (p. 451) objects.*
- class **DomainParticipantFactoryQos**

  *QoS policies supported by the **DomainParticipantFactory** (p. 478).*
- class **DomainParticipantQos**

  *QoS policies supported by a **DomainParticipant** (p. 451).*

8.17.1 Detailed Description

Contains **DomainParticipant** (p. 451) and related classes.

8.18 Rti.Dds.NativeInterface Namespace Reference

For internal use only.

8.18.1 Detailed Description

For internal use only.

8.19 Rti.Dds.Publication Namespace Reference

Contains the classes to support publishing topics.

Data Structures

- class **AcknowledgmentInfo**

  Information about an application-acknowledged sample.
- class **AnyDataWriter**

  The base of a typed DataWriter<T>. Provides type-independent methods and properties.
- struct **CoherentSet**

  *A disposable object returned when a coherent set begins with **Publisher.BeginCoherentChanges** (p. 889) and whose **Dispose** (p. 218) method ends it.*
- class **DataWriter**

  *Allows an application to set the value of the data to be published under a given **Topic<T>** (p. 342).*
- class **DataWriterQos**

  Container of the QoS policies that a DataWriter<T> supports
- class **Publisher**

  A publisher is the object responsible for the actual dissemination of publications.
- class **PublisherQos**

  *QoS policies supported by a **Publisher** (p. 884).*
- struct **SuspendedPublication**

  *A disposable object returned when a publication is temporarily suspended with **Publisher.SuspendPublications** (p. 889) and whose **Dispose** (p. 1123) method resumes it.*
- class **WriteParams**

  Additional parameters for the DataWriter<T> operations that write data or dispose, register or unregister an instance.

Functions

- delegate void **LivelinessLostEventHandler** (**AnyDataWriter** writer, **LivelinessLostStatus** status)

  Delegate type of the handler for the StatusMask.LivelinessLost status.
- delegate void **OfferedIncompatibleQosEventHandler** (**AnyDataWriter** writer, **OfferedIncompatibleQos↩ Status** status)

  Delegate type of the handler for the StatusMask.OfferedIncompatibleQos status.
- delegate void **OfferedDeadlineMissedEventHandler** (**AnyDataWriter** writer, **OfferedDeadlineMissedStatus** status)

  Delegate type of the handler for the StatusMask.OfferedDeadlineMissed status.
- delegate void **PublicationMatchedEventHandler** (**AnyDataWriter** writer, **PublicationMatchedStatus** status)

  Delegate type of the handler for the StatusMask.PublicationMatched status.

- delegate void **ReliableReaderActivityChangedEventHandler** (**AnyDataWriter** writer, **ReliableReader↩ ActivityChangedStatus** status)

  Delegate type of the handler for the StatusMask.ReliableReaderActivityChanged status.
- delegate void **ReliableWriterCacheChangedEventHandler** (**AnyDataWriter** writer, **ReliableWriterCache↩ ChangedStatus** status)

  Delegate type of the handler for the StatusMask.ReliableWriterCacheChanged status.
- delegate void **ServiceRequestAcceptedEventHandler** (**AnyDataWriter** writer, **ServiceRequestAccepted↩ Status** status)

  Delegate type of the handler for the StatusMask.ServiceRequestAccepted status.
- delegate void **ApplicationAcknowledgementReceivedEventHandler** (**AnyDataWriter** writer, **Acknowledgment↩ Info** info)

  Delegate type of the handler for the StatusMask.DataWriterApplicationAcknowledgementReceived status.
- delegate void **InstanceReplacedEventHandler** (**AnyDataWriter** writer, **InstanceHandle** handle)

  Delegate type of the handler for the StatusMask.DataWriterInstanceReplaced status.
- delegate void **SampleRemovedEventHandler** (**AnyDataWriter** writer, **Cookie** cookie)

  Delegate type of the handler for the StatusMask.DataWriterSampleRemoved status.

8.19.1 Detailed Description

Contains the classes to support publishing topics.

8.19.2 Function Documentation

8.19.2.1 LivelinessLostEventHandler()

```
delegate void Rti.Dds.Publication.LivelinessLostEventHandler (
              AnyDataWriter writer,
              LivelinessLostStatus status )
```

Delegate type of the handler for the StatusMask.LivelinessLost status.

8.19.2.2 OfferedIncompatibleQosEventHandler()

```
delegate void Rti.Dds.Publication.OfferedIncompatibleQosEventHandler (
              AnyDataWriter writer,
              OfferedIncompatibleQosStatus status )
```

Delegate type of the handler for the StatusMask.OfferedIncompatibleQos status.

8.19.2.3 OfferedDeadlineMissedEventHandler()

```
delegate void Rti.Dds.Publication.OfferedDeadlineMissedEventHandler (
              AnyDataWriter writer,
              OfferedDeadlineMissedStatus status )
```

Delegate type of the handler for the StatusMask.OfferedDeadlineMissed status.

8.19.2.4 PublicationMatchedEventHandler()

```
delegate void Rti.Dds.Publication.PublicationMatchedEventHandler (
              AnyDataWriter writer,
              PublicationMatchedStatus status )
```

Delegate type of the handler for the StatusMask.PublicationMatched status.

8.19.2.5 ReliableReaderActivityChangedEventHandler()

```
delegate void Rti.Dds.Publication.ReliableReaderActivityChangedEventHandler (
              AnyDataWriter writer,
              ReliableReaderActivityChangedStatus status )
```

Delegate type of the handler for the StatusMask.ReliableReaderActivityChanged status.

8.19.2.6 ReliableWriterCacheChangedEventHandler()

```
delegate void Rti.Dds.Publication.ReliableWriterCacheChangedEventHandler (
              AnyDataWriter writer,
              ReliableWriterCacheChangedStatus status )
```

Delegate type of the handler for the StatusMask.ReliableWriterCacheChanged status.

8.19.2.7 ServiceRequestAcceptedEventHandler()

```
delegate void Rti.Dds.Publication.ServiceRequestAcceptedEventHandler (
              AnyDataWriter writer,
              ServiceRequestAcceptedStatus status )
```

Delegate type of the handler for the StatusMask.ServiceRequestAccepted status.

8.19.2.8 ApplicationAcknowledgementReceivedEventHandler()

```
delegate void Rti.Dds.Publication.ApplicationAcknowledgementReceivedEventHandler (
              AnyDataWriter writer,
              AcknowledgmentInfo info )
```

Delegate type of the handler for the StatusMask.DataWriterApplicationAcknowledgementReceived status.

8.19.2.9 InstanceReplacedEventHandler()

```
delegate void Rti.Dds.Publication.InstanceReplacedEventHandler (
              AnyDataWriter writer,
              InstanceHandle handle )
```

Delegate type of the handler for the StatusMask.DataWriterInstanceReplaced status.

8.19.2.10 SampleRemovedEventHandler()

```
delegate void Rti.Dds.Publication.SampleRemovedEventHandler (
              AnyDataWriter writer,
              Cookie cookie )
```

Delegate type of the handler for the StatusMask.DataWriterSampleRemoved status.

8.20 Rti.Dds.Subscription Namespace Reference

Contains the classes to support subscribing to topics.

Data Structures

- class **AckResponseData**

  Data payload associated with an application-level acknowledgment.
- class **AnyDataReader**

  The base of a typed DataReader<T>. Provides type-independent methods and properties.
- struct **CoherentAccess**

  *A disposable object returned when a coherent access begins with **Subscriber.BeginAccess** (p. 1097) and whose **Dispose** (p. 217) method ends it.*
- class **DataReader**

  *Allows the application to: (1) declare the data it wishes to receive (i.e. make a subscription) and (2) access the data received by the attached **Subscriber** (p. 1090).*
- class **DataReaderAsyncExtensions**

Provides extensions to DataReader<T>

- class **DataReaderQos**

  Container of the QoS policies that a DataReader<T> supports

- class **Filter**

  Defines a filter to create a Topics.ContentFilteredTopic<T>.

- class **LoanedSample**

  Contains the data and the information associated with a sample, which are only valid until their LoanedSamples<T> container is Disposed

- class **LoanedSamples**

  Provides temporary access to a collection of samples (data and info).

- class **QueryCondition**

  *A specialized **ReadCondition*** (p. *928) that allows specifying a filter on the locally available data.*

- class **ReadCondition**

  *Conditions specifically dedicated to read operations and attached to one **DataReader<T>*** (p. *929).*

- class **SampleInfo**

  *Information that accompanies each sample received by a **DataReader*** (p. *243)*

- class **SampleProcessor**

  *A **SampleProcessor*** (p. *1032) automatically takes the data from the attached readers and provides each data sample to a user-defined handler function. The **SampleProcessor*** (p. *1032) uses a configurable thread pool to wait for the data and call the handlers.*

- class **Selector**

  *Allows composing read and take operations. Selectors are returned by **DataReader<T>.Select*** (p. *245)*

- class **SelectorBase**

  *Base class for the Selector<T> and **SelectorUntyped*** (p. *1041) classes.*

- class **SelectorUntyped**

  *Allows composing read and take operations. Selectors are returned by **AnyDataReader.SelectUntyped*** (p. *156)*

- class **Subscriber**

  A subscriber is the object responsible for actually receiving data from a subscription.

- class **SubscriberQos**

  *QoS policies supported by a **Subscriber*** (p. *1090).*

- class **TopicQuery**

  Unsupported in this release

Functions

- delegate void **SubscriptionMatchedEventHandler** (**AnyDataReader** reader, **SubscriptionMatchedStatus** status)

  Delegate type of the handler for the StatusMask.SubscriptionMatched status.

- delegate void **DataAvailableEventHandler** (**AnyDataReader** reader)

  Delegate type of the handler for the StatusMask.DataAvailable status.

- delegate void **LivelinessChangedEventHandler** (**AnyDataReader** reader, **LivelinessChangedStatus** status)

  Delegate type of the handler for the StatusMask.LivelinessChanged status.

- delegate void **RequestedDeadlineMissedEventHandler** (**AnyDataReader** reader, **RequestedDeadline↩ MissedStatus** status)

  Delegate type of the handler for the StatusMask.RequestedDeadlineMissed status.

- delegate void **RequestedIncompatibleQosEventHandler** (**AnyDataReader** reader, **Requested↩ IncompatibleQosStatus** status)

Delegate type of the handler for the StatusMask.RequestedIncompatibleQos status.

- delegate void **SampleLostEventHandler** (**AnyDataReader** reader, **SampleLostStatus** status)

  Delegate type of the handler for the StatusMask.SampleLost status.
- delegate void **SampleRejectedEventHandler** (**AnyDataReader** reader, **SampleRejectedStatus** status)

  Delegate type of the handler for the StatusMask.SampleRejected status.
- delegate void **DataOnReadersEventHandler** (**Subscriber** reader)

  Delegate type of the handler for the StatusMask.DataOnReaders status.

8.20.1 Detailed Description

Contains the classes to support subscribing to topics.

8.20.2 Function Documentation

8.20.2.1 SubscriptionMatchedEventHandler()

```
delegate void Rti.Dds.Subscription.SubscriptionMatchedEventHandler (
              AnyDataReader reader,
              SubscriptionMatchedStatus status )
```

Delegate type of the handler for the StatusMask.SubscriptionMatched status.

The full documentation is available in the C API: DDS_DataReaderListener_on_subscription_↩matched

8.20.2.2 DataAvailableEventHandler()

```
delegate void Rti.Dds.Subscription.DataAvailableEventHandler (
              AnyDataReader reader )
```

Delegate type of the handler for the StatusMask.DataAvailable status.

*The full documentation is available in the C API:*DDS_DataReaderListener_on_data_available

8.20.2.3 LivelinessChangedEventHandler()

```
delegate void Rti.Dds.Subscription.LivelinessChangedEventHandler (
              AnyDataReader reader,
              LivelinessChangedStatus status )
```

Delegate type of the handler for the StatusMask.LivelinessChanged status.

*The full documentation is available in the C API:*DDS_DataReaderListener_on_liveliness_changed

8.20.2.4 RequestedDeadlineMissedEventHandler()

```
delegate void Rti.Dds.Subscription.RequestedDeadlineMissedEventHandler (
            AnyDataReader reader,
            RequestedDeadlineMissedStatus status )
```

Delegate type of the handler for the StatusMask.RequestedDeadlineMissed status.

The full documentation is available in the C API: DDS_DataReaderListener_on_requested_↩deadline_missed

8.20.2.5 RequestedIncompatibleQosEventHandler()

```
delegate void Rti.Dds.Subscription.RequestedIncompatibleQosEventHandler (
            AnyDataReader reader,
            RequestedIncompatibleQosStatus status )
```

Delegate type of the handler for the StatusMask.RequestedIncompatibleQos status.

The full documentation is available in the C API: DDS_DataReaderListener_on_requested_↩incompatible_qos

8.20.2.6 SampleLostEventHandler()

```
delegate void Rti.Dds.Subscription.SampleLostEventHandler (
            AnyDataReader reader,
            SampleLostStatus status )
```

Delegate type of the handler for the StatusMask.SampleLost status.

*The full documentation is available in the C API:*DDS_DataReaderListener_on_sample_lost

8.20.2.7 SampleRejectedEventHandler()

```
delegate void Rti.Dds.Subscription.SampleRejectedEventHandler (
            AnyDataReader reader,
            SampleRejectedStatus status )
```

Delegate type of the handler for the StatusMask.SampleRejected status.

*The full documentation is available in the C API:*DDS_DataReaderListener_on_sample_rejected

8.20.2.8 DataOnReadersEventHandler()

```
delegate void Rti.Dds.Subscription.DataOnReadersEventHandler (
            Subscriber reader )
```

Delegate type of the handler for the StatusMask.DataOnReaders status.

*The full documentation is available in the C API:*DDS_SubscriberListener_on_data_on_readers

8.21 Rti.Dds.Topics Namespace Reference

Contains classes for defining topics.

Data Structures

- class **AnyContentFilteredTopic**

  The abstract base of a typed ContentFilteredTopic<T>. Provides type-independent methods and properties.
- struct **BuiltinTopicKey**

  The key type of the built-in topic types.
- class **ContentFilteredTopic**

  *Specialization of **ITopicDescription*** (p. *681) that allows for content-based subscriptions.*
- interface **IAnyTopic**

  The base of a typed Topic<T>. Provides type-independent methods and properties.
- interface **ISerializer**

  Allows serializing and deserializing IDL types as byte buffers
- interface **ITopicDescription**

  Common interface for Rti.Dds.Topics.Topic<T> and Rti.Dds.Topics.ContentFilteredTopic<T>
- interface **ITypePlugin**

  For internal use only
- interface **ITypeSupport**

  Base interface that provides support operations for IDL-generated types
- class **ParticipantBuiltinTopicData**

  *Entry created when a **Domain.DomainParticipant*** (p. *451) is discovered.*
- class **PrintFormatProperty**

  A collection of attributes used to configure how data samples will be formatted when converted to a string.
- class **PublicationBuiltinTopicData**

  *Entry created when a Publication.DataWriter<T> is discovered in association with its **Publication.Publisher*** (p. *884).*
- class **SerializerExtensions**

  Provides additional operations for ISerializer<T>
- class **SubscriptionBuiltinTopicData**

  *Entry created when a Subscription.DataReader<T> is discovered in association with its **Subscription.Subscriber*** (p. *1090).*
- class **Topic**

  The most basic description of the data to be published and subscribed.
- class **TopicBuiltinTopicData**

  Entry created when a Topics.Topic<T> object is discovered.
- class **TopicQos**

  QoS policies supported by a Topic<T>.
- class **TypeSupport**

  *Base class for IDL-generated type support classes. It allows getting the **DynamicType*** (p. *1228) that describes the type* `T`.
- class **TypeSupportHelper**

  *Provides static functions to reflectively find the **TypeSupport*** (p. *1224) class for a given IDL type.*

Enumerations

- enum **PrintFormatKind** {
  Default = DDS_PrintFormatKind.DDS_DEFAULT_PRINT_FORMAT ,
  Xml = DDS_PrintFormatKind.DDS_XML_PRINT_FORMAT ,
  Json = DDS_PrintFormatKind.DDS_JSON_PRINT_FORMAT }

  Formats available when converting data samples to string representations.

Functions

- delegate void **InconsistentTopicEventHandler** (**IAnyTopic** topic, **InconsistentTopicStatus** status)

  Delegate type of the handler for the StatusMask.InconsistentTopic status.

8.21.1 Detailed Description

Contains classes for defining topics.

8.21.2 Enumeration Type Documentation

8.21.2.1 PrintFormatKind

```
enum  Rti.Dds.Topics.PrintFormatKind
```

Formats available when converting data samples to string representations.

Enumerator

Default	Print in a human-readable format (specific to RTI Connext)
Xml	Print in XML format
Json	Print in JSON format

8.21.3 Function Documentation

8.21.3.1 InconsistentTopicEventHandler()

```
delegate void Rti.Dds.Topics.InconsistentTopicEventHandler (
              IAnyTopic topic,
              InconsistentTopicStatus status )
```

Delegate type of the handler for the StatusMask.InconsistentTopic status.

The full documentation is available in the C API: `DDS_DataWriterListener_on_publication_matched`

8.22 Rti.RequestReply Namespace Reference

Support for the request-reply communication pattern on top of RTI Connext.

Data Structures

- class **DomainParticipantRequestReplyExtensions**

  *Provides Request-Reply extensions to **Rti.Dds.Domain.DomainParticipant** (p. 451).*
- class **Replier**

  Allows receiving requests and sending replies.
- class **ReplierBuilder**

  *A builder that allows configuring and creating a new **Replier** (p. 951). It can be retrieved via `participant.BuildReplier<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequestReplyExtensions** (p. 509)).*
- class **Requester**

  Allows sending requests and receiving replies.
- class **RequesterBuilder**

  *A builder that allows configuring and creating a new **Requester** (p. 971). It can be retrieved via `participant.BuildRequester<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequestReplyExtensions** (p. 509)).*
- class **SampleFlags**

  A set of flags that can be associated with a sample.
- class **SimpleReplier**

  *A simplified version of **Replier** (p. 951) that can be used to reply to incoming requests on an individual basis.*
- class **SimpleReplierBuilder**

  *A builder that allows configuring and creating a new **SimpleReplier** (p. 1061). It can be retrieved via `participant.BuildSimpleReplier<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequestReplyExtensions** (p. 509)).*

8.22.1 Detailed Description

Support for the request-reply communication pattern on top of RTI Connext.

There are two basic entities that enable this pattern:

- A **Requester** (p. 971) publishes a request topic and subscribes to a reply topic.
- A **Replier** (p. 951) subscribes to the request topic and publishes the reply topic.

You can find more information about this pattern in the "Request-Reply and RPC Communication Patterns" part of the `User's Manual`. See also **Request-Reply Examples** (p. 55).

8.23 Rti.Types Namespace Reference

Support for topic-types.

Namespaces

- namespace **Builtin**

  Contains simple pre-defined types that can be directly used to create a Rti.Dds.Topics.Topic<T>.
- namespace **Dynamic**

  Contains support for the dynamic definition and manipulation of topic-types.

Data Structures

- struct **LongDouble**

  IDL 128-bit floating-point type.
- struct **Octet**

  A special template type to represent an IDL octet (opaque byte).
- class **Sequence**

  IDL sequences map to this type.

8.23.1 Detailed Description

Support for topic-types.

8.24 Rti.Types.Builtin Namespace Reference

Contains simple pre-defined types that can be directly used to create a Rti.Dds.Topics.Topic<T>.

Data Structures

- class **KeyedOctetsTopicType**

  A keyed topic-type containing a string (the key) and a sequence of bytes. This type can be used to instantiate a Rti.Dds.↩ Topics.Topic<T>.
- class **KeyedOctetsTopicTypeSupport**

  *The type support for **KeyedOctetsTopicType** (p. 687).*
- class **KeyedStringTopicType**

  An keyed topic-type containing two strings: a key and a value. This type can be used to instantiate a Rti.Dds.Topics.↩ Topic<T>.
- class **KeyedStringTopicTypeSupport**

  *The type support for **KeyedStringTopicType** (p. 691).*
- class **OctetsTopicType**

  An un-keyed topic-type consisting of a sequence of bytes. This type can be used to instantiate a Dds.Topics.Topic<T>.
- class **StringTopicType**

  An un-keyed topic-type containing a single string. This type can be used to instantiate a Dds.Topics.Topic<T>.
- class **StringTopicTypeSupport**

  *The type support for **StringTopicType** (p. 1072).*

8.24.1 Detailed Description

Contains simple pre-defined types that can be directly used to create a Rti.Dds.Topics.Topic<T>.

8.25 Rti.Types.Builtin.Implementation Namespace Reference

8.26 Rti.Types.Dynamic Namespace Reference

Contains support for the dynamic definition and manipulation of topic-types.

Data Structures

- class **AliasType**

  Represents an IDL alias type (typedef)
- class **AnnotationParameterValue**

  Represents the value of an Annotation.
- class **Annotations**

  Sets of annotated properties that can be applied to types and their members.
- class **ArrayType**

  Represents an IDL array.
- class **DynamicData**

  A data sample of any complex data type, which can be inspected and manipulated reflectively.
- struct **DynamicDataInfo**

  *A descriptor for a **DynamicData** (p. 564) object.*
- class **DynamicDataProperty**

  *A collection of attributes used to optionally configure a **DynamicData** (p. 564) object in its constructor.*
- class **DynamicType**

  *The definition of a data type, which can be used to inspect DDS types, and to dynamically create new types and **DynamicData** (p. 564) samples.*
- class **DynamicTypeFactory**

  A factory for creating DynamicTypes.
- class **EnumBuilder**

  *Allows creating a new **EnumType** (p. 615) via **DynamicTypeFactory.BuildEnum()** (p. 589).*
- class **EnumMember**

  *Represents an enumerator in an **EnumType** (p. 615).*
- class **EnumType**

  Represents an IDL enum.
- struct **LoanedDynamicData**

  *Gives temporary access to a member of another **DynamicData** (p. 564) object.*
- struct **MemberInfo**

  A descriptor for a field of a dynamically defined data type.
- class **PrimitiveType**

  *Represents an IDL primitive type. Use **DynamicTypeFactory.GetPrimitiveType<T>** (p. 587).*
- class **SequenceType**

Represents an IDL sequence.

- class **StringType**

  Represents an IDL string.
- class **StructBuilder**

  *Allows creating a new **StructType** (p. 1086) via **DynamicTypeFactory.BuildStruct()** (p. 588).*
- class **StructMember**

  *Represents a data member in a **StructType** (p. 1086).*
- class **StructType**

  Represents an IDL struct.
- class **TypeSerializationProperty**

  Properties that govern how data of a certain type will be serialized on the network.
- class **UnionBuilder**

  *Allows creating a new **UnionType** (p. 1239) via **DynamicTypeFactory.BuildUnion()** (p. 588).*
- class **UnionMember**

  *Represents a union member in a **UnionType** (p. 1239).*
- class **UnionType**

  Represents an IDL union.
- class **WideStringType**

  Represents an IDL wstring.

8.26.1 Detailed Description

Contains support for the dynamic definition and manipulation of topic-types.

8.27 Rti.Utility Namespace Reference

Contains general-purpose utilities

Namespaces

- namespace **EnumerableExtensions**

  For internal use only.

Data Structures

- class **AllowNullAttribute**

  Indicates that a method or property accepts null as a valid input (elements without this attribute don't accept null inputs)
- class **DiscoverySnapshot**

  ***Utility** (p. 123) that takes discovery snapshot for DomainParticipant, DataWriter and DataReader entities.*
- class **HeapMonitor**

  ***Utility** (p. 123) that tracks native heap memory usage by RTI Connext DDS*
- class **MaybeNullAttribute**

  Indicates that a method or property may return a null value (elements without this annotation never return null)
- class **NetworkCapture**

  Allows capturing the network traffic that one or more DomainParticipants send or receive into a pcap file.
- class **NetworkCaptureParams**

  *Configures the options of a **NetworkCapture** (p. 808).*

8.27.1 Detailed Description

Contains general-purpose utilities

8.28 Rti.Utility.EnumerableExtensions Namespace Reference

For internal use only.

8.28.1 Detailed Description

For internal use only.

8.29 Snippets Namespace Reference

Chapter 9

Data Structure Documentation

9.1 Rti.Dds.Publication.AcknowledgmentInfo Class Reference

Information about an application-acknowledged sample.

Inherits IEquatable< AcknowledgmentInfo >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code.
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**AcknowledgmentInfo** other)

  Compares for equality.

Properties

- **InstanceHandle SubscriptionHandle** `[get]`

  Subscription (p. *114) handle of the acknowledging Subscription.DataReader<T>.*
- **SampleIdentity SampleIdentity** `[get]`

  Identity of the sample being acknowledged.
- **Cookie Cookie** `[get]`

  Cookie of the acknowledged sample.
- bool **ValidResponseData** `[get]`

  Flag indicating validity of the user response data in the acknowledgment.
- **AckResponseData ResponseData** `[get]`

  User data payload of application-level acknowledgment message.

9.1.1 Detailed Description

Information about an application-acknowledged sample.

The full documentation is available in the C API: `DDSAcknowledgmentInfo_subscription_handle`

9.1.2 Member Function Documentation

9.1.2.1 GetHashCode()

```
override int Rti.Dds.Publication.AcknowledgmentInfo.GetHashCode ( )  [inline]
```

Gets the hash code.

9.1.2.2 Equals() [1/2]

```
override bool Rti.Dds.Publication.AcknowledgmentInfo.Equals (
            object other )
```

Compares for equality.

9.1.2.3 Equals() [2/2]

```
bool Rti.Dds.Publication.AcknowledgmentInfo.Equals (
             AcknowledgmentInfo other )  [inline]
```

Compares for equality.

9.1.3 Property Documentation

9.1.3.1 SubscriptionHandle

```
InstanceHandle Rti.Dds.Publication.AcknowledgmentInfo.SubscriptionHandle  [get]
```

Subscription (p. 114) handle of the acknowledging Subscription.DataReader<T>.

The full documentation is available in the C API: `DDSAcknowledgmentInfo_subscription_handle`

9.1.3.2 SampleIdentity

SampleIdentity Rti.Dds.Publication.AcknowledgmentInfo.SampleIdentity [get]

Identity of the sample being acknowledged.

The full documentation is available in the C API: DDSAcknowledgmentInfo_sample_identity

9.1.3.3 Cookie

Cookie Rti.Dds.Publication.AcknowledgmentInfo.Cookie [get]

Cookie of the acknowledged sample.

The full documentation is available in the C API: DDSAcknowledgmentInfo_cookie

9.1.3.4 ValidResponseData

bool Rti.Dds.Publication.AcknowledgmentInfo.ValidResponseData [get]

Flag indicating validity of the user response data in the acknowledgment.

The full documentation is available in the C API: DDSAcknowledgmentInfo_valid_response_data

9.1.3.5 ResponseData

AckResponseData Rti.Dds.Publication.AcknowledgmentInfo.ResponseData [get]

User data payload of application-level acknowledgment message.

The full documentation is available in the C API: DDSAcknowledgmentInfo_response_data

9.2 Rti.Dds.Subscription.AckResponseData Class Reference

Data payload associated with an application-level acknowledgment.

Inherits IEquatable< AckResponseData >.

Public Member Functions

- **AckResponseData** (IEnumerable< byte > value)

  *Creates a new **AckResponseData** (p. 127) instance with the bytes inside a container.*
- **AckResponseData** (ImmutableList< byte > value)

  *Creates an **AckResponseData** (p. 127) object from a list of bytes.*
- **AckResponseData With** (Action< ImmutableList< byte >.Builder > build)

  *Creates a new **AckResponseData** (p. 127) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code.
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**AckResponseData** other)

  Compares for equality.

Properties

- ImmutableList< byte > **Value** `[get]`

  A sequence of bytes.
- static **AckResponseData Empty** `[get]`

  *Creates a new empty **AckResponseData** (p. 127) instance.*

9.2.1 Detailed Description

Data payload associated with an application-level acknowledgment.

The full documentation is available in the C API: `DDS_AckResponseData_t`

9.2.2 Constructor & Destructor Documentation

9.2.2.1 AckResponseData() [1/2]

```
Rti.Dds.Subscription.AckResponseData.AckResponseData (
            IEnumerable< byte > value )  [inline]
```

Creates a new **AckResponseData** (p. 127) instance with the bytes inside a container.

9.2.2.2 AckResponseData() [2/2]

```
Rti.Dds.Subscription.AckResponseData.AckResponseData (
            ImmutableList< byte > value )
```

Creates an **AckResponseData** (p. 127) object from a list of bytes.

9.2.3 Member Function Documentation

9.2.3.1 With()

```
AckResponseData Rti.Dds.Subscription.AckResponseData.With (
            Action< ImmutableList< byte >.Builder > build )  [inline]
```

Creates a new **AckResponseData** (p. 127) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable list with the current values of this object's **Value** (p. 130).

Returns

A new **AckResponseData** (p. 127) with the changes applied by the Action

9.2.3.2 GetHashCode()

```
override int Rti.Dds.Subscription.AckResponseData.GetHashCode ( )  [inline]
```

Gets the hash code.

9.2.3.3 Equals() [1/2]

```
override bool Rti.Dds.Subscription.AckResponseData.Equals (
            object other )
```

Compares for equality.

9.2.3.4 Equals() [2/2]

```
bool Rti.Dds.Subscription.AckResponseData.Equals (
            AckResponseData other )  [inline]
```

Compares for equality.

9.2.4 Property Documentation

9.2.4.1 Value

```
ImmutableList<byte> Rti.Dds.Subscription.AckResponseData.Value  [get]
```

A sequence of bytes.

The full documentation is available in the C API: `DDS_AckResponseData_t_value`

9.2.4.2 Empty

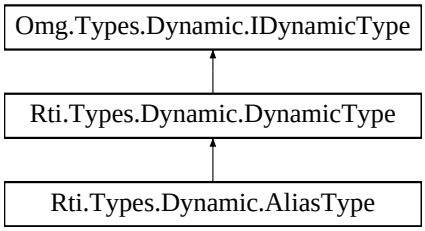
```
AckResponseData Rti.Dds.Subscription.AckResponseData.Empty  [static], [get]
```

Creates a new empty **AckResponseData** (p. 127) instance.

9.3 Rti.Types.Dynamic.AliasType Class Reference

Represents an IDL alias type (typedef)

Inheritance diagram for Rti.Types.Dynamic.AliasType:



Public Member Functions

- override int **GetHashCode** ()

  A simple hash code function.

Properties

- bool **IsExternal** [get]

  Whether the aliased type is marked @external
- **IDynamicType RelatedType** [get]

  Gets the aliased type
- **Annotations Annotations** [get]

  Optional values for the annotated properties of this type.

9.3.1 Detailed Description

Represents an IDL alias type (typedef)

9.3.2 Member Function Documentation

9.3.2.1 GetHashCode()

```
override int Rti.Types.Dynamic.AliasType.GetHashCode ( )  [inline]
```

A simple hash code function.

9.3.3 Property Documentation

9.3.3.1 IsExternal

```
bool Rti.Types.Dynamic.AliasType.IsExternal  [get]
```

Whether the aliased type is marked @external

9.3.3.2 RelatedType

```
IDynamicType Rti.Types.Dynamic.AliasType.RelatedType  [get]
```

Gets the aliased type

9.3.3.3 Annotations

Annotations Rti.Types.Dynamic.AliasType.Annotations [get]

Optional values for the annotated properties of this type.

9.4 Rti.Dds.Core.Policy.AllocationSettings Class Reference

Configures the allocation policy of a resource.

Inherits IEquatable< AllocationSettings >.

Public Member Functions

- **AllocationSettings** (int initial= **Automatic**, int max= **Automatic**, int incremental= **Automatic**)

  *Creates a new **AllocationSettings** (p. 132)*
- **AllocationSettings With** (Action< **AllocationSettingsBuilder** > build)

  *Creates a new **AllocationSettings** (p. 132) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Gets the hash code.
- bool **Equals** (**AllocationSettings** other)

  Compares for equality.

Static Public Attributes

- const int **Unlimited** = LengthUnlimited.Value

  *Special value for **MaxCount** (p. 135) indicating no upper limit.*
- const int **Automatic** = **Omg.Dds.Core.LengthAuto.Value**

  *Special value for **InitialCount** (p. 135), **MaxCount** (p. 135), or **IncrementalCount** (p. 135) indicating that the actual value will be automatically determined.*

Properties

- int **InitialCount** [get]

  The initial count of resources.
- int **MaxCount** [get]

  The maximum count of resources.
- int **IncrementalCount** [get]

  The incremental count of resources.
- static **AllocationSettings Default** = new **AllocationSettings**() [get]

  *Singleton containing the default value of a **AllocationSettings** (p. 132)*

9.4.1 Detailed Description

Configures the allocation policy of a resource.

9.4.2 Constructor & Destructor Documentation

9.4.2.1 AllocationSettings()

```
Rti.Dds.Core.Policy.AllocationSettings.AllocationSettings (
            int initial =  Automatic,
            int max =  Automatic,
            int incremental =  Automatic )  [inline]
```

Creates a new **AllocationSettings** (p. 132)

Parameters

initial	The value for **InitialCount** (p. 135)
max	The value for **MaxCount** (p. 135)
incremental	The value for **IncrementalCount** (p. 135)

9.4.3 Member Function Documentation

9.4.3.1 With()

```
AllocationSettings Rti.Dds.Core.Policy.AllocationSettings.With (
            Action< AllocationSettingsBuilder > build )  [inline]
```

Creates a new **AllocationSettings** (p. 132) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **AllocationSettings** (p. 132).

Returns

A new **AllocationSettings** (p. 132) with the changes applied by the Action

9.4.3.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.AllocationSettings.Equals (
            object other )
```

Compares for equality.

9.4.3.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.AllocationSettings.GetHashCode ( )  [inline]
```

Gets the hash code.

9.4.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.AllocationSettings.Equals (
             AllocationSettings other )  [inline]
```

Compares for equality.

9.4.4 Field Documentation

9.4.4.1 Unlimited

```
const int Rti.Dds.Core.Policy.AllocationSettings.Unlimited = LengthUnlimited.Value  [static]
```

Special value for **MaxCount** (p. 135) indicating no upper limit.

9.4.4.2 Automatic

```
const int Rti.Dds.Core.Policy.AllocationSettings.Automatic =  Omg.Dds.Core.LengthAuto.Value  [static]
```

Special value for **InitialCount** (p. 135), **MaxCount** (p. 135), or **IncrementalCount** (p. 135) indicating that the actual value will be automatically determined.

9.4.5 Property Documentation

9.4.5.1 InitialCount

```
int Rti.Dds.Core.Policy.AllocationSettings.InitialCount  [get]
```

The initial count of resources.

The full documentation is available in the C API: `DDS_AllocationSettings_t_initial_count`

9.4.5.2 MaxCount

```
int Rti.Dds.Core.Policy.AllocationSettings.MaxCount  [get]
```

The maximum count of resources.

The full documentation is available in the C API: `DDS_AllocationSettings_t_max_count`

9.4.5.3 IncrementalCount

```
int Rti.Dds.Core.Policy.AllocationSettings.IncrementalCount  [get]
```

The incremental count of resources.

The full documentation is available in the C API: `DDS_AllocationSettings_t_incremental_count`

9.4.5.4 Default

```
AllocationSettings Rti.Dds.Core.Policy.AllocationSettings.Default = new AllocationSettings()
[static], [get]
```

Singleton containing the default value of a **AllocationSettings** (p. 132)

9.5 Rti.Dds.Core.Policy.AllocationSettingsBuilder Class Reference

A modifiable type used to create an immutable **AllocationSettings** (p. 132)

Public Member Functions

- **AllocationSettingsBuilder** (**AllocationSettings** data)

  Creates a builder with the values of an existing immutable instance
- **AllocationSettings Build** ()

  *Creates a new **AllocationSettings** (p. 132) immutable object from this one.*

Properties

- int **InitialCount** `[get, set]`

  Gets the value of InitialCount
- int **MaxCount** `[get, set]`

  Gets the value of MaxCount
- int **IncrementalCount** `[get, set]`

  Gets the value of IncrementalCount

9.5.1 Detailed Description

A modifiable type used to create an immutable **AllocationSettings** (p. 132)

9.5.2 Constructor & Destructor Documentation

9.5.2.1 AllocationSettingsBuilder()

```
Rti.Dds.Core.Policy.AllocationSettingsBuilder.AllocationSettingsBuilder (
            AllocationSettings data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.5.3 Member Function Documentation

9.5.3.1 Build()

```
AllocationSettings Rti.Dds.Core.Policy.AllocationSettingsBuilder.Build ( )
```

Creates a new **AllocationSettings** (p. 132) immutable object from this one.

9.5.4 Property Documentation

9.5.4.1 InitialCount

```
int Rti.Dds.Core.Policy.AllocationSettingsBuilder.InitialCount  [get], [set]
```

Gets the value of InitialCount

The full documentation is available in the C API: `DDS_AllocationSettings_t_initial_count`

9.5.4.2 MaxCount

```
int Rti.Dds.Core.Policy.AllocationSettingsBuilder.MaxCount  [get], [set]
```

Gets the value of MaxCount

The full documentation is available in the C API: `DDS_AllocationSettings_t_max_count`

9.5.4.3 IncrementalCount

```
int Rti.Dds.Core.Policy.AllocationSettingsBuilder.IncrementalCount  [get], [set]
```

Gets the value of IncrementalCount

The full documentation is available in the C API: `DDS_AllocationSettings_t_incremental_count`

9.6 Rti.Utility.AllowNullAttribute Class Reference

Indicates that a method or property accepts null as a valid input (elements without this attribute don't accept null inputs)

Inherits Attribute.

9.6.1 Detailed Description

Indicates that a method or property accepts null as a valid input (elements without this attribute don't accept null inputs)

9.7 Rti.Types.Dynamic.AnnotationParameterValue Class Reference

Represents the value of an Annotation.

Inherits IEquatable< AnnotationParameterValue >.

Public Member Functions

- override string **ToString** ()

  Returns a string representation of the annotation value.
- **AnnotationParameterValue** ()

  *Creates a new **AnnotationParameterValue** (p. 137) with no value.*
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**AnnotationParameterValue** other)

  Compares for equality
- override int **GetHashCode** ()

  A simple hash code function.

Properties

- **TypeKind Kind** `[get]`

  The type kind of the value stored in this object.
- bool **BoolValue** `[get, set]`

  The annotation value as a TypeKind.Boolean.
- char **Char8Value** `[get, set]`

  The annotation value as a TypeKind.Char8.
- char **Char16Value** `[get, set]`

  The annotation value as a TypeKind.Char16.
- byte **OctetValue** `[get, set]`

  The annotation value as a TypeKind.Octet.
- sbyte **Int8Value** `[get, set]`

  The annotation value as a TypeKind.Int8.
- byte **Uint8Value** `[get, set]`

  The annotation value as a TypeKind.Uint8.
- short **Int16Value** `[get, set]`

  The annotation value as a TypeKind.Int16.
- ushort **Uint16Value** `[get, set]`

  The annotation value as a TypeKind.Uint16.
- int **Int32Value** `[get, set]`

  The annotation value as a TypeKind.Int32.
- uint **Uint32Value** `[get, set]`

  The annotation value as a TypeKind.Uint32.
- long **Int64Value** `[get, set]`

  The annotation value as a TypeKind.Int64.
- ulong **Uint64Value** `[get, set]`

  The annotation value as a TypeKind.Uint64.
- float **Float32Value** `[get, set]`

  The annotation value as a TypeKind.Float32.
- double **Float64Value** `[get, set]`

  The annotation value as a TypeKind.Float64.
- string **StringValue** `[get, set]`

  The annotation value as a TypeKind.String.
- string **WideStringValue** `[get, set]`

  The annotation value as a TypeKind.WideString.
- int **EnumValue** `[get, set]`

  The annotation value as a TypeKind.Enumeration.

9.7.1 Detailed Description

Represents the value of an Annotation.

9.7.2 Constructor & Destructor Documentation

9.7.2.1 AnnotationParameterValue()

```
Rti.Types.Dynamic.AnnotationParameterValue.AnnotationParameterValue ( )  [inline]
```

Creates a new **AnnotationParameterValue** (p. 137) with no value.

9.7.3 Member Function Documentation

9.7.3.1 ToString()

```
override string Rti.Types.Dynamic.AnnotationParameterValue.ToString ( )  [inline]
```

Returns a string representation of the annotation value.

9.7.3.2 Equals() [1/2]

```
override bool Rti.Types.Dynamic.AnnotationParameterValue.Equals (
            object other )
```

Compares for equality

9.7.3.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.AnnotationParameterValue.Equals (
             AnnotationParameterValue other )  [inline]
```

Compares for equality

9.7.3.4 GetHashCode()

```
override int Rti.Types.Dynamic.AnnotationParameterValue.GetHashCode ( )  [inline]
```

A simple hash code function.

9.7.4 Property Documentation

9.7.4.1 Kind

```
TypeKind Rti.Types.Dynamic.AnnotationParameterValue.Kind  [get]
```

The type kind of the value stored in this object.

9.7.4.2 BoolValue

```
bool Rti.Types.Dynamic.AnnotationParameterValue.BoolValue  [get], [set]
```

The annotation value as a TypeKind.Boolean.

9.7.4.3 Char8Value

```
char Rti.Types.Dynamic.AnnotationParameterValue.Char8Value  [get], [set]
```

The annotation value as a TypeKind.Char8.

9.7.4.4 Char16Value

```
char Rti.Types.Dynamic.AnnotationParameterValue.Char16Value  [get], [set]
```

The annotation value as a TypeKind.Char16.

9.7.4.5 OctetValue

```
byte Rti.Types.Dynamic.AnnotationParameterValue.OctetValue  [get], [set]
```

The annotation value as a TypeKind.Octet.

9.7.4.6 Int8Value

```
sbyte Rti.Types.Dynamic.AnnotationParameterValue.Int8Value  [get], [set]
```

The annotation value as a TypeKind.Int8.

9.7.4.7 Uint8Value

```
byte Rti.Types.Dynamic.AnnotationParameterValue.Uint8Value  [get], [set]
```

The annotation value as a TypeKind.Uint8.

9.7.4.8 Int16Value

```
short Rti.Types.Dynamic.AnnotationParameterValue.Int16Value  [get], [set]
```

The annotation value as a TypeKind.Int16.

9.7.4.9 Uint16Value

```
ushort Rti.Types.Dynamic.AnnotationParameterValue.Uint16Value  [get], [set]
```

The annotation value as a TypeKind.Uint16.

9.7.4.10 Int32Value

```
int Rti.Types.Dynamic.AnnotationParameterValue.Int32Value  [get], [set]
```

The annotation value as a TypeKind.Int32.

9.7.4.11 Uint32Value

```
uint Rti.Types.Dynamic.AnnotationParameterValue.Uint32Value  [get], [set]
```

The annotation value as a TypeKind.Uint32.

9.7.4.12 Int64Value

```
long Rti.Types.Dynamic.AnnotationParameterValue.Int64Value  [get], [set]
```

The annotation value as a TypeKind.Int64.

9.7.4.13 Uint64Value

```
ulong Rti.Types.Dynamic.AnnotationParameterValue.Uint64Value  [get], [set]
```

The annotation value as a TypeKind.Uint64.

9.7.4.14 Float32Value

```
float Rti.Types.Dynamic.AnnotationParameterValue.Float32Value  [get], [set]
```

The annotation value as a TypeKind.Float32.

9.7.4.15 Float64Value

```
double Rti.Types.Dynamic.AnnotationParameterValue.Float64Value  [get], [set]
```

The annotation value as a TypeKind.Float64.

9.7.4.16 StringValue

```
string Rti.Types.Dynamic.AnnotationParameterValue.StringValue  [get], [set]
```

The annotation value as a TypeKind.String.

9.7.4.17 WideStringValue

```
string Rti.Types.Dynamic.AnnotationParameterValue.WideStringValue  [get], [set]
```

The annotation value as a TypeKind.WideString.

9.7.4.18 EnumValue

```
int Rti.Types.Dynamic.AnnotationParameterValue.EnumValue  [get], [set]
```

The annotation value as a TypeKind.Enumeration.

9.8 Rti.Types.Dynamic.Annotations Class Reference

Sets of annotated properties that can be applied to types and their members.

Inherits IEquatable< Annotations >.

Public Member Functions

- **Annotations** ()

  *Creates a new **Annotations** (p. 143) with no values.*
- **Annotations** (**TypeKind** valueKind, **AnnotationParameterValue** defaultValue, **AnnotationParameterValue** minValue, **AnnotationParameterValue** maxValue, String unit)

  *Creates a new **Annotations** (p. 143) with the provided values.*
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Annotations** other)

  Compares for equality
- override int **GetHashCode** ()

  A simple hash code function.

Properties

- **TypeKind ValueKind** `[get]`

  The type of the annotation parameter values.
- **AnnotationParameterValue Default** `[get]`

  The value of the <B>[default]</B> annotation, if specified.
- **AnnotationParameterValue Max** `[get]`

  The value of the `@max` annotation, if specified.
- **AnnotationParameterValue Min** `[get]`

  The value of the `@min` annotation, if specified.
- String **Unit** `[get]`

  The value of the `@unit` annotation, if specified.

9.8.1 Detailed Description

Sets of annotated properties that can be applied to types and their members.

9.8.2 Constructor & Destructor Documentation

9.8.2.1 Annotations() [1/2]

```
Rti.Types.Dynamic.Annotations.Annotations ( )  [inline]
```

Creates a new **Annotations** (p. 143) with no values.

9.8.2.2 Annotations() [2/2]

```
Rti.Types.Dynamic.Annotations.Annotations (
              TypeKind valueKind,
              AnnotationParameterValue defaultValue,
              AnnotationParameterValue minValue,
              AnnotationParameterValue maxValue,
             String unit )  [inline]
```

Creates a new **Annotations** (p. 143) with the provided values.

9.8.3 Member Function Documentation

9.8.3.1 Equals() [1/2]

```
override bool Rti.Types.Dynamic.Annotations.Equals (
             object other )
```

Compares for equality

9.8.3.2 Equals() [2/2]

```
bool Rti.Types.Dynamic.Annotations.Equals (
            Annotations other )  [inline]
```

Compares for equality

9.8.3.3 GetHashCode()

```
override int Rti.Types.Dynamic.Annotations.GetHashCode ( )  [inline]
```

A simple hash code function.

9.8.4 Property Documentation

9.8.4.1 ValueKind

```
TypeKind Rti.Types.Dynamic.Annotations.ValueKind  [get]
```

The type of the annotation parameter values.

9.8.4.2 Default

```
AnnotationParameterValue Rti.Types.Dynamic.Annotations.Default  [get]
```

The value of the <B>[default]</B> annotation, if specified.

9.8.4.3 Max

```
AnnotationParameterValue Rti.Types.Dynamic.Annotations.Max  [get]
```

The value of the @max annotation, if specified.

9.8.4.4 Min

```
AnnotationParameterValue Rti.Types.Dynamic.Annotations.Min  [get]
```

The value of the `@min` annotation, if specified.

9.8.4.5 Unit

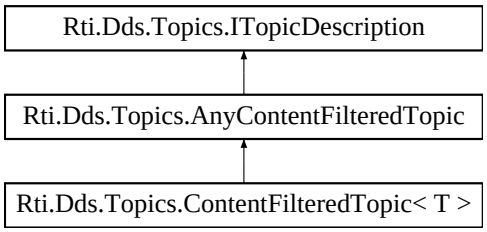
```
String Rti.Types.Dynamic.Annotations.Unit  [get]
```

The value of the `@unit` annotation, if specified.

9.9 Rti.Dds.Topics.AnyContentFilteredTopic Class Reference

The abstract base of a typed ContentFilteredTopic<T>. Provides type-independent methods and properties.

Inheritance diagram for Rti.Dds.Topics.AnyContentFilteredTopic:



Public Member Functions

- void **AppendToExpressionParameter** (int index, string value)

  Appends a string term to the specified parameter string.
- void **RemoveFromExpressionParameter** (int index, string value)

  Removes a string term from the specified parameter string.
- void **Dispose** ()

  Destroys this object and the resources it uses.

Properties

- string **Name** [get]

  Name used to create the content-filtered topic
- string **TypeName** [get]

  Name of the data type associated with this content-filtered topic
- **DomainParticipant DomainParticipant** [get]

  The DomainParticipant that contains this content-filtered topic
- string **FilterExpression** [get]

  The filter expression
- IEnumerable< string > **FilterParameters** [get, set]

  The filter parameters when the expression is parameterized.
- **Filter Filter** [get, set]

  The Filter object contains both the expression and the parameters, as well as the filter class name, if applicable.
- bool **Disposed** [get]

  *Whether the **Dispose** (p. 147) method has been called.*

9.9.1 Detailed Description

The abstract base of a typed ContentFilteredTopic<T>. Provides type-independent methods and properties.

9.9.2 Member Function Documentation

9.9.2.1 AppendToExpressionParameter()

```
void Rti.Dds.Topics.AnyContentFilteredTopic.AppendToExpressionParameter (
            int index,
            string value )
```

Appends a string term to the specified parameter string.

The full documentation is available in the C API: DDS_ContentFilteredTopic_append_to_expression_parameter

9.9.2.2 RemoveFromExpressionParameter()

```
void Rti.Dds.Topics.AnyContentFilteredTopic.RemoveFromExpressionParameter (
            int index,
            string value )
```

Removes a string term from the specified parameter string.

The full documentation is available in the C API: DDS_ContentFilteredTopic_remove_from_expression_parameter

9.9.2.3 Dispose()

```
void Rti.Dds.Topics.AnyContentFilteredTopic.Dispose ( )  [inline]
```

Destroys this object and the resources it uses.

9.9.3 Property Documentation

9.9.3.1 Name

```
string Rti.Dds.Topics.AnyContentFilteredTopic.Name  [get]
```

Name used to create the content-filtered topic

Implements **Rti.Dds.Topics.ITopicDescription** (p. 682).

9.9.3.2 TypeName

```
string Rti.Dds.Topics.AnyContentFilteredTopic.TypeName  [get]
```

Name of the data type associated with this content-filtered topic

Implements **Rti.Dds.Topics.ITopicDescription** (p. 682).

9.9.3.3 DomainParticipant

```
DomainParticipant Rti.Dds.Topics.AnyContentFilteredTopic.DomainParticipant  [get]
```

The DomainParticipant that contains this content-filtered topic

Implements **Rti.Dds.Topics.ITopicDescription** (p. 682).

9.9.3.4 FilterExpression

```
string Rti.Dds.Topics.AnyContentFilteredTopic.FilterExpression  [get]
```

The filter expression

9.9.3.5 FilterParameters

```
IEnumerable<string> Rti.Dds.Topics.AnyContentFilteredTopic.FilterParameters  [get], [set]
```

The filter parameters when the expression is parameterized.

The parameters can be modified to change what data readers associated to this topic will receive.

9.9.3.6 Filter

```
Filter Rti.Dds.Topics.AnyContentFilteredTopic.Filter  [get], [set]
```

The Filter object contains both the expression and the parameters, as well as the filter class name, if applicable.

The filter can be modified to change what data readers associated to this topic will receive.

9.9.3.7 Disposed

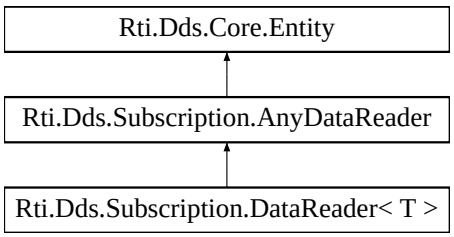
```
bool Rti.Dds.Topics.AnyContentFilteredTopic.Disposed  [get]
```

Whether the **Dispose** (p. 147) method has been called.

9.10 Rti.Dds.Subscription.AnyDataReader Class Reference

The base of a typed DataReader<T>. Provides type-independent methods and properties.

Inheritance diagram for Rti.Dds.Subscription.AnyDataReader:



Public Member Functions

- **ReadCondition CreateReadCondition** (**DataState** state)

  *Creates a **ReadCondition** (p. 928).*
- **QueryCondition CreateQueryCondition** (**Filter** filter, **DataState** state)

  *Creates a **QueryCondition** (p. 925) with a filter and a data state.*
- **QueryCondition CreateQueryCondition** (**Filter** filter)

  *Creates a **QueryCondition** (p. 925) with DataState.Any.*
- **PublicationBuiltinTopicData GetMatchedPublicationData** (in **InstanceHandle** publicationHandle)

  *Retrieves the information on a publication that is currently "associated" with this **DataReader** (p. 243).*
- IEnumerable< **PublicationBuiltinTopicData** > **GetMatchedPublicationData** ()

  *Retrieves the information on all publications that are currently "associated" with this **DataReader** (p. 243).*
- **ParticipantBuiltinTopicData GetMatchedPublicationParticipantData** (in **InstanceHandle** publication↩ Handle)

  *Retrieves the information on the discovered **Domain.DomainParticipant** (p. 451) associated with the publication that is currently matching with the DataReader<T>*
- void **AcknowledgeAll** ()

  Acknowledges all previously accessed samples.
- void **AcknowledgeAll** (**AckResponseData** responseData)

  Acknowledges all previously accessed samples with a response.
- void **AcknowledgeSample** (**SampleInfo** sampleInfo)

  Acknowledges a single sample explicitly.
- void **AcknowledgeSample** (**SampleInfo** sampleInfo, **AckResponseData** responseData)

  Acknowledges a single sample explicitly with a response.
- void **AcknowledgeSample** (**SampleIdentity** sampleIdentity)

  Acknowledges a single sample explicitly.
- void **AcknowledgeSample** (**SampleIdentity** sampleIdentity, **AckResponseData** responseData)

  Acknowledges a single sample explicitly with a response.
- **DataReaderProtocolStatus GetMatchedPublicationDataReaderProtocolStatus** (in **InstanceHandle** publicationHandle)

  *Gets the **DataReaderProtocolStatus** (p. 159) for this reader, per matched publication identified by its **InstanceHandle** (p. 598).*
- bool **IsMatchedPublicationAlive** (in **InstanceHandle** publicationHandle)

  Check if a publication currently matched with this reader is alive.
- void **WaitForHistoricalData** (in **Duration** duration)

  Waits until all "historical" data is received if the reader was configured with a non-Volatile DurabilityKind.
- abstract **LoanedSamples**< object > **ReadUntyped** ()

  *Allows calling **DataReader<T>.Read** (p. 244) in a context where the type is not known.*
- abstract **LoanedSamples**< object > **TakeUntyped** ()

  *Allows calling **DataReader<T>.Take** (p. 245) in a context where the type is not known.*
- abstract **InstanceHandle LookupInstanceUntyped** (object keyHolder)

  *Allows calling **DataReader<T>.LookupInstance** (p. 246) in a context where the type is not known.*
- abstract object **GetKeyValueUntyped** (object keyHolder, in **InstanceHandle InstanceHandle**)

  *Allows calling **DataReader<T>.GetKeyValue** (p. 247) in a context where the type is not known.*
- abstract **SelectorUntyped SelectUntyped** ()

  *Allows calling **DataReader<T>.Select** (p. 245) in a context where the type is not known.*
- override void **ResetEvents** (**StatusMask** eventsToRemove=StatusMask.All)

  Stop notifying of certain events and remove their event handlers
- void **DisposeContainedEntities** ()

  Disposes all the entities that were created by this reader.

Properties

- **DataReaderQos Qos** [get, set]

  Gets or sets the reader QoS.
- abstract **Subscriber Subscriber** [get]

  *Returns the **Subscriber** (p. 1090) to which the **DataReader** (p. 243) belongs.*
- abstract **ITopicDescription TopicDescription** [get]

  *Returns the TopicDescription associated with this **DataReader** (p. 243).*
- **SubscriptionMatchedStatus SubscriptionMatchedStatus** [get]

  Retrieve the StatusMask.SubscriptionMatched status.
- **LivelinessChangedStatus LivelinessChangedStatus** [get]

  Retrieve the StatusMask.LivelinessChanged status.
- **RequestedDeadlineMissedStatus RequestedDeadlineMissedStatus** [get]

  Retrieve the StatusMask.RequestedDeadlineMissed status.
- **RequestedIncompatibleQosStatus RequestedIncompatibleQosStatus** [get]

  Retrieve the StatusMask.RequestedIncompatibleQos status.
- **SampleLostStatus SampleLostStatus** [get]

  Retrieve the StatusMask.SampleLost status.
- **SampleRejectedStatus SampleRejectedStatus** [get]

  Retrieve the StatusMask.SampleRejected status.
- **DataReaderCacheStatus DataReaderCacheStatus** [get]

  Retrieve the StatusMask.DataReaderCache status.
- **DataReaderProtocolStatus DataReaderProtocolStatus** [get]

  Retrieve the StatusMask.DataReaderProtocol status.
- IEnumerable< **InstanceHandle** > **MatchedPublications** [get]

  *Retrieves the list of publications currently "associated" with this **DataReader** (p. 243).*
- **SubscriptionMatchedEventHandler SubscriptionMatched**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SubscriptionMatched** (p. 109) status changes*
- **DataAvailableEventHandler DataAvailable**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataAvailable** (p. 109) status changes*
- **LivelinessChangedEventHandler LivelinessChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessChanged** (p. 109) status changes*
- **RequestedDeadlineMissedEventHandler RequestedDeadlineMissed**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedDeadlineMissed** (p. 108) status changes*
- **RequestedIncompatibleQosEventHandler RequestedIncompatibleQos**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedIncompatibleQos** (p. 108) status changes*
- **SampleLostEventHandler SampleLost**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleLost** (p. 108) status changes*
- **SampleRejectedEventHandler SampleRejected**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleRejected** (p. 108) status changes*

9.10.1 Detailed Description

The base of a typed DataReader<T>. Provides type-independent methods and properties.

9.10.2 Member Function Documentation

9.10.2.1 CreateReadCondition()

```
ReadCondition Rti.Dds.Subscription.AnyDataReader.CreateReadCondition (
            DataState state )
```

Creates a **ReadCondition** (p. 928).

The full documentation is available in the C API: `DDS_DataReader_create_readcondition`

9.10.2.2 CreateQueryCondition() [1/2]

```
QueryCondition Rti.Dds.Subscription.AnyDataReader.CreateQueryCondition (
            Filter filter,
            DataState state )
```

Creates a **QueryCondition** (p. 925) with a filter and a data state.

The full documentation is available in the C API: `DDS_DataReader_create_querycondition`

9.10.2.3 CreateQueryCondition() [2/2]

```
QueryCondition Rti.Dds.Subscription.AnyDataReader.CreateQueryCondition (
            Filter filter )
```

Creates a **QueryCondition** (p. 925) with DataState.Any.

The full documentation is available in the C API: `DDS_DataReader_create_querycondition`

9.10.2.4 GetMatchedPublicationData() [1/2]

```
PublicationBuiltinTopicData Rti.Dds.Subscription.AnyDataReader.GetMatchedPublicationData (
           in  InstanceHandle publicationHandle )
```

Retrieves the information on a publication that is currently "associated" with this **DataReader** (p. 243).

The full documentation is available in the C API: `DDS_DataReader_get_matched_publication_data`

9.10.2.5 GetMatchedPublicationData() [2/2]

```
IEnumerable< PublicationBuiltinTopicData > Rti.Dds.Subscription.AnyDataReader.GetMatchedPublication↩
Data ( ) [inline]
```

Retrieves the information on all publications that are currently "associated" with this **DataReader** (p. 243).

9.10.2.6 GetMatchedPublicationParticipantData()

```
 ParticipantBuiltinTopicData Rti.Dds.Subscription.AnyDataReader.GetMatchedPublicationParticipant↩
Data (
            in  InstanceHandle publicationHandle )
```

Retrieves the information on the discovered **Domain.DomainParticipant** (p. 451) associated with the publication that is currently matching with the DataReader<T>

The full documentation is available in the C API: DDS_DataReader_get_matched_publication_↩ participant_data

9.10.2.7 AcknowledgeAll() [1/2]

```
void Rti.Dds.Subscription.AnyDataReader.AcknowledgeAll ( )
```

Acknowledges all previously accessed samples.

*The full documentation is available in the C API:*DDS_DataReader_acknowledge_all

9.10.2.8 AcknowledgeAll() [2/2]

```
void Rti.Dds.Subscription.AnyDataReader.AcknowledgeAll (
            AckResponseData responseData )
```

Acknowledges all previously accessed samples with a response.

*The full documentation is available in the C API:*DDS_DataReader_acknowledge_all_w_response

9.10.2.9 AcknowledgeSample() [1/4]

```
void Rti.Dds.Subscription.AnyDataReader.AcknowledgeSample (
            SampleInfo sampleInfo )
```

Acknowledges a single sample explicitly.

*The full documentation is available in the C API:*DDS_DataReader_acknowledge_sample

9.10.2.10 AcknowledgeSample() [2/4]

```
void Rti.Dds.Subscription.AnyDataReader.AcknowledgeSample (
              SampleInfo sampleInfo,
              AckResponseData responseData )
```

Acknowledges a single sample explicitly with a response.

The full documentation is available in the C API: DDS_DataReader_acknowledge_sample_w_response

9.10.2.11 AcknowledgeSample() [3/4]

```
void Rti.Dds.Subscription.AnyDataReader.AcknowledgeSample (
              SampleIdentity sampleIdentity )
```

Acknowledges a single sample explicitly.

The SampleIdentity from a specific LoanedSample<T> can be obtained from its **SampleInfo** (p. 1026). This method is equivalent to **AcknowledgeSample(SampleInfo)** (p. 153), but can be used with a previously stored SampleIdentity when the specific LoanedSample<T> has already been disposed.

9.10.2.12 AcknowledgeSample() [4/4]

```
void Rti.Dds.Subscription.AnyDataReader.AcknowledgeSample (
              SampleIdentity sampleIdentity,
              AckResponseData responseData )
```

Acknowledges a single sample explicitly with a response.

The SampleIdentity from a specific LoanedSample<T> can be obtained from its **SampleInfo** (p. 1026). This method is equivalent to **AcknowledgeSample(SampleInfo, AckResponseData)** (p. 153), but can be used with a previously stored SampleIdentity when the specific LoanedSample<T> has already been disposed.

9.10.2.13 GetMatchedPublicationDataReaderProtocolStatus()

```
 DataReaderProtocolStatus Rti.Dds.Subscription.AnyDataReader.GetMatchedPublicationDataReader↩
ProtocolStatus (
             in  InstanceHandle publicationHandle )
```

Gets the **DataReaderProtocolStatus** (p. 159) for this reader, per matched publication identified by its **InstanceHandle** (p. 598).

The full documentation is available in the C API: DDS_DataReader_get_matched_publication_↩ datareader_protocol_status

9.10.2.14 IsMatchedPublicationAlive()

```
bool Rti.Dds.Subscription.AnyDataReader.IsMatchedPublicationAlive (
            in  InstanceHandle publicationHandle )
```

Check if a publication currently matched with this reader is alive.

The full documentation is available in the C API: `DDS_DataReader_is_matched_publication_alive`

9.10.2.15 WaitForHistoricalData()

```
void Rti.Dds.Subscription.AnyDataReader.WaitForHistoricalData (
            in  Duration duration )
```

Waits until all "historical" data is received if the reader was configured with a non-Volatile DurabilityKind.

The full documentation is available in the C API: `DDS_DataReader_wait_for_historical_data`

9.10.2.16 ReadUntyped()

```
abstract  LoanedSamples< object > Rti.Dds.Subscription.AnyDataReader.ReadUntyped ( )  [pure virtual]
```

Allows calling **DataReader<T>.Read** (p. 244) in a context where the type is not known.

Returns

A collection equivalent to the one returned by **DataReader<T>.Read** (p. 244), but one where the declared type of the data is object, instead of a concrete T.

Implemented in **Rti.Dds.Subscription.DataReader< T >** (p. 245).

9.10.2.17 TakeUntyped()

```
abstract  LoanedSamples< object > Rti.Dds.Subscription.AnyDataReader.TakeUntyped ( )  [pure virtual]
```

Allows calling **DataReader<T>.Take** (p. 245) in a context where the type is not known.

Returns

A collection equivalent to the one returned by **DataReader<T>.Take** (p. 245), but one where the declared type of the data is object, instead of a concrete T.

Implemented in **Rti.Dds.Subscription.DataReader< T >** (p. 245).

9.10.2.18 LookupInstanceUntyped()

```
abstract  InstanceHandle Rti.Dds.Subscription.AnyDataReader.LookupInstanceUntyped (
            object keyHolder )  [pure virtual]
```

Allows calling **DataReader<T>.LookupInstance** (p. 246) in a context where the type is not known.

Returns

The **InstanceHandle** (p. 598) corresponding to the provided keyholder. The runtime type of the keyholder must match that of the actual DataReader<T> otherwise this operation throws InvalidCastException.

Implemented in **Rti.Dds.Subscription.DataReader< T >** (p. 246).

9.10.2.19 GetKeyValueUntyped()

```
abstract object Rti.Dds.Subscription.AnyDataReader.GetKeyValueUntyped (
            object keyHolder,
            in  InstanceHandle InstanceHandle )  [pure virtual]
```

Allows calling **DataReader<T>.GetKeyValue** (p. 247) in a context where the type is not known.

Returns

The key values corresponding to the provided instance handle.

9.10.2.20 SelectUntyped()

```
abstract  SelectorUntyped Rti.Dds.Subscription.AnyDataReader.SelectUntyped ( )  [pure virtual]
```

Allows calling **DataReader<T>.Select** (p. 245) in a context where the type is not known.

Returns

A Selector<T>, but one where the declared type of the data is object, instead of a concrete T.

Implemented in **Rti.Dds.Subscription.DataReader< T >** (p. 246).

9.10.2.21 ResetEvents()

```
override void Rti.Dds.Subscription.AnyDataReader.ResetEvents (
             StatusMask eventsToRemove = StatusMask.All )  [inline], [virtual]
```

Stop notifying of certain events and remove their event handlers

Parameters

eventsToRemove	Selects which events will stop receiving notifications. Use StatusMask.All to remove all event handlers.

Implements **Rti.Dds.Core.Entity** (p. 597).

9.10.2.22 DisposeContainedEntities()

```
void Rti.Dds.Subscription.AnyDataReader.DisposeContainedEntities ( )  [inline]
```

Disposes all the entities that were created by this reader.

The full documentation is available in the C API: `DDS_DataReader_delete_contained_entities`

9.10.3 Property Documentation

9.10.3.1 Qos

DataReaderQos `Rti.Dds.Subscription.AnyDataReader.Qos [get], [set]`

Gets or sets the reader QoS.

The full documentation is available in the C API: `DDS_DataReader_set_qos`

9.10.3.2 Subscriber

`abstract` **Subscriber** `Rti.Dds.Subscription.AnyDataReader.Subscriber [get]`

Returns the **Subscriber** (p. 1090) to which the **DataReader** (p. 243) belongs.

The full documentation is available in the C API: `DDS_DataReader_get_subscriber`

9.10.3.3 TopicDescription

`abstract` **ITopicDescription** `Rti.Dds.Subscription.AnyDataReader.TopicDescription [get]`

Returns the TopicDescription associated with this **DataReader** (p. 243).

The full documentation is available in the C API: `DDS_DataReader_get_topicdescription`

9.10.3.4 SubscriptionMatchedStatus

SubscriptionMatchedStatus Rti.Dds.Subscription.AnyDataReader.SubscriptionMatchedStatus [get]

Retrieve the StatusMask.SubscriptionMatched status.

The full documentation is available in the C API: DDS_DataReader_get_subscription_matched_↩ status

9.10.3.5 LivelinessChangedStatus

LivelinessChangedStatus Rti.Dds.Subscription.AnyDataReader.LivelinessChangedStatus [get]

Retrieve the StatusMask.LivelinessChanged status.

*The full documentation is available in the C API:*DDS_DataReader_get_liveliness_changed_status

9.10.3.6 RequestedDeadlineMissedStatus

RequestedDeadlineMissedStatus Rti.Dds.Subscription.AnyDataReader.RequestedDeadlineMissedStatus [get]

Retrieve the StatusMask.RequestedDeadlineMissed status.

The full documentation is available in the C API: DDS_DataReader_get_requested_deadline_↩ missed_status

9.10.3.7 RequestedIncompatibleQosStatus

RequestedIncompatibleQosStatus Rti.Dds.Subscription.AnyDataReader.RequestedIncompatibleQosStatus [get]

Retrieve the StatusMask.RequestedIncompatibleQos status.

The full documentation is available in the C API: DDS_DataReader_get_requested_incompatible_↩ qos_status

9.10.3.8 SampleLostStatus

SampleLostStatus Rti.Dds.Subscription.AnyDataReader.SampleLostStatus [get]

Retrieve the StatusMask.SampleLost status.

*The full documentation is available in the C API:*DDS_DataReader_get_sample_lost_status

9.10.3.9 SampleRejectedStatus

SampleRejectedStatus Rti.Dds.Subscription.AnyDataReader.SampleRejectedStatus [get]

Retrieve the StatusMask.SampleRejected status.

The full documentation is available in the C API: DDS_DataReader_get_sample_rejected_status

9.10.3.10 DataReaderCacheStatus

DataReaderCacheStatus Rti.Dds.Subscription.AnyDataReader.DataReaderCacheStatus [get]

Retrieve the StatusMask.DataReaderCache status.

The full documentation is available in the C API: DDS_DataReader_get_datareader_cache_status

9.10.3.11 DataReaderProtocolStatus

DataReaderProtocolStatus Rti.Dds.Subscription.AnyDataReader.DataReaderProtocolStatus [get]

Retrieve the StatusMask.DataReaderProtocol status.

The full documentation is available in the C API: DDS_DataReader_get_datareader_protocol_status

9.10.3.12 MatchedPublications

IEnumerable< **InstanceHandle**> Rti.Dds.Subscription.AnyDataReader.MatchedPublications [get]

Retrieves the list of publications currently "associated" with this **DataReader** (p. 243).

The full documentation is available in the C API: DDS_DataReader_get_matched_publications

9.10.3.13 SubscriptionMatched

SubscriptionMatchedEventHandler Rti.Dds.Subscription.AnyDataReader.SubscriptionMatched [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SubscriptionMatched** (p. 109) status changes

9.10.3.14 DataAvailable

DataAvailableEventHandler Rti.Dds.Subscription.AnyDataReader.DataAvailable [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataAvailable** (p. 109) status changes

9.10.3.15 LivelinessChanged

LivelinessChangedEventHandler Rti.Dds.Subscription.AnyDataReader.LivelinessChanged [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessChanged** (p. 109) status changes

9.10.3.16 RequestedDeadlineMissed

RequestedDeadlineMissedEventHandler Rti.Dds.Subscription.AnyDataReader.RequestedDeadlineMissed [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedDeadlineMissed** (p. 108) status changes

9.10.3.17 RequestedIncompatibleQos

RequestedIncompatibleQosEventHandler Rti.Dds.Subscription.AnyDataReader.RequestedIncompatibleQos [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedIncompatibleQos** (p. 108) status changes

9.10.3.18 SampleLost

SampleLostEventHandler Rti.Dds.Subscription.AnyDataReader.SampleLost [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleLost** (p. 108) status changes

9.10.3.19 SampleRejected

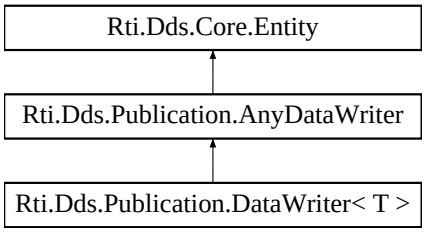
SampleRejectedEventHandler Rti.Dds.Subscription.AnyDataReader.SampleRejected [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleRejected** (p. 108) status changes

9.11 Rti.Dds.Publication.AnyDataWriter Class Reference

The base of a typed DataWriter<T>. Provides type-independent methods and properties.

Inheritance diagram for Rti.Dds.Publication.AnyDataWriter:



Public Member Functions

- abstract void **WriteUntyped** (object sample)

  *Calls **DataWriter<T>.Write(T)** (p. 338), but allows doing so in a context where T is not known.*
- abstract void **WriteUntyped** (object sample, **WriteParams** writeParams)

  *Calls **DataWriter<T>.Write(T, WriteParams)** (p. 338), but allows doing so in a context where T is not known.*
- abstract **InstanceHandle** **RegisterInstanceUntyped** (object sample)

  *Calls **DataWriter<T>.RegisterInstance(T)** (p. 339), but allows doing so in a context where T is not known.*
- abstract **InstanceHandle** **RegisterInstanceUntyped** (object sample, **WriteParams** parameters)

  *Calls **DataWriter<T>.RegisterInstance(T, WriteParams)** (p. 339), but allows doing so in a context where T is not known.*
- void **DisposeInstance** (in **InstanceHandle** instanceHandle)

  Requests the middleware to delete the instance.
- void **DisposeInstance** (**WriteParams** parameters)

  Requests the middleware to delete the instance.
- void **UnregisterInstance** (in **InstanceHandle** instanceHandle)

  *Reverses the action of **RegisterInstanceUntyped(object)** (p. 164).*
- void **UnregisterInstance** (**WriteParams** parameters)

  *Provides additional parameters to **UnregisterInstance(in InstanceHandle)** (p. 165).*
- abstract **InstanceHandle** **LookupInstanceUntyped** (object keyHolder)

  *Allows calling **DataWriter<T>.LookupInstance** (p. 340) in a context where the type is not known.*
- abstract object **GetKeyValueUntyped** (object keyHolder, in **InstanceHandle** **InstanceHandle**)

  *Allows calling **DataWriter<T>.GetKeyValue** (p. 341) in a context where the type is not known.*
- **SubscriptionBuiltinTopicData** **GetMatchedSubscriptionData** (in **InstanceHandle** subscriptionHandle)

  *Retrieves the information on a subscription that is currently "associated" with this **DataWriter** (p. 336).*
- IEnumerable< **SubscriptionBuiltinTopicData** > **GetMatchedSubscriptionData** ()

  *Retrieves the information on all subscriptions that are currently "associated" with this **DataWriter** (p. 336).*
- **ParticipantBuiltinTopicData** **GetMatchedSubscriptionParticipantData** (in **InstanceHandle** subscription↩ Handle)

  *Retrieves the information on the discovered **Domain.DomainParticipant** (p. 451) associated with the subscription that is currently matching with the DataWriter<T>*
- bool **IsMatchedSubscriptionActive** (in **InstanceHandle** subscriptionHandle)

  Check if a subscription currently matched with a DataWriter<T> is active.
- IEnumerable< **Locator** > **GetMatchedSubscriptionLocators** ()

Retrieves a list of Locator for subscriptions currently matched with the DataWriter<T>.

- void **WaitForAcknowledgments** (**Duration** maxWait)

  Blocks the calling thread until all data written by a reliable writer is acknowledged, or until the maxWait expires.
- void **WaitForAsynchronousPublishing** (**Duration** maxWait)

  Blocks the calling thread until asynchronous sending is completed.
- bool **IsSampleAppAcknowledged** (in **SampleIdentity** sampleId)

  Indicates if a sample has been acknowledged by the subscribing applications.
- void **AssertLiveliness** ()

  *This operation manually asserts the liveliness of this **DataWriter** (*p. *336)*
- **DataWriterProtocolStatus GetMatchedSubscriptionDataWriterProtocolStatus** (in **InstanceHandle** subscriptionHandle)

  *Get the protocol status for this **DataWriter** (*p. *336), per matched subscription identified by the subscriptionHandle.*
- **DataWriterProtocolStatus GetMatchedSubscriptionDataWriterProtocolStatus** (**Locator** subscription↩ Locator)

  *Get the protocol status for this **DataWriter** (*p. *336), per matched subscription identified by the locator.*
- void **Flush** ()

  Flushes the batch in progress in the context of the calling thread.
- override void **ResetEvents** (**StatusMask** eventsToRemove=StatusMask.All)

  Stop notifying of certain events and remove their event handlers

Properties

- abstract **IAnyTopic TopicUntyped** `[get]`

  *Returns the type-erased Topic<T> associated with this **DataWriter** (*p. *336).*
- **DataWriterQos Qos** `[get, set]`

  Gets or sets the writer QoS.
- abstract **Publisher Publisher** `[get]`

  *This operation returns the **Publisher** (*p. *884) to which the **DataWriter** (*p. *336) belongs.*
- IEnumerable< **InstanceHandle** > **MatchedSubscriptions** `[get]`

  *Retrieves the list of subscriptions currently "associated" with this **DataWriter** (*p. *336).*
- **LivelinessLostStatus LivelinessLostStatus** `[get]`

  Accesses the StatusMask.LivelinessLost status.
- **OfferedDeadlineMissedStatus OfferedDeadlineMissedStatus** `[get]`

  Accesses the StatusMask.PublicationMatched status.
- **OfferedIncompatibleQosStatus OfferedIncompatibleQosStatus** `[get]`

  Accesses the StatusMask.OfferedIncompatibleQos status.
- **PublicationMatchedStatus PublicationMatchedStatus** `[get]`

  Accesses the StatusMask.PublicationMatched status.
- **DataWriterProtocolStatus DataWriterProtocolStatus** `[get]`

  Retrieve the StatusMask.DataWriterProtocol status.
- **DataWriterCacheStatus DataWriterCacheStatus** `[get]`

  Retrieve the StatusMask.DataWriterCache status.
- **ReliableReaderActivityChangedStatus ReliableReaderActivityChangedStatus** `[get]`

  Retrieve the StatusMask.ReliableReaderActivityChanged status.
- **ReliableWriterCacheChangedStatus ReliableWriterCacheChangedStatus** `[get]`

  Retrieve the StatusMask.ReliableWriterCacheChanged status.
- **ServiceRequestAcceptedStatus ServiceRequestAcceptedStatus** `[get]`

Retrieve the StatusMask.ServiceRequestAccepted status.

- **LivelinessLostEventHandler LivelinessLost**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessLost** (p. 109) status changes.*
- **OfferedIncompatibleQosEventHandler OfferedIncompatibleQos**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedIncompatibleQos** (p. 108) status changes.*
- **OfferedDeadlineMissedEventHandler OfferedDeadlineMissed**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedDeadlineMissed** (p. 108) status changes.*
- **PublicationMatchedEventHandler PublicationMatched**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.PublicationMatched** (p. 109) status changes*
- **ReliableReaderActivityChangedEventHandler ReliableReaderActivityChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableReaderActivityChanged** (p. 109) status changes.*
- **ReliableWriterCacheChangedEventHandler ReliableWriterCacheChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableWriterCacheChanged** (p. 109) status changes.*
- **ServiceRequestAcceptedEventHandler ServiceRequestAccepted**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ServiceRequestAccepted** (p. 109) status changes.*
- **ApplicationAcknowledgementReceivedEventHandler ApplicationAcknowledgementReceived**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterApplicationAcknowledgementReceived** (p. 109) status changes.*
- **InstanceReplacedEventHandler InstanceReplaced**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterInstanceReplaced** (p. 109) status changes.*
- **SampleRemovedEventHandler SampleRemoved**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterSampleRemoved** (p. 110) status changes.*

9.11.1 Detailed Description

The base of a typed DataWriter<T>. Provides type-independent methods and properties.

9.11.2 Member Function Documentation

9.11.2.1 WriteUntyped() [1/2]

```
abstract void Rti.Dds.Publication.AnyDataWriter.WriteUntyped (
            object sample )  [pure virtual]
```

Calls **DataWriter<T>.Write(T)** (p. 338), but allows doing so in a context where T is not known.

Parameters

sample	The data to write. Its runtime type must be the type of the actual DataWriter<T>. Otherwise this operation throws InvalidCastException.

Implemented in **Rti.Dds.Publication.DataWriter< T >** (p. 338).

9.11.2.2 WriteUntyped() [2/2]

```
abstract void Rti.Dds.Publication.AnyDataWriter.WriteUntyped (
            object sample,
             WriteParams writeParams )  [pure virtual]
```

Calls **DataWriter<T>.Write(T, WriteParams)** (p. 338), but allows doing so in a context where T is not known.

Parameters

sample	The data to write. Its runtime type must be the type of the actual DataWriter<T>. Otherwise this operation throws InvalidCastException.
writeParams	Configures the write operation

Implemented in **Rti.Dds.Publication.DataWriter< T >** (p. 339).

9.11.2.3 RegisterInstanceUntyped() [1/2]

```
abstract  InstanceHandle Rti.Dds.Publication.AnyDataWriter.RegisterInstanceUntyped (
            object sample )  [pure virtual]
```

Calls **DataWriter<T>.RegisterInstance(T)** (p. 339), but allows doing so in a context where T is not known.

Parameters

sample	The instance to register. Its runtime type must be the type of the actual DataWriter<T>. Otherwise this operation throws InvalidCastException.

Implemented in **Rti.Dds.Publication.DataWriter< T >** (p. 339).

9.11.2.4 RegisterInstanceUntyped() [2/2]

```
abstract  InstanceHandle Rti.Dds.Publication.AnyDataWriter.RegisterInstanceUntyped (
            object sample,
             WriteParams parameters )  [pure virtual]
```

Calls **DataWriter<T>.RegisterInstance(T, WriteParams)** (p. 339), but allows doing so in a context where T is not known.

Parameters

sample	The instance to register. Its runtime type must be the type of the actual DataWriter<T>. Otherwise this operation throws InvalidCastException.
parameters	Configures the register operation

Implemented in **Rti.Dds.Publication.DataWriter< T >** (p. 340).

9.11.2.5 DisposeInstance() [1/2]

```
void Rti.Dds.Publication.AnyDataWriter.DisposeInstance (
            in  InstanceHandle instanceHandle )
```

Requests the middleware to delete the instance.

The full documentation is available in the C API: `DDSTypedDataWriter_dispose`

9.11.2.6 DisposeInstance() [2/2]

```
void Rti.Dds.Publication.AnyDataWriter.DisposeInstance (
             WriteParams parameters )
```

Requests the middleware to delete the instance.

The full documentation is available in the C API: `DDSTypedDataWriter_dispose`

9.11.2.7 UnregisterInstance() [1/2]

```
void Rti.Dds.Publication.AnyDataWriter.UnregisterInstance (
            in  InstanceHandle instanceHandle )
```

Reverses the action of **RegisterInstanceUntyped(object)** (p. 164).

The full documentation is available in the C API: `DDSTypedDataWriter_unregister_instance`

9.11.2.8 UnregisterInstance() [2/2]

```
void Rti.Dds.Publication.AnyDataWriter.UnregisterInstance (
             WriteParams parameters )
```

Provides additional parameters to **UnregisterInstance(in InstanceHandle)** (p. 165).

The full documentation is available in the C API: `DDSTypedDataWriter_unregister_instance`

9.11.2.9 LookupInstanceUntyped()

```
abstract  InstanceHandle Rti.Dds.Publication.AnyDataWriter.LookupInstanceUntyped (
            object keyHolder )  [pure virtual]
```

Allows calling **DataWriter<T>.LookupInstance** (p. 340) in a context where the type is not known.

Returns

The **InstanceHandle** (p. 598) corresponding to the provided keyholder. The runtime type of the keyholder must match that of the actual DataWriter<T> otherwise this operation throws InvalidCastException.

Implemented in **Rti.Dds.Publication.DataWriter< T >** (p. 340).

9.11.2.10 GetKeyValueUntyped()

```
abstract object Rti.Dds.Publication.AnyDataWriter.GetKeyValueUntyped (
            object keyHolder,
            in  InstanceHandle InstanceHandle )  [pure virtual]
```

Allows calling **DataWriter<T>.GetKeyValue** (p. 341) in a context where the type is not known.

Returns

The key values corresponding to the provided instance handle.

9.11.2.11 GetMatchedSubscriptionData() [1/2]

```
 SubscriptionBuiltinTopicData Rti.Dds.Publication.AnyDataWriter.GetMatchedSubscriptionData (
            in  InstanceHandle subscriptionHandle )
```

Retrieves the information on a subscription that is currently "associated" with this **DataWriter** (p. 336).

The full documentation is available in the C API: `DDS_DataWriter_get_matched_subscription_data`

9.11.2.12 GetMatchedSubscriptionData() [2/2]

```
IEnumerable<  SubscriptionBuiltinTopicData > Rti.Dds.Publication.AnyDataWriter.GetMatchedSubscription↩
Data ( )  [inline]
```

Retrieves the information on all subscriptions that are currently "associated" with this **DataWriter** (p. 336).

9.11.2.13 GetMatchedSubscriptionParticipantData()

```
 ParticipantBuiltinTopicData Rti.Dds.Publication.AnyDataWriter.GetMatchedSubscriptionParticipant↩
Data (
            in  InstanceHandle subscriptionHandle )
```

Retrieves the information on the discovered **Domain.DomainParticipant** (p. 451) associated with the subscription that is currently matching with the DataWriter<T>

The full documentation is available in the C API: DDS_DataWriter_get_matched_subscription_↩ participant_data

9.11.2.14 IsMatchedSubscriptionActive()

```
bool Rti.Dds.Publication.AnyDataWriter.IsMatchedSubscriptionActive (
            in  InstanceHandle subscriptionHandle )
```

Check if a subscription currently matched with a DataWriter<T> is active.

The full documentation is available in the C API: DDS_DataWriter_is_matched_subscription_active

9.11.2.15 GetMatchedSubscriptionLocators()

```
IEnumerable<  Locator > Rti.Dds.Publication.AnyDataWriter.GetMatchedSubscriptionLocators ( )
```

Retrieves a list of Locator for subscriptions currently matched with the DataWriter<T>.

The full documentation is available in the C API: DDS_DataWriter_get_matched_subscription_↩ locators

9.11.2.16 WaitForAcknowledgments()

```
void Rti.Dds.Publication.AnyDataWriter.WaitForAcknowledgments (
             Duration maxWait )
```

Blocks the calling thread until all data written by a reliable writer is acknowledged, or until the maxWait expires.

The full documentation is available in the C API: DDS_DataWriter_wait_for_acknowledgments

9.11.2.17 WaitForAsynchronousPublishing()

```
void Rti.Dds.Publication.AnyDataWriter.WaitForAsynchronousPublishing (
             Duration maxWait )
```

Blocks the calling thread until asynchronous sending is completed.

The full documentation is available in the C API: DDS_DataWriter_wait_for_asynchronous_↩ publishing

9.11.2.18 IsSampleAppAcknowledged()

```
bool Rti.Dds.Publication.AnyDataWriter.IsSampleAppAcknowledged (
            in  SampleIdentity sampleId )
```

Indicates if a sample has been acknowledged by the subscribing applications.

The full documentation is available in the C API: `DDS_DataWriter_is_sample_app_acknowledged`

9.11.2.19 AssertLiveliness()

```
void Rti.Dds.Publication.AnyDataWriter.AssertLiveliness ( )
```

This operation manually asserts the liveliness of this **DataWriter** (p. 336)

The full documentation is available in the C API: `DDS_DataWriter_assert_liveliness`

9.11.2.20 GetMatchedSubscriptionDataWriterProtocolStatus() [1/2]

```
 DataWriterProtocolStatus Rti.Dds.Publication.AnyDataWriter.GetMatchedSubscriptionDataWriter↩
ProtocolStatus (
            in  InstanceHandle subscriptionHandle )
```

Get the protocol status for this **DataWriter** (p. 336), per matched subscription identified by the subscriptionHandle.

The full documentation is available in the C API: `DDS_DataWriter_get_matched_subscription_↩ datawriter_protocol_status`

9.11.2.21 GetMatchedSubscriptionDataWriterProtocolStatus() [2/2]

```
 DataWriterProtocolStatus Rti.Dds.Publication.AnyDataWriter.GetMatchedSubscriptionDataWriter↩
ProtocolStatus (
            Locator subscriptionLocator )
```

Get the protocol status for this **DataWriter** (p. 336), per matched subscription identified by the locator.

The full documentation is available in the C API: `DDS_DataWriter_get_matched_subscription_↩ datawriter_protocol_status_by_locator`

9.11.2.22 Flush()

```
void Rti.Dds.Publication.AnyDataWriter.Flush ( )
```

Flushes the batch in progress in the context of the calling thread.

The full documentation is available in the C API: `DDS_DataWriter_flush`

9.11.2.23 ResetEvents()

```
override void Rti.Dds.Publication.AnyDataWriter.ResetEvents (
            StatusMask eventsToRemove = StatusMask.All )  [inline], [virtual]
```

Stop notifying of certain events and remove their event handlers

Parameters

eventsToRemove	Selects which events will stop receiving notifications. Use StatusMask.All to remove all event handlers.

Implements **Rti.Dds.Core.Entity** (p. 597).

9.11.3 Property Documentation

9.11.3.1 TopicUntyped

```
abstract  IAnyTopic Rti.Dds.Publication.AnyDataWriter.TopicUntyped  [get]
```

Returns the type-erased Topic<T> associated with this **DataWriter** (p. 336).

Returns **DataWriter<T>.Topic** (p. 342)

9.11.3.2 Qos

```
 DataWriterQos Rti.Dds.Publication.AnyDataWriter.Qos  [get], [set]
```

Gets or sets the writer QoS.

*The full documentation is available in the C API:*DDS_DataWriter_set_qos

9.11.3.3 Publisher

```
abstract  Publisher Rti.Dds.Publication.AnyDataWriter.Publisher  [get]
```

This operation returns the **Publisher** (p. 884) to which the **DataWriter** (p. 336) belongs.

*The full documentation is available in the C API:*DDS_DataWriter_get_publisher

9.11.3.4 MatchedSubscriptions

```
IEnumerable< InstanceHandle> Rti.Dds.Publication.AnyDataWriter.MatchedSubscriptions  [get]
```

Retrieves the list of subscriptions currently "associated" with this **DataWriter** (p. 336).

*The full documentation is available in the C API:*DDS_DataWriter_get_matched_subscriptions

9.11.3.5 LivelinessLostStatus

LivelinessLostStatus Rti.Dds.Publication.AnyDataWriter.LivelinessLostStatus [get]

Accesses the StatusMask.LivelinessLost status.

The full documentation is available in the C API: DDS_DataWriter_get_liveliness_lost_status

9.11.3.6 OfferedDeadlineMissedStatus

OfferedDeadlineMissedStatus Rti.Dds.Publication.AnyDataWriter.OfferedDeadlineMissedStatus [get]

Accesses the StatusMask.PublicationMatched status.

The full documentation is available in the C API: DDS_DataWriter_get_offered_deadline_missed_↩
status

9.11.3.7 OfferedIncompatibleQosStatus

OfferedIncompatibleQosStatus Rti.Dds.Publication.AnyDataWriter.OfferedIncompatibleQosStatus [get]

Accesses the StatusMask.OfferedIncompatibleQos status.

The full documentation is available in the C API: DDS_DataWriter_get_offered_incompatible_qos↩
_status

9.11.3.8 PublicationMatchedStatus

PublicationMatchedStatus Rti.Dds.Publication.AnyDataWriter.PublicationMatchedStatus [get]

Accesses the StatusMask.PublicationMatched status.

The full documentation is available in the C API: DDS_DataWriter_get_publication_matched_status

9.11.3.9 DataWriterProtocolStatus

DataWriterProtocolStatus Rti.Dds.Publication.AnyDataWriter.DataWriterProtocolStatus [get]

Retrieve the StatusMask.DataWriterProtocol status.

The full documentation is available in the C API: DDS_DataWriter_get_datawriter_protocol_status

9.11.3.10 DataWriterCacheStatus

DataWriterCacheStatus Rti.Dds.Publication.AnyDataWriter.DataWriterCacheStatus [get]

Retrieve the StatusMask.DataWriterCache status.

The full documentation is available in the C API: DDS_DataWriter_get_datawriter_cache_status

9.11.3.11 ReliableReaderActivityChangedStatus

ReliableReaderActivityChangedStatus Rti.Dds.Publication.AnyDataWriter.ReliableReaderActivity↩ ChangedStatus [get]

Retrieve the StatusMask.ReliableReaderActivityChanged status.

The full documentation is available in the C API: DDS_DataWriter_get_reliable_reader_activity↩ _changed_status

9.11.3.12 ReliableWriterCacheChangedStatus

ReliableWriterCacheChangedStatus Rti.Dds.Publication.AnyDataWriter.ReliableWriterCacheChanged↩ Status [get]

Retrieve the StatusMask.ReliableWriterCacheChanged status.

The full documentation is available in the C API: DDS_DataWriter_get_reliable_writer_cache_↩ changed_status

9.11.3.13 ServiceRequestAcceptedStatus

ServiceRequestAcceptedStatus Rti.Dds.Publication.AnyDataWriter.ServiceRequestAcceptedStatus [get]

Retrieve the StatusMask.ServiceRequestAccepted status.

The full documentation is available in the C API: DDS_DataWriter_get_service_request_accepted↩ _status

9.11.3.14 LivelinessLost

LivelinessLostEventHandler Rti.Dds.Publication.AnyDataWriter.LivelinessLost [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessLost** (p. 109) status changes.

9.11.3.15 OfferedIncompatibleQos

OfferedIncompatibleQosEventHandler Rti.Dds.Publication.AnyDataWriter.OfferedIncompatibleQos [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedIncompatibleQos** (p. 108) status changes.

9.11.3.16 OfferedDeadlineMissed

OfferedDeadlineMissedEventHandler Rti.Dds.Publication.AnyDataWriter.OfferedDeadlineMissed [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedDeadlineMissed** (p. 108) status changes.

9.11.3.17 PublicationMatched

PublicationMatchedEventHandler Rti.Dds.Publication.AnyDataWriter.PublicationMatched [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.PublicationMatched** (p. 109) status changes

9.11.3.18 ReliableReaderActivityChanged

ReliableReaderActivityChangedEventHandler Rti.Dds.Publication.AnyDataWriter.ReliableReader↩ ActivityChanged [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableReaderActivityChanged** (p. 109) status changes.

9.11.3.19 ReliableWriterCacheChanged

ReliableWriterCacheChangedEventHandler Rti.Dds.Publication.AnyDataWriter.ReliableWriterCache↩ Changed [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableWriterCacheChanged** (p. 109) status changes.

9.11.3.20 ServiceRequestAccepted

ServiceRequestAcceptedEventHandler Rti.Dds.Publication.AnyDataWriter.ServiceRequestAccepted [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ServiceRequestAccepted** (p. 109) status changes.

9.11.3.21 ApplicationAcknowledgementReceived

ApplicationAcknowledgementReceivedEventHandler Rti.Dds.Publication.AnyDataWriter.Application↩AcknowledgementReceived [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterApplicationAcknowledgementReceived** (p. 109) status changes.

9.11.3.22 InstanceReplaced

InstanceReplacedEventHandler Rti.Dds.Publication.AnyDataWriter.InstanceReplaced [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterInstanceReplaced** (p. 109) status changes.

9.11.3.23 SampleRemoved

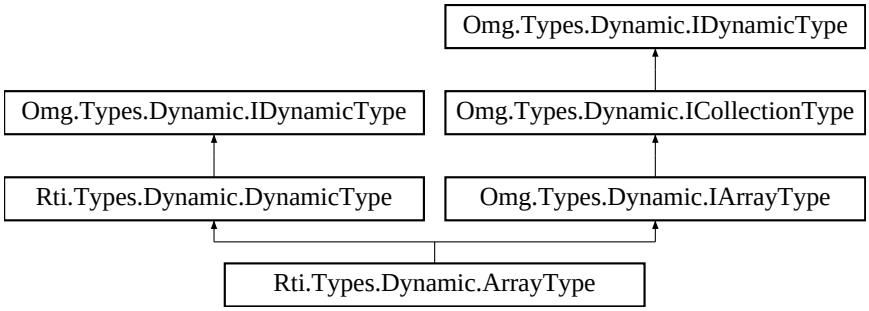
SampleRemovedEventHandler Rti.Dds.Publication.AnyDataWriter.SampleRemoved [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterSampleRemoved** (p. 110) status changes.

9.12 Rti.Types.Dynamic.ArrayType Class Reference

Represents an IDL array.

Inheritance diagram for Rti.Types.Dynamic.ArrayType:



Public Member Functions

- uint **GetDimension** (uint index)

  Returns the index-th dimension of an array type.

Properties

- uint **DimensionCount** `[get]`

  This function returns the number of dimensions of an array type.
- uint **TotalElementCount** `[get]`

  The number of elements in an array.
- **IDynamicType ContentType** `[get]`

  Returns the type of the members of the array.

9.12.1 Detailed Description

Represents an IDL array.

9.12.2 Member Function Documentation

9.12.2.1 GetDimension()

```
uint Rti.Types.Dynamic.ArrayType.GetDimension (
            uint index )
```

Returns the index-th dimension of an array type.

The full documentation is available in the C API: `DDS_TypeCode_array_dimension`

Implements **Omg.Types.Dynamic.IArrayType** (p. 651).

9.12.3 Property Documentation

9.12.3.1 DimensionCount

```
uint Rti.Types.Dynamic.ArrayType.DimensionCount  [get]
```

This function returns the number of dimensions of an array type.

The full documentation is available in the C API: `DDS_TypeCode_array_dimension_count`

Implements **Omg.Types.Dynamic.IArrayType** (p. 651).

9.12.3.2 TotalElementCount

```
uint Rti.Types.Dynamic.ArrayType.TotalElementCount [get]
```

The number of elements in an array.

The full documentation is available in the C API: `DDS_TypeCode_element_count`

Implements **Omg.Types.Dynamic.IArrayType** (p. 651).

9.12.3.3 ContentType

```
IDynamicType Rti.Types.Dynamic.ArrayType.ContentType [get]
```

Returns the type of the members of the array.

The full documentation is available in the C API: `DDS_TypeCode_content_type`

Implements **Omg.Types.Dynamic.ICollectionType** (p. 652).

9.13 Rti.Dds.Core.Policy.AsynchronousPublisher Class Reference

Configures the mechanism that sends user data in an external middleware thread.

Inherits IEquatable< AsynchronousPublisher >.

Public Member Functions

- **AsynchronousPublisher With** (Action< **AsynchronousPublisherBuilder** > build)
  *Creates a new **AsynchronousPublisher** (p. 175) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**AsynchronousPublisher** other)
  Compares for equality

Properties

- bool **DisableAsynchronousWrite** [get]

  Disable asynchronous publishing.
- **ThreadSettings Thread** [get]

  Settings of the publishing thread.
- bool **DisableAsynchronousBatch** [get]

  Disable asynchronous batch flushing.
- **ThreadSettings AsynchronousBatchThread** [get]

  Settings of the batch flushing thread.
- bool **DisableTopicQueryPublication** [get]

  Disable topic query publication.
- **ThreadSettings TopicQueryPublicationThread** [get]

  *Settings of the **Subscription.TopicQuery** (p. 1174) publication thread.*
- static **AsynchronousPublisher Default** = CreateDefault() [get]

  *Singleton containing the default value of a **AsynchronousPublisher** (p. 175)*

9.13.1 Detailed Description

Configures the mechanism that sends user data in an external middleware thread.

The full documentation is available in the C API: `DDS_AsynchronousPublisherQosPolicy`

9.13.2 Member Function Documentation

9.13.2.1 With()

```
AsynchronousPublisher Rti.Dds.Core.Policy.AsynchronousPublisher.With (
            Action< AsynchronousPublisherBuilder > build ) [inline]
```

Creates a new **AsynchronousPublisher** (p. 175) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **AsynchronousPublisher** (p. 175).

Returns

A new **AsynchronousPublisher** (p. 175) with the changes applied by the Action

9.13.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.AsynchronousPublisher.GetHashCode ( )  [inline]
```

Gets the hash code

9.13.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.AsynchronousPublisher.Equals (
            object other )
```

Compares for equality

9.13.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.AsynchronousPublisher.Equals (
             AsynchronousPublisher other )  [inline]
```

Compares for equality

9.13.3 Property Documentation

9.13.3.1 DisableAsynchronousWrite

```
bool Rti.Dds.Core.Policy.AsynchronousPublisher.DisableAsynchronousWrite  [get]
```

Disable asynchronous publishing.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_disable_↩ asynchronous_write

9.13.3.2 Thread

```
ThreadSettings Rti.Dds.Core.Policy.AsynchronousPublisher.Thread  [get]
```

Settings of the publishing thread.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_thread

9.13.3.3 DisableAsynchronousBatch

```
bool Rti.Dds.Core.Policy.AsynchronousPublisher.DisableAsynchronousBatch [get]
```

Disable asynchronous batch flushing.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_disable_asynchronous_batch

9.13.3.4 AsynchronousBatchThread

```
ThreadSettings Rti.Dds.Core.Policy.AsynchronousPublisher.AsynchronousBatchThread [get]
```

Settings of the batch flushing thread.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_asynchronous_batch_thread

9.13.3.5 DisableTopicQueryPublication

```
bool Rti.Dds.Core.Policy.AsynchronousPublisher.DisableTopicQueryPublication [get]
```

Disable topic query publication.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_disable_topic_query_publication

9.13.3.6 TopicQueryPublicationThread

```
ThreadSettings Rti.Dds.Core.Policy.AsynchronousPublisher.TopicQueryPublicationThread [get]
```

Settings of the **Subscription.TopicQuery** (p. 1174) publication thread.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_topic_query_publication_thread

9.13.3.7 Default

```
AsynchronousPublisher Rti.Dds.Core.Policy.AsynchronousPublisher.Default = CreateDefault() [static], [get]
```

Singleton containing the default value of a **AsynchronousPublisher** (p. 175)

9.14 Rti.Dds.Core.Policy.AsynchronousPublisherBuilder Class Reference

A modifiable type used to create an immutable **AsynchronousPublisher** (p. 175)

Public Member Functions

- **AsynchronousPublisherBuilder** (**AsynchronousPublisher** data)

  Creates a builder with the values of an existing immutable instance
- **AsynchronousPublisher Build** ()

  *Creates a new **AsynchronousPublisher** (p. 175) immutable object from this one.*

Properties

- bool **DisableAsynchronousWrite** `[get, set]`

  Disable asynchronous publishing.
- **ThreadSettings Thread** `[get, set]`

  Settings of the publishing thread.
- bool **DisableAsynchronousBatch** `[get, set]`

  Disable asynchronous batch flushing.
- **ThreadSettings AsynchronousBatchThread** `[get, set]`

  Settings of the batch flushing thread.
- bool **DisableTopicQueryPublication** `[get, set]`

  Disable topic query publication.
- **ThreadSettings TopicQueryPublicationThread** `[get, set]`

  *Settings of the **Subscription.TopicQuery** (p. 1174) publication thread.*

9.14.1 Detailed Description

A modifiable type used to create an immutable **AsynchronousPublisher** (p. 175)

9.14.2 Constructor & Destructor Documentation

9.14.2.1 AsynchronousPublisherBuilder()

```
Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.AsynchronousPublisherBuilder (
            AsynchronousPublisher data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.14.3 Member Function Documentation

9.14.3.1 Build()

```
AsynchronousPublisher Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.Build ( )
```

Creates a new **AsynchronousPublisher** (p. 175) immutable object from this one.

9.14.4 Property Documentation

9.14.4.1 DisableAsynchronousWrite

```
bool Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.DisableAsynchronousWrite [get], [set]
```

Disable asynchronous publishing.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_disable_asynchronous_write

9.14.4.2 Thread

```
ThreadSettings Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.Thread [get], [set]
```

Settings of the publishing thread.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_thread

9.14.4.3 DisableAsynchronousBatch

```
bool Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.DisableAsynchronousBatch [get], [set]
```

Disable asynchronous batch flushing.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_disable_asynchronous_batch

9.14.4.4 AsynchronousBatchThread

ThreadSettings Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.AsynchronousBatchThread [get], [set]

Settings of the batch flushing thread.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_↩ asynchronous_batch_thread

9.14.4.5 DisableTopicQueryPublication

bool Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.DisableTopicQueryPublication [get], [set]

Disable topic query publication.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_disable_↩ topic_query_publication

9.14.4.6 TopicQueryPublicationThread

ThreadSettings Rti.Dds.Core.Policy.AsynchronousPublisherBuilder.TopicQueryPublicationThread [get], [set]

Settings of the **Subscription.TopicQuery** (p. 1174) publication thread.

The full documentation is available in the C API: DDS_AsynchronousPublisherQosPolicy_topic_↩ query_publication_thread

9.15 Rti.Dds.Core.AsyncWaitSetProperty Class Reference

Configures an AsyncWaitSet, which is also the object that manages a **Subscription.SampleProcessor** (p. 1032).

Inherits IEquatable< AsyncWaitSetProperty >.

Public Member Functions

- **AsyncWaitSetProperty With** (Action< **AsyncWaitSetPropertyBuilder** > build)
  *Creates a new **AsyncWaitSetProperty** (p. 181) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**AsyncWaitSetProperty** other)
  Compares for equality

Properties

- **WaitSetProperty WaitsetProperty** [get]

  *Specifies the behavior of the asynchronous wait, which is equivalent to the wait mechanism of a **WaitSet** (p. 1248).*
- uint **ThreadPoolSize** [get]

  Number of threads that conform the thread pool of the AsyncWaitSet.
- **ThreadSettings ThreadSettings** [get]

  Configures each thread in the thread pool
- string **ThreadNamePrefix** [get]

  Prefix used to composed the name of each thread.
- **Duration WaitTimeout** [get]

  Asynchronous wait timeout.
- int **Level** [get]

  Specifies the level of an AsyncWaitSet.
- static **AsyncWaitSetProperty Default** = CreateDefault() [get]

  *Singleton containing the default value of a **AsyncWaitSetProperty** (p. 181)*

9.15.1 Detailed Description

Configures an AsyncWaitSet, which is also the object that manages a **Subscription.SampleProcessor** (p. 1032).

9.15.2 Member Function Documentation

9.15.2.1 With()

```
AsyncWaitSetProperty Rti.Dds.Core.AsyncWaitSetProperty.With (
            Action<  AsyncWaitSetPropertyBuilder > build )  [inline]
```

Creates a new **AsyncWaitSetProperty** (p. 181) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **AsyncWaitSetProperty** (p. 181).

Returns

A new **AsyncWaitSetProperty** (p. 181) with the changes applied by the Action

9.15.2.2 GetHashCode()

```
override int Rti.Dds.Core.AsyncWaitSetProperty.GetHashCode ( )  [inline]
```

Gets the hash code

9.15.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.AsyncWaitSetProperty.Equals (
            object other )
```

Compares for equality

9.15.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.AsyncWaitSetProperty.Equals (
             AsyncWaitSetProperty other )  [inline]
```

Compares for equality

9.15.3 Property Documentation

9.15.3.1 WaitsetProperty

```
WaitSetProperty Rti.Dds.Core.AsyncWaitSetProperty.WaitsetProperty  [get]
```

Specifies the behavior of the asynchronous wait, which is equivalent to the wait mechanism of a **WaitSet** (p. 1248).

The full documentation is available in the C API: `DDS_AsyncWaitSetProperty_t_waitset_property`

9.15.3.2 ThreadPoolSize

```
uint Rti.Dds.Core.AsyncWaitSetProperty.ThreadPoolSize  [get]
```

Number of threads that conform the thread pool of the AsyncWaitSet.

The full documentation is available in the C API: `DDS_AsyncWaitSetProperty_t_thread_pool_size`

9.15.3.3 ThreadSettings

ThreadSettings Rti.Dds.Core.AsyncWaitSetProperty.ThreadSettings [get]

Configures each thread in the thread pool

The full documentation is available in the C API: DDS_AsyncWaitSetProperty_t_thread_settings

9.15.3.4 ThreadNamePrefix

string Rti.Dds.Core.AsyncWaitSetProperty.ThreadNamePrefix [get]

Prefix used to composed the name of each thread.

The full documentation is available in the C API: DDS_AsyncWaitSetProperty_t_thread_name_prefix

9.15.3.5 WaitTimeout

Duration Rti.Dds.Core.AsyncWaitSetProperty.WaitTimeout [get]

Asynchronous wait timeout.

The full documentation is available in the C API: DDS_AsyncWaitSetProperty_t_wait_timeout

9.15.3.6 Level

int Rti.Dds.Core.AsyncWaitSetProperty.Level [get]

Specifies the level of an AsyncWaitSet.

The full documentation is available in the C API: DDS_AsyncWaitSetProperty_t_level

9.15.3.7 Default

AsyncWaitSetProperty Rti.Dds.Core.AsyncWaitSetProperty.Default = CreateDefault() [static], [get]

Singleton containing the default value of a **AsyncWaitSetProperty** (p. 181)

9.16 Rti.Dds.Core.AsyncWaitSetPropertyBuilder Class Reference

A modifiable type used to create an immutable **AsyncWaitSetProperty** (p. 181)

Public Member Functions

- **AsyncWaitSetProperty Build** ()

  *Creates a new **AsyncWaitSetProperty** (p. 181) immutable object from this one.*

Properties

- **WaitSetProperty WaitsetProperty** `[get, set]`

  *Specifies the behavior of the asynchronous wait behavior, which is equivalent to the wait mechanism of a **WaitSet** (p. 1248).*
- uint **ThreadPoolSize** `[get, set]`

  Number of threads that conform the thread pool of the AsyncWaitSet.
- **ThreadSettings ThreadSettings** `[get, set]`

  Configures each thread in the thread pool.
- string **ThreadNamePrefix** `[get, set]`

  Prefix used to name the threads in the thread pool.
- **Duration WaitTimeout** `[get, set]`

  Asynchronous wait timeout.
- int **Level** `[get, set]`

  Specifies the level of an AsyncWaitSet.

9.16.1 Detailed Description

A modifiable type used to create an immutable **AsyncWaitSetProperty** (p. 181)

9.16.2 Member Function Documentation

9.16.2.1 Build()

```
AsyncWaitSetProperty Rti.Dds.Core.AsyncWaitSetPropertyBuilder.Build ( )
```

Creates a new **AsyncWaitSetProperty** (p. 181) immutable object from this one.

9.16.3 Property Documentation

9.16.3.1 WaitsetProperty

WaitSetProperty Rti.Dds.Core.AsyncWaitSetPropertyBuilder.WaitsetProperty [get], [set]

Specifies the behavior of the asynchronous wait behavior, which is equivalent to the wait mechanism of a **WaitSet** (p. 1248).

*The full documentation is available in the C API:*DDS_AsyncWaitSetProperty_t_waitset_property

9.16.3.2 ThreadPoolSize

uint Rti.Dds.Core.AsyncWaitSetPropertyBuilder.ThreadPoolSize [get], [set]

Number of threads that conform the thread pool of the AsyncWaitSet.

*The full documentation is available in the C API:*DDS_AsyncWaitSetProperty_t_thread_pool_size

9.16.3.3 ThreadSettings

ThreadSettings Rti.Dds.Core.AsyncWaitSetPropertyBuilder.ThreadSettings [get], [set]

Configures each thread in the thread pool.

*The full documentation is available in the C API:*DDS_AsyncWaitSetProperty_t_thread_settings

9.16.3.4 ThreadNamePrefix

string Rti.Dds.Core.AsyncWaitSetPropertyBuilder.ThreadNamePrefix [get], [set]

Prefix used to name the threads in the thread pool.

*The full documentation is available in the C API:*DDS_AsyncWaitSetProperty_t_thread_name_prefix

9.16.3.5 WaitTimeout

Duration Rti.Dds.Core.AsyncWaitSetPropertyBuilder.WaitTimeout [get], [set]

Asynchronous wait timeout.

*The full documentation is available in the C API:*DDS_AsyncWaitSetProperty_t_wait_timeout

9.16.3.6 Level

```
int Rti.Dds.Core.AsyncWaitSetPropertyBuilder.Level [get], [set]
```

Specifies the level of an AsyncWaitSet.

The full documentation is available in the `C API:DDS_AsyncWaitSetProperty_t_level`

9.17 Rti.Dds.Core.Policy.Availability Class Reference

configures the availability of data.

Inherits IEquatable< Availability >.

Public Member Functions

- **Availability With** (Action< **AvailabilityBuilder** > build)

  *Creates a new **Availability** (p. 187) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Availability** other)

  Compares for equality

Properties

- bool **EnableRequiredSubscriptions** `[get]`

  Enables support for required subscriptions in a Publication.DataWriter<T>
- **Duration MaxDataAvailabilityWaitingTime** `[get]`

  Defines how much time to wait before delivering a sample to the application without having received some of the previous samples.
- **Duration MaxEndpointAvailabilityWaitingTime** `[get]`

  Defines how much time to wait to discover DataWriters providing samples for the same data source (virtual GUID).
- ImmutableList< **EndpointGroup** > **RequiredMatchedEndpointGroups** `[get]`

  A sequence of endpoint groups.
- static **Availability Default** `[get]`

  *Singleton containing the default value of a **Availability** (p. 187)*

9.17.1 Detailed Description

configures the availability of data.

The full documentation is available in the `C API:DDS_AvailabilityQosPolicy`

9.17.2 Member Function Documentation

9.17.2.1 With()

```
Availability Rti.Dds.Core.Policy.Availability.With (
            Action< AvailabilityBuilder > build )  [inline]
```

Creates a new **Availability** (p. 187) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Availability** (p. 187).

Returns

A new **Availability** (p. 187) with the changes applied by the Action

9.17.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Availability.GetHashCode ( )  [inline]
```

Gets the hash code

9.17.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Availability.Equals (
            object other )
```

Compares for equality

9.17.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Availability.Equals (
             Availability other )  [inline]
```

Compares for equality

9.17.3 Property Documentation

9.17.3.1 EnableRequiredSubscriptions

```
bool Rti.Dds.Core.Policy.Availability.EnableRequiredSubscriptions [get]
```

Enables support for required subscriptions in a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_enable_required_↩ subscriptions

9.17.3.2 MaxDataAvailabilityWaitingTime

```
Duration Rti.Dds.Core.Policy.Availability.MaxDataAvailabilityWaitingTime [get]
```

Defines how much time to wait before delivering a sample to the application without having received some of the previous samples.

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_max_data_↩ availability_waiting_time

9.17.3.3 MaxEndpointAvailabilityWaitingTime

```
Duration Rti.Dds.Core.Policy.Availability.MaxEndpointAvailabilityWaitingTime [get]
```

Defines how much time to wait to discover DataWriters providing samples for the same data source (virtual GUID).

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_max_endpoint_↩ availability_waiting_time

9.17.3.4 RequiredMatchedEndpointGroups

```
ImmutableList< EndpointGroup> Rti.Dds.Core.Policy.Availability.RequiredMatchedEndpointGroups
[get]
```

A sequence of endpoint groups.

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_required_matched_↩ endpoint_groups

9.17.3.5 Default

```
Availability Rti.Dds.Core.Policy.Availability.Default [static], [get]
```

Singleton containing the default value of a **Availability** (p. 187)

9.18 Rti.Dds.Core.Policy.AvailabilityBuilder Class Reference

A modifiable type used to create an immutable **Availability** (p. 187)

Public Member Functions

- **AvailabilityBuilder** (**Availability** data)

  Creates a builder with the values of an existing immutable instance
- **Availability Build** ()

  *Creates a new **Availability** (p. 187) immutable object from this one.*

Properties

- bool **EnableRequiredSubscriptions** `[get, set]`

  Enables support for required subscriptions in a Publication.DataWriter<T>
- **Duration MaxDataAvailabilityWaitingTime** `[get, set]`

  Defines how much time to wait before delivering a sample to the application without having received some of the previous samples.
- **Duration MaxEndpointAvailabilityWaitingTime** `[get, set]`

  Defines how much time to wait to discover DataWriters providing samples for the same data source (virtual GUID).
- ImmutableList< **EndpointGroup** >.Builder **RequiredMatchedEndpointGroups** `[get, set]`

  A sequence of endpoint groups.

9.18.1 Detailed Description

A modifiable type used to create an immutable **Availability** (p. 187)

9.18.2 Constructor & Destructor Documentation

9.18.2.1 AvailabilityBuilder()

```
Rti.Dds.Core.Policy.AvailabilityBuilder.AvailabilityBuilder (
            Availability data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.18.3 Member Function Documentation

9.18.3.1 Build()

```
Availability Rti.Dds.Core.Policy.AvailabilityBuilder.Build ( )
```

Creates a new **Availability** (p. 187) immutable object from this one.

9.18.4 Property Documentation

9.18.4.1 EnableRequiredSubscriptions

```
bool Rti.Dds.Core.Policy.AvailabilityBuilder.EnableRequiredSubscriptions [get], [set]
```

Enables support for required subscriptions in a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_enable_required_↩ subscriptions

9.18.4.2 MaxDataAvailabilityWaitingTime

```
Duration Rti.Dds.Core.Policy.AvailabilityBuilder.MaxDataAvailabilityWaitingTime [get], [set]
```

Defines how much time to wait before delivering a sample to the application without having received some of the previous samples.

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_max_data_↩ availability_waiting_time

9.18.4.3 MaxEndpointAvailabilityWaitingTime

```
Duration Rti.Dds.Core.Policy.AvailabilityBuilder.MaxEndpointAvailabilityWaitingTime [get], [set]
```

Defines how much time to wait to discover DataWriters providing samples for the same data source (virtual GUID).

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_max_endpoint_↩ availability_waiting_time

9.18.4.4 RequiredMatchedEndpointGroups

```
ImmutableList< EndpointGroup>.Builder Rti.Dds.Core.Policy.AvailabilityBuilder.RequiredMatched↩
EndpointGroups [get], [set]
```

A sequence of endpoint groups.

The full documentation is available in the C API: DDS_AvailabilityQosPolicy_required_matched_↩ endpoint_groups

9.19 Rti.Dds.Core.Policy.Batch Class Reference

Configures mechanism for collecting multiple data samples to be sent in a single network packet.

Inherits IEquatable< Batch >.

Public Member Functions

- **Batch With** (Action< **BatchBuilder** > build)
  *Creates a new **Batch** (p. 192) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**Batch** other)
  Compares for equality

Properties

- bool **Enable** [get]
  Specifies whether or not batching is enabled.
- int **MaxDataBytes** [get]
  The maximum cumulative length of all serialized samples in a batch.
- int **MaxSamples** [get]
  The maximum number of samples in a batch.
- **Duration MaxFlushDelay** [get]
  The maximum flush delay.
- **Duration SourceTimestampResolution** [get]
  ***Batch** (p. 192) source timestamp resolution.*
- bool **ThreadSafeWrite** [get]
  Determines whether or not the write operation is thread safe.
- static **Batch Default** [get]
  *Singleton containing the default value of a **Batch** (p. 192)*

9.19.1 Detailed Description

Configures mechanism for collecting multiple data samples to be sent in a single network packet.

The full documentation is available in the C API: DDS_BatchQosPolicy

9.19.2 Member Function Documentation

9.19.2.1 With()

```
Batch Rti.Dds.Core.Policy.Batch.With (
            Action< BatchBuilder > build ) [inline]
```

Creates a new **Batch** (p. 192) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Batch** (p. 192).

Returns

A new **Batch** (p. 192) with the changes applied by the Action

9.19.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Batch.GetHashCode ( )  [inline]
```

Gets the hash code

9.19.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Batch.Equals (
            object other )
```

Compares for equality

9.19.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Batch.Equals (
             Batch other )  [inline]
```

Compares for equality

9.19.3 Property Documentation

9.19.3.1 Enable

```
bool Rti.Dds.Core.Policy.Batch.Enable  [get]
```

Specifies whether or not batching is enabled.

The full documentation is available in the C API: DDS_BatchQosPolicy_enable

9.19.3.2 MaxDataBytes

```
int Rti.Dds.Core.Policy.Batch.MaxDataBytes [get]
```

The maximum cumulative length of all serialized samples in a batch.

The full documentation is available in the C API: DDS_BatchQosPolicy_max_data_bytes

9.19.3.3 MaxSamples

```
int Rti.Dds.Core.Policy.Batch.MaxSamples [get]
```

The maximum number of samples in a batch.

The full documentation is available in the C API: DDS_BatchQosPolicy_max_samples

9.19.3.4 MaxFlushDelay

```
Duration Rti.Dds.Core.Policy.Batch.MaxFlushDelay [get]
```

The maximum flush delay.

The full documentation is available in the C API: DDS_BatchQosPolicy_max_flush_delay

9.19.3.5 SourceTimestampResolution

```
Duration Rti.Dds.Core.Policy.Batch.SourceTimestampResolution [get]
```

Batch (p. 192) source timestamp resolution.

The full documentation is available in the C API: DDS_BatchQosPolicy_source_timestamp_↩ resolution

9.19.3.6 ThreadSafeWrite

```
bool Rti.Dds.Core.Policy.Batch.ThreadSafeWrite [get]
```

Determines whether or not the write operation is thread safe.

The full documentation is available in the C API: DDS_BatchQosPolicy_thread_safe_write

9.19.3.7 Default

```
Batch Rti.Dds.Core.Policy.Batch.Default [static], [get]
```

Singleton containing the default value of a **Batch** (p. 192)

9.20 Rti.Dds.Core.Policy.BatchBuilder Class Reference

A modifiable type used to create an immutable **Batch** (p. 192)

Public Member Functions

- **BatchBuilder** (**Batch** data)

  Creates a builder with the values of an existing immutable instance
- **Batch Build** ()

  *Creates a new **Batch** (p. 192) immutable object from this one.*

Properties

- bool **Enable** [get, set]

  Specifies whether or not batching is enabled.
- int **MaxDataBytes** [get, set]

  The maximum cumulative length of all serialized samples in a batch.
- int **MaxSamples** [get, set]

  The maximum number of samples in a batch.
- **Duration MaxFlushDelay** [get, set]

  The maximum flush delay.
- **Duration SourceTimestampResolution** [get, set]

  ***Batch** (p. 192) source timestamp resolution.*
- bool **ThreadSafeWrite** [get, set]

  Determines whether or not the write operation is thread safe.

9.20.1 Detailed Description

A modifiable type used to create an immutable **Batch** (p. 192)

9.20.2 Constructor & Destructor Documentation

9.20.2.1 BatchBuilder()

```
Rti.Dds.Core.Policy.BatchBuilder.BatchBuilder (
            Batch data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.20.3 Member Function Documentation

9.20.3.1 Build()

```
Batch Rti.Dds.Core.Policy.BatchBuilder.Build ( )
```

Creates a new **Batch** (p. 192) immutable object from this one.

9.20.4 Property Documentation

9.20.4.1 Enable

```
bool Rti.Dds.Core.Policy.BatchBuilder.Enable  [get], [set]
```

Specifies whether or not batching is enabled.

The full documentation is available in the C API: DDS_BatchQosPolicy_enable

9.20.4.2 MaxDataBytes

```
int Rti.Dds.Core.Policy.BatchBuilder.MaxDataBytes  [get], [set]
```

The maximum cumulative length of all serialized samples in a batch.

The full documentation is available in the C API: DDS_BatchQosPolicy_max_data_bytes

9.20.4.3 MaxSamples

```
int Rti.Dds.Core.Policy.BatchBuilder.MaxSamples  [get], [set]
```

The maximum number of samples in a batch.

The full documentation is available in the C API: DDS_BatchQosPolicy_max_samples

9.20.4.4 MaxFlushDelay

```
Duration Rti.Dds.Core.Policy.BatchBuilder.MaxFlushDelay  [get], [set]
```

The maximum flush delay.

The full documentation is available in the C API: DDS_BatchQosPolicy_max_flush_delay

9.20.4.5 SourceTimestampResolution

```
Duration Rti.Dds.Core.Policy.BatchBuilder.SourceTimestampResolution [get], [set]
```

Batch (p. 192) source timestamp resolution.

The full documentation is available in the C API: DDS_BatchQosPolicy_source_timestamp_↩ resolution

9.20.4.6 ThreadSafeWrite

```
bool Rti.Dds.Core.Policy.BatchBuilder.ThreadSafeWrite [get], [set]
```

Determines whether or not the write operation is thread safe.

*The full documentation is available in the C API:*DDS_BatchQosPolicy_thread_safe_write

9.21 Omg.Types.BoundAttribute Class Reference

Specifies the maximum length for a bounded IDL sequence or string

Inherits Attribute.

Public Member Functions

- **BoundAttribute** (int value)
  Specifies the maximum length
- **BoundAttribute** (uint value)
  Specifies the maximum length
- **BoundAttribute** (short value)
  Specifies the maximum length
- **BoundAttribute** (ushort value)
  Specifies the maximum length
- **BoundAttribute** (long value)
  Specifies the maximum length
- **BoundAttribute** (ulong value)
  Specifies the maximum length

Properties

- int **Value** [get, set]
  The maximum length

9.21.1 Detailed Description

Specifies the maximum length for a bounded IDL sequence or string

9.21.2 Constructor & Destructor Documentation

9.21.2.1 BoundAttribute() [1/6]

```
Omg.Types.BoundAttribute.BoundAttribute (
            int value )
```

Specifies the maximum length

9.21.2.2 BoundAttribute() [2/6]

```
Omg.Types.BoundAttribute.BoundAttribute (
            uint value )
```

Specifies the maximum length

9.21.2.3 BoundAttribute() [3/6]

```
Omg.Types.BoundAttribute.BoundAttribute (
            short value )
```

Specifies the maximum length

9.21.2.4 BoundAttribute() [4/6]

```
Omg.Types.BoundAttribute.BoundAttribute (
            ushort value )
```

Specifies the maximum length

9.21.2.5 BoundAttribute() [5/6]

```
Omg.Types.BoundAttribute.BoundAttribute (
            long value )
```

Specifies the maximum length

9.21.2.6 BoundAttribute() [6/6]

```
Omg.Types.BoundAttribute.BoundAttribute (
            ulong value )
```

Specifies the maximum length

9.21.3 Property Documentation

9.21.3.1 Value

```
int Omg.Types.BoundAttribute.Value  [get], [set]
```

The maximum length

9.22 Rti.Dds.Topics.BuiltinTopicKey Struct Reference

The key type of the built-in topic types.

Inherits IEquatable< BuiltinTopicKey >.

Public Member Functions

- bool **Equals** (**BuiltinTopicKey** other)

  Compares this instance handle with another handle for equality.
- override bool **Equals** (object obj)

  Compares this instance handle with another handle for equality.
- override int **GetHashCode** ()

  *Generates a hash code from this **BuiltinTopicKey** (*p. *199).*
- override string **ToString** ()

  *Returns a string representation of this **BuiltinTopicKey** (*p. *199)*
- byte[ ] **ToArray** ()

  Converts this key to a byte array.

Static Public Member Functions

- static **BuiltinTopicKey FromGuid** (in **Core.Guid** guid)

  *Creates a **BuiltinTopicKey** (p. 199) object from a GUID.*
- static **BuiltinTopicKey FromArray** (byte[ ] bytes)

  Creates an instance from the bytes in a 16-byte array

9.22.1 Detailed Description

The key type of the built-in topic types.

The full documentation is available in the C API: `DDS_BuiltinTopicKey_t`

9.22.2 Member Function Documentation

9.22.2.1 FromGuid()

```
static BuiltinTopicKey Rti.Dds.Topics.BuiltinTopicKey.FromGuid (
            in Core.Guid guid ) [inline], [static]
```

Creates a **BuiltinTopicKey** (p. 199) object from a GUID.

This method can be used to retrieve a **BuiltinTopicKey** (p. 199) object from an **Core.InstanceHandle** (p. 661) using **Core.Guid.FromInstanceHandle** (p. 640).

9.22.2.2 Equals() [1/2]

```
bool Rti.Dds.Topics.BuiltinTopicKey.Equals (
             BuiltinTopicKey other )
```

Compares this instance handle with another handle for equality.

The full documentation is available in the C API: `DDS_BuiltinTopicKey_t_equals`

9.22.2.3 Equals() [2/2]

```
override bool Rti.Dds.Topics.BuiltinTopicKey.Equals (
            object obj )
```

Compares this instance handle with another handle for equality.

The full documentation is available in the C API: `DDS_BuiltinTopicKey_t_equals`

9.22.2.4 GetHashCode()

```
override int Rti.Dds.Topics.BuiltinTopicKey.GetHashCode ( )
```

Generates a hash code from this **BuiltinTopicKey** (p. 199).

9.22.2.5 ToString()

```
override string Rti.Dds.Topics.BuiltinTopicKey.ToString ( )
```

Returns a string representation of this **BuiltinTopicKey** (p. 199)

9.22.2.6 ToArray()

```
byte[] Rti.Dds.Topics.BuiltinTopicKey.ToArray ( )
```

Converts this key to a byte array.

9.22.2.7 FromArray()

```
static BuiltinTopicKey Rti.Dds.Topics.BuiltinTopicKey.FromArray (
            byte[] bytes )  [inline], [static]
```

Creates an instance from the bytes in a 16-byte array

9.23 Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits Class Reference

Built-in topic reader's resource limits.

Inherits IEquatable< BuiltinTopicReaderResourceLimits >.

Public Member Functions

- **BuiltinTopicReaderResourceLimits With** (Action< **BuiltinTopicReaderResourceLimitsBuilder** > build)
  *Creates a new **BuiltinTopicReaderResourceLimits** (p. 201) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**BuiltinTopicReaderResourceLimits** other)
  Compares for equality

Properties

- int **InitialSamples** [get]

  Initial number of samples.
- int **MaxSamples** [get]

  Maximum number of samples.
- int **InitialInfos** [get]

  Initial number of sample infos.
- int **MaxInfos** [get]

  Maximum number of sample infos.
- int **InitialOutstandingReads** [get]

  The initial number of outstanding reads that have not call finish yet on the same built-in topic Subscription.DataReader<↩ T>.
- int **MaxOutstandingReads** [get]

  The maximum number of outstanding reads that have not called finish yet on the same built-in topic Subscription.Data↩ Reader<T>.
- int **MaxSamplesPerRead** [get]

  Maximum number of samples that can be read/taken on a same built-in topic Subscription.DataReader<T>.
- bool **DisableFragmentationSupport** [get]

  Determines whether the built-in topic Subscription.DataReader<T> can receive fragmented samples.
- int **MaxFragmentedSamples** [get]

  The maximum number of samples for which the built-in topic Subscription.DataReader<T> may store fragments at a given point in time.
- int **InitialFragmentedSamples** [get]

  The initial number of samples for which a built-in topic Subscription.DataReader<T> may store fragments.
- int **MaxFragmentedSamplesPerRemoteWriter** [get]

  The maximum number of samples per remote writer for which a built-in topic Subscription.DataReader<T> may store fragments.
- int **MaxFragmentsPerSample** [get]

  Maximum number of fragments for a single sample.
- bool **DynamicallyAllocateFragmentedSamples** [get]

  Determines whether the built-in topic Subscription.DataReader<T> pre-allocates storage for storing fragmented samples.
- static **BuiltinTopicReaderResourceLimits Default** [get]

  Singleton containing the default value of a ***BuiltinTopicReaderResourceLimits*** *(*p. 201*)*

9.23.1 Detailed Description

Built-in topic reader's resource limits.

The full documentation is available in the `C API:` `DDS_BuiltinTopicReaderResourceLimits_t`

9.23.2 Member Function Documentation

9.23.2.1 With()

```
BuiltinTopicReaderResourceLimits Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.With (
            Action< BuiltinTopicReaderResourceLimitsBuilder > build ) [inline]
```

Creates a new **BuiltinTopicReaderResourceLimits** (p. 201) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **BuiltinTopicReaderResourceLimits** (p. 201).

Returns

A new **BuiltinTopicReaderResourceLimits** (p. 201) with the changes applied by the Action

9.23.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.GetHashCode ( )  [inline]
```

Gets the hash code

9.23.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.Equals (
            object other )
```

Compares for equality

9.23.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.Equals (
             BuiltinTopicReaderResourceLimits other )  [inline]
```

Compares for equality

9.23.3 Property Documentation

9.23.3.1 InitialSamples

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.InitialSamples  [get]
```

Initial number of samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_↩ initial_samples

9.23.3.2 MaxSamples

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.MaxSamples [get]
```

Maximum number of samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_samples

9.23.3.3 InitialInfos

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.InitialInfos [get]
```

Initial number of sample infos.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_initial_infos

9.23.3.4 MaxInfos

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.MaxInfos [get]
```

Maximum number of sample infos.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_infos

9.23.3.5 InitialOutstandingReads

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.InitialOutstandingReads [get]
```

The initial number of outstanding reads that have not call finish yet on the same built-in topic Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_initial_outstanding_reads

9.23.3.6 MaxOutstandingReads

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.MaxOutstandingReads [get]
```

The maximum number of outstanding reads that have not called finish yet on the same built-in topic Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_outstanding_reads

9.23.3.7 MaxSamplesPerRead

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.MaxSamplesPerRead [get]
```

Maximum number of samples that can be read/taken on a same built-in topic Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_samples_per_read

9.23.3.8 DisableFragmentationSupport

```
bool Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.DisableFragmentationSupport [get]
```

Determines whether the built-in topic Subscription.DataReader<T> can receive fragmented samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_disable_fragmentation_support

9.23.3.9 MaxFragmentedSamples

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.MaxFragmentedSamples [get]
```

The maximum number of samples for which the built-in topic Subscription.DataReader<T> may store fragments at a given point in time.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_fragmented_samples

9.23.3.10 InitialFragmentedSamples

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.InitialFragmentedSamples [get]
```

The initial number of samples for which a built-in topic Subscription.DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_initial_fragmented_samples

9.23.3.11 MaxFragmentedSamplesPerRemoteWriter

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.MaxFragmentedSamplesPerRemoteWriter [get]
```

The maximum number of samples per remote writer for which a built-in topic Subscription.DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_fragmented_samples_per_remote_writer

9.23.3.12 MaxFragmentsPerSample

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.MaxFragmentsPerSample [get]
```

Maximum number of fragments for a single sample.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_fragments_per_sample

9.23.3.13 DynamicallyAllocateFragmentedSamples

```
bool Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.DynamicallyAllocateFragmentedSamples
[get]
```

Determines whether the built-in topic Subscription.DataReader<T> pre-allocates storage for storing fragmented samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_dynamically_allocate_fragmented_samples

9.23.3.14 Default

```
BuiltinTopicReaderResourceLimits Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimits.Default
[static], [get]
```

Singleton containing the default value of a **BuiltinTopicReaderResourceLimits** (p. 201)

9.24 Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder Class Reference

A modifiable type used to create an immutable **BuiltinTopicReaderResourceLimits** (p. 201)

Public Member Functions

- **BuiltinTopicReaderResourceLimitsBuilder** (**BuiltinTopicReaderResourceLimits** data)

  Creates a builder with the values of an existing immutable instance
- **BuiltinTopicReaderResourceLimits Build** ()

  *Creates a new **BuiltinTopicReaderResourceLimits** (p. 201) immutable object from this one.*

Properties

- int **InitialSamples** [get, set]

  Initial number of samples.
- int **MaxSamples** [get, set]

  Maximum number of samples.
- int **InitialInfos** [get, set]

  Initial number of sample infos.
- int **MaxInfos** [get, set]

  Maximum number of sample infos.
- int **InitialOutstandingReads** [get, set]

  The initial number of outstanding reads that have not call finish yet on the same built-in topic Subscription.DataReader<↩ T>.
- int **MaxOutstandingReads** [get, set]

  The maximum number of outstanding reads that have not called finish yet on the same built-in topic Subscription.Data↩ Reader<T>.
- int **MaxSamplesPerRead** [get, set]

  Maximum number of samples that can be read/taken on a same built-in topic Subscription.DataReader<T>.
- bool **DisableFragmentationSupport** [get, set]

  Determines whether the built-in topic Subscription.DataReader<T> can receive fragmented samples.
- int **MaxFragmentedSamples** [get, set]

  The maximum number of samples for which the built-in topic Subscription.DataReader<T> may store fragments at a given point in time.
- int **InitialFragmentedSamples** [get, set]

  The initial number of samples for which a built-in topic Subscription.DataReader<T> may store fragments.
- int **MaxFragmentedSamplesPerRemoteWriter** [get, set]

  The maximum number of samples per remote writer for which a built-in topic Subscription.DataReader<T> may store fragments.
- int **MaxFragmentsPerSample** [get, set]

  Maximum number of fragments for a single sample.
- bool **DynamicallyAllocateFragmentedSamples** [get, set]

  Determines whether the built-in topic Subscription.DataReader<T> pre-allocates storage for storing fragmented samples.

9.24.1 Detailed Description

A modifiable type used to create an immutable **BuiltinTopicReaderResourceLimits** (p. 201)

9.24.2 Constructor & Destructor Documentation

9.24.2.1 BuiltinTopicReaderResourceLimitsBuilder()

```
Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.BuiltinTopicReaderResourceLimits↩
Builder (
            BuiltinTopicReaderResourceLimits data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.24.3 Member Function Documentation

9.24.3.1 Build()

BuiltinTopicReaderResourceLimits Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.↩
Build ( )

Creates a new **BuiltinTopicReaderResourceLimits** (p. 201) immutable object from this one.

9.24.4 Property Documentation

9.24.4.1 InitialSamples

int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.InitialSamples [get], [set]

Initial number of samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_↩
initial_samples

9.24.4.2 MaxSamples

int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.MaxSamples [get], [set]

Maximum number of samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_↩
samples

9.24.4.3 InitialInfos

int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.InitialInfos [get], [set]

Initial number of sample infos.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_↩
initial_infos

9.24.4.4 MaxInfos

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.MaxInfos [get], [set]
```

Maximum number of sample infos.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_infos

9.24.4.5 InitialOutstandingReads

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.InitialOutstandingReads [get], [set]
```

The initial number of outstanding reads that have not call finish yet on the same built-in topic Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_initial_outstanding_reads

9.24.4.6 MaxOutstandingReads

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.MaxOutstandingReads [get], [set]
```

The maximum number of outstanding reads that have not called finish yet on the same built-in topic Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_outstanding_reads

9.24.4.7 MaxSamplesPerRead

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.MaxSamplesPerRead [get], [set]
```

Maximum number of samples that can be read/taken on a same built-in topic Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_samples_per_read

9.24.4.8 DisableFragmentationSupport

```
bool Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.DisableFragmentationSupport [get], [set]
```

Determines whether the built-in topic Subscription.DataReader<T> can receive fragmented samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_disable_fragmentation_support

9.24.4.9 MaxFragmentedSamples

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.MaxFragmentedSamples [get], [set]
```

The maximum number of samples for which the built-in topic Subscription.DataReader<T> may store fragments at a given point in time.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_↩ fragmented_samples

9.24.4.10 InitialFragmentedSamples

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.InitialFragmentedSamples [get],
[set]
```

The initial number of samples for which a built-in topic Subscription.DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_↩ initial_fragmented_samples

9.24.4.11 MaxFragmentedSamplesPerRemoteWriter

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.MaxFragmentedSamplesPerRemote↩
Writer [get], [set]
```

The maximum number of samples per remote writer for which a built-in topic Subscription.DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_↩ fragmented_samples_per_remote_writer

9.24.4.12 MaxFragmentsPerSample

```
int Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.MaxFragmentsPerSample [get],
[set]
```

Maximum number of fragments for a single sample.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_max_↩ fragments_per_sample

9.24.4.13 DynamicallyAllocateFragmentedSamples

```
bool Rti.Dds.Core.Policy.BuiltinTopicReaderResourceLimitsBuilder.DynamicallyAllocateFragmented↩
Samples [get], [set]
```

Determines whether the built-in topic Subscription.DataReader<T> pre-allocates storage for storing fragmented samples.

The full documentation is available in the C API: DDS_BuiltinTopicReaderResourceLimits_t_↩ dynamically_allocate_fragmented_samples

9.25 Omg.Dds.Core.Policy.ChangeableAttribute Class Reference

Attribute that indicates that a Qos policy type can be changed after its Entity has been created.

Inherits Attribute.

Public Member Functions

- **ChangeableAttribute** (**ChangeableWhen** changeableWhen= **ChangeableWhen.AnyTime**)
  Creates the attribute

Properties

- **ChangeableWhen ChangeableWhen** `[get, set]`
  Indicates when the policy can be changed

9.25.1 Detailed Description

Attribute that indicates that a Qos policy type can be changed after its Entity has been created.

9.25.2 Constructor & Destructor Documentation

9.25.2.1 ChangeableAttribute()

```
Omg.Dds.Core.Policy.ChangeableAttribute.ChangeableAttribute (
              ChangeableWhen changeableWhen =  ChangeableWhen.AnyTime )
```

Creates the attribute

Parameters

changeableWhen	When it can be changed

9.25.3 Property Documentation

9.25.3.1 ChangeableWhen

ChangeableWhen Omg.Dds.Core.Policy.ChangeableAttribute.ChangeableWhen [get], [set]

Indicates when the policy can be changed

9.26 Rti.Dds.Core.Policy.ChannelSettings Class Reference

Configures the properties of a channel in **MultiChannel** (p. 796).

Inherits IEquatable< ChannelSettings >.

Public Member Functions

- **ChannelSettings With** (Action< **ChannelSettingsBuilder** > build)

  *Creates a new **ChannelSettings** (p. 212) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ChannelSettings** other)

  Compares for equality

Properties

- ImmutableList< **TransportMulticastSettings** > **MulticastSettings** [get]

  *A sequence of **TransportMulticastSettings** (p. 1195) used to configure the multicast addresses associated with a channel.*
- string **FilterExpression** [get]

  A logical expression used to determine the data that will be published in the channel.
- int **Priority** [get]

  ***Publication** (p. 111) priority*
- static **ChannelSettings Default** = CreateDefault() [get]

  *Singleton containing the default value of a **ChannelSettings** (p. 212)*

9.26.1 Detailed Description

Configures the properties of a channel in **MultiChannel** (p. 796).

The full documentation is available in the C API: DDS_ChannelSettings_t

9.26.2 Member Function Documentation

9.26.2.1 With()

ChannelSettings Rti.Dds.Core.Policy.ChannelSettings.With (
Action< **ChannelSettingsBuilder** > *build*) [inline]

Creates a new **ChannelSettings** (p. 212) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **ChannelSettings** (p. 212).

Returns

A new **ChannelSettings** (p. 212) with the changes applied by the Action

9.26.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.ChannelSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.26.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.ChannelSettings.Equals (
            object other )
```

Compares for equality

9.26.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.ChannelSettings.Equals (
             ChannelSettings other )  [inline]
```

Compares for equality

9.26.3 Property Documentation

9.26.3.1 MulticastSettings

```
ImmutableList< TransportMulticastSettings> Rti.Dds.Core.Policy.ChannelSettings.MulticastSettings
[get]
```

A sequence of **TransportMulticastSettings** (p. 1195) used to configure the multicast addresses associated with a channel.

The full documentation is available in the C API: `DDS_ChannelSettings_t_multicast_settings`

9.26.3.2 FilterExpression

```
string Rti.Dds.Core.Policy.ChannelSettings.FilterExpression [get]
```

A logical expression used to determine the data that will be published in the channel.

The full documentation is available in the C API: `DDS_ChannelSettings_t_filter_expression`

9.26.3.3 Priority

```
int Rti.Dds.Core.Policy.ChannelSettings.Priority [get]
```

Publication (p. 111) priority

See also

Rti.Dds.Core.Priority (p. 861) for special values

The full documentation is available in the C API: `DDS_ChannelSettings_t_priority`

9.26.3.4 Default

```
ChannelSettings Rti.Dds.Core.Policy.ChannelSettings.Default = CreateDefault() [static], [get]
```

Singleton containing the default value of a **ChannelSettings** (p. 212)

9.27 Rti.Dds.Core.Policy.ChannelSettingsBuilder Class Reference

A modifiable type used to create an immutable **ChannelSettings** (p. 212)

Public Member Functions

- **ChannelSettingsBuilder** (**ChannelSettings** data)

  Creates a builder with the values of an existing immutable instance
- **ChannelSettings Build** ()

  *Creates a new **ChannelSettings** (p. 212) immutable object from this one.*

Properties

- ImmutableList< **TransportMulticastSettings** >.Builder **MulticastSettings** `[get, set]`

  *A sequence of **TransportMulticastSettings** (p. 1195) used to configure the multicast addresses associated with a channel.*
- string **FilterExpression** `[get, set]`

  A logical expression used to determine the data that will be published in the channel.
- int **Priority** `[get, set]`

  ***Publication** (p. 111) priority*

9.27.1 Detailed Description

A modifiable type used to create an immutable **ChannelSettings** (p. 212)

9.27.2 Constructor & Destructor Documentation

9.27.2.1 ChannelSettingsBuilder()

```
Rti.Dds.Core.Policy.ChannelSettingsBuilder.ChannelSettingsBuilder (
            ChannelSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.27.3 Member Function Documentation

9.27.3.1 Build()

```
ChannelSettings Rti.Dds.Core.Policy.ChannelSettingsBuilder.Build ( )
```

Creates a new **ChannelSettings** (p. 212) immutable object from this one.

9.27.4 Property Documentation

9.27.4.1 MulticastSettings

```
ImmutableList< TransportMulticastSettings>.Builder Rti.Dds.Core.Policy.ChannelSettingsBuilder.↩
MulticastSettings [get], [set]
```

A sequence of **TransportMulticastSettings** (p. 1195) used to configure the multicast addresses associated with a channel.

The full documentation is available in the C API: `DDS_ChannelSettings_t_multicast_settings`

9.27.4.2 FilterExpression

```
string Rti.Dds.Core.Policy.ChannelSettingsBuilder.FilterExpression [get], [set]
```

A logical expression used to determine the data that will be published in the channel.

The full documentation is available in the C API: `DDS_ChannelSettings_t_filter_expression`

9.27.4.3 Priority

```
int Rti.Dds.Core.Policy.ChannelSettingsBuilder.Priority [get], [set]
```

Publication (p. 111) priority

See also

Rti.Dds.Core.Priority (p. 861) for special values

The full documentation is available in the C API: `DDS_ChannelSettings_t_priority`

9.28 Rti.Dds.Subscription.CoherentAccess Struct Reference

A disposable object returned when a coherent access begins with **Subscriber.BeginAccess** (p. 1097) and whose **Dispose** (p. 217) method ends it.

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()

  Ends this coherent set

Properties

- **Subscriber RelatedSubscriber** [get]

  The subscriber that started a coherent access

9.28.1 Detailed Description

A disposable object returned when a coherent access begins with **Subscriber.BeginAccess** (p. 1097) and whose **Dispose** (p. 217) method ends it.

9.28.2 Member Function Documentation

9.28.2.1 Dispose()

```
void Rti.Dds.Subscription.CoherentAccess.Dispose ( )
```

Ends this coherent set

9.28.3 Property Documentation

9.28.3.1 RelatedSubscriber

```
Subscriber Rti.Dds.Subscription.CoherentAccess.RelatedSubscriber [get]
```

The subscriber that started a coherent access

9.29 Rti.Dds.Publication.CoherentSet Struct Reference

A disposable object returned when a coherent set begins with **Publisher.BeginCoherentChanges** (p. 889) and whose **Dispose** (p. 218) method ends it.

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()

  Ends this coherent set

Properties

- **Publisher RelatedPublisher** [get]

  The publisher that started this coherent set

9.29.1 Detailed Description

A disposable object returned when a coherent set begins with **Publisher.BeginCoherentChanges** (p. 889) and whose **Dispose** (p. 218) method ends it.

9.29.2 Member Function Documentation

9.29.2.1 Dispose()

```
void Rti.Dds.Publication.CoherentSet.Dispose ( )
```

Ends this coherent set

9.29.3 Property Documentation

9.29.3.1 RelatedPublisher

```
Publisher Rti.Dds.Publication.CoherentSet.RelatedPublisher [get]
```

The publisher that started this coherent set

9.30 Rti.Dds.Core.CoherentSetInfo Class Reference

Information about the coherent set a sample belongs to. Coherent sets are started with **Publication.Publisher.Begin↩ CoherentChanges** (p. 889).

Inherits IEquatable< CoherentSetInfo >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**CoherentSetInfo** other)

  Compares for equality

Properties

- **Guid GroupGuid** `[get]`

  The coherent set group GUID.
- long **CoherentSetSequenceNumber** `[get]`

  Sequence number that identifies a sample as part of a writer coherent set.
- long **GroupCoherentSetSequenceNumber** `[get]`

  Sequence number that identifies a sample as part of a group coherent set.
- bool **IncompleteCoherentSet** `[get]`

  Indicates if a sample is part of an incomplete coherent set.

9.30.1 Detailed Description

Information about the coherent set a sample belongs to. Coherent sets are started with **Publication.Publisher.Begin↩ CoherentChanges** (p. 889).

9.30.2 Member Function Documentation

9.30.2.1 GetHashCode()

```
override int Rti.Dds.Core.CoherentSetInfo.GetHashCode ( )  [inline]
```

Gets the hash code

9.30.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.CoherentSetInfo.Equals (
            object other )
```

Compares for equality

9.30.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.CoherentSetInfo.Equals (
            CoherentSetInfo other ) [inline]
```

Compares for equality

9.30.3 Property Documentation

9.30.3.1 GroupGuid

```
Guid Rti.Dds.Core.CoherentSetInfo.GroupGuid [get]
```

The coherent set group GUID.

The full documentation is available in the C API: `DDSCoherentSetInfo_t_group_guid`

9.30.3.2 CoherentSetSequenceNumber

```
long Rti.Dds.Core.CoherentSetInfo.CoherentSetSequenceNumber [get]
```

Sequence number that identifies a sample as part of a writer coherent set.

The full documentation is available in the C API: `DDSCoherentSetInfo_t_coherent_set_sequence_number`

9.30.3.3 GroupCoherentSetSequenceNumber

```
long Rti.Dds.Core.CoherentSetInfo.GroupCoherentSetSequenceNumber [get]
```

Sequence number that identifies a sample as part of a group coherent set.

The full documentation is available in the C API: `DDSCoherentSetInfo_t_group_coherent_set_sequence_number`

9.30.3.4 IncompleteCoherentSet

```
bool Rti.Dds.Core.CoherentSetInfo.IncompleteCoherentSet [get]
```

Indicates if a sample is part of an incomplete coherent set.

The full documentation is available in the C API: `DDSCoherentSetInfo_t_incomplete_coherent_set`

9.31 Rti.Config.Compliance Class Reference

This class contains methods to configure the compliance masks.

Public Types

- enum **XTypesMask** : uint {
  DHeaderInNonPrimitiveCollections ,
  EnumAsPrimitiveInCollections ,
  ParameterLengthWithPadding ,
  EncapsulationOptionsWithPadding ,
  AcceptUnknownEnumValue ,
  AcceptUnknownDiscriminator ,
  SelectDefaultDiscriminator ,
  SentinelInEmptyUnion ,
  InitializeDiscriminatorToDefault ,
  JavaKeyHash750 ,
  PythonInt8Connext730 ,
  MustUnderstandInKeyAndDiscriminator ,
  Vendor ,
  Default }

  This class configures different aspects of the Extended CDR encoding (XCDR and XCDR2).

Static Public Member Functions

- static **XTypesMask** **GetXTypesMask** ()

  Gets the XTypes compliance mask value for the application.
- static void **SetXTypesMask** (**XTypesMask** mask)

  Sets the level of compliance of the application with the XTypes specification.
- static void **loadComplianceMasks** ()

  Load the compliance masks from the environment variables.

9.31.1 Detailed Description

This class contains methods to configure the compliance masks.

9.31.2 Member Enumeration Documentation

9.31.2.1 XTypesMask

`enum` **`Rti.Config.Compliance.XTypesMask`** `:` `uint`

This class configures different aspects of the Extended CDR encoding (XCDR and XCDR2).

Enumerator

DHeaderInNonPrimitiveCollections	Serialization of sequences and arrays with non-primitive members includes a DHEADER.
EnumAsPrimitiveInCollections	Enums are considered primitive types in collection types.
ParameterLengthWithPadding	The length of a member header in a mutable type or an optional member will include padding bytes to a 4-byte boundary.
EncapsulationOptionsWithPadding	The padding bits will be set in the options field of the encapsulation header of a serialized payload.
AcceptUnknownEnumValue	Samples containing an unknown enumerator can be successfully deserialized to the default enumeration value.
AcceptUnknownDiscriminator	Samples containing an unknown discriminator can be successfully deserialized, and the sample won't be dropped.
SelectDefaultDiscriminator	Samples containing an unknown discriminator will be assigned the default discriminator value; if the bit is not set, the sample will preserve the discriminator value.
SentinelInEmptyUnion	Samples of a mutable union that contain an unknown discriminator will be serialized with a 4-byte sentinel value.
InitializeDiscriminatorToDefault	Unions discriminators will be initialized to the default value of the discriminator type.
JavaKeyHash750	KeyHash calculation for a Java instance will match the one produced by the Java API in Connext 7.5.0 and earlier versions.
PythonInt8Connext730	Interoperate with Connext 7.3.0 Python applications that published or subscribed to types with int8 members.
MustUnderstandInKeyAndDiscriminator	When this bit is set, the parameter id for members that are part of the key, or for the discriminator of a union, will have the MUST_UNDERSTAND bit set when serialized using XCDR2.
Vendor	This mask configures compliance with the OMG XTypes specification.
Default	Default XTypes compliance mask.

9.31.3 Member Function Documentation

9.31.3.1 GetXTypesMask()

```
static  XTypesMask Rti.Config.Compliance.GetXTypesMask ( )  [static]
```

Gets the XTypes compliance mask value for the application.

9.31.3.2 SetXTypesMask()

```
static void Rti.Config.Compliance.SetXTypesMask (
              XTypesMask mask )  [static]
```

Sets the level of compliance of the application with the XTypes specification.

9.31.3.3 loadComplianceMasks()

```
static void Rti.Config.Compliance.loadComplianceMasks ( )  [static]
```

Load the compliance masks from the environment variables.

9.32 Rti.Dds.Core.Policy.CompressionSettings Class Reference

Configures data compression

Inherits IEquatable< CompressionSettings >.

Public Member Functions

- **CompressionSettings With** (Action< **CompressionSettingsBuilder** > build)
  *Creates a new **CompressionSettings** (p. 223) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**CompressionSettings** other)
  Compares for equality

Static Public Attributes

- const uint **BestCompressionLevel** = 10
  *Specifies the **WriterCompressionLevel** (p. 226) with the best compression possible for a compression algorithm.*
- const uint **BestSpeedCompressionLevel** = 1
  *Specifies the **WriterCompressionLevel** (p. 226) with the best speed possible for a compression algorithm.*
- const uint **DefaultCompressionLevel** = **BestCompressionLevel**
  *The default **WriterCompressionLevel** (p. 226).*
- const uint **DefaultCompressionThreshold** = 0
  *The default **WriterCompressionThreshold** (p. 226).*

Properties

- **CompressionId CompressionIds** [get]
  Mask that represents the compression algorithms enabled.
- uint **WriterCompressionLevel** [get]
  The level of compression to use when compressing data.
- int **WriterCompressionThreshold** [get]
  The threshold, in bytes, above which a serialized sample will be eligible to be compressed.
- static **CompressionSettings Default** [get]
  *Singleton containing the default value of a **CompressionSettings** (p. 223)*

9.32.1 Detailed Description

Configures data compression

9.32.2 Member Function Documentation

9.32.2.1 With()

```
CompressionSettings Rti.Dds.Core.Policy.CompressionSettings.With (
            Action< CompressionSettingsBuilder > build )  [inline]
```

Creates a new **CompressionSettings** (p. 223) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **CompressionSettings** (p. 223).

Returns

A new **CompressionSettings** (p. 223) with the changes applied by the Action

9.32.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.CompressionSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.32.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.CompressionSettings.Equals (
            object other )
```

Compares for equality

9.32.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.CompressionSettings.Equals (
            CompressionSettings other )  [inline]
```

Compares for equality

9.32.3 Field Documentation

9.32.3.1 BestCompressionLevel

```
const uint Rti.Dds.Core.Policy.CompressionSettings.BestCompressionLevel = 10  [static]
```

Specifies the **WriterCompressionLevel** (p. 226) with the best compression possible for a compression algorithm.

9.32.3.2 BestSpeedCompressionLevel

```
const uint Rti.Dds.Core.Policy.CompressionSettings.BestSpeedCompressionLevel = 1  [static]
```

Specifies the **WriterCompressionLevel** (p. 226) with the best speed possible for a compression algorithm.

9.32.3.3 DefaultCompressionLevel

```
const uint Rti.Dds.Core.Policy.CompressionSettings.DefaultCompressionLevel =  BestCompressionLevel
[static]
```

The default **WriterCompressionLevel** (p. 226).

9.32.3.4 DefaultCompressionThreshold

```
const uint Rti.Dds.Core.Policy.CompressionSettings.DefaultCompressionThreshold = 0  [static]
```

The default **WriterCompressionThreshold** (p. 226).

9.32.4 Property Documentation

9.32.4.1 CompressionIds

CompressionId Rti.Dds.Core.Policy.CompressionSettings.CompressionIds [get]

Mask that represents the compression algorithms enabled.

The full documentation is available in the C API: DDSCompressionSettings_t_compression_ids

9.32.4.2 WriterCompressionLevel

uint Rti.Dds.Core.Policy.CompressionSettings.WriterCompressionLevel [get]

The level of compression to use when compressing data.

The full documentation is available in the C API: DDSCompressionSettings_t_writer_compression_level

9.32.4.3 WriterCompressionThreshold

int Rti.Dds.Core.Policy.CompressionSettings.WriterCompressionThreshold [get]

The threshold, in bytes, above which a serialized sample will be eligible to be compressed.

The full documentation is available in the C API: DDSCompressionSettings_t_writer_compression_threshold

9.32.4.4 Default

CompressionSettings Rti.Dds.Core.Policy.CompressionSettings.Default [static], [get]

Singleton containing the default value of a **CompressionSettings** (p. 223)

9.33 Rti.Dds.Core.Policy.CompressionSettingsBuilder Class Reference

A modifiable type used to create an immutable **CompressionSettings** (p. 223)

Public Member Functions

- **CompressionSettingsBuilder** (**CompressionSettings** data)

  Creates a builder with the values of an existing immutable instance
- **CompressionSettings Build** ()

  *Creates a new **CompressionSettings** (p. 223) immutable object from this one.*

Properties

- **CompressionId CompressionIds** `[get, set]`

  Mask that represents the compression algorithms enabled.
- uint **WriterCompressionLevel** `[get, set]`

  The level of compression to use when compressing data.
- int **WriterCompressionThreshold** `[get, set]`

  The threshold, in bytes, above which a serialized sample will be eligible to be compressed.

9.33.1 Detailed Description

A modifiable type used to create an immutable **CompressionSettings** (p. 223)

9.33.2 Constructor & Destructor Documentation

9.33.2.1 CompressionSettingsBuilder()

```
Rti.Dds.Core.Policy.CompressionSettingsBuilder.CompressionSettingsBuilder (
            CompressionSettings data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.33.3 Member Function Documentation

9.33.3.1 Build()

```
CompressionSettings Rti.Dds.Core.Policy.CompressionSettingsBuilder.Build ( )
```

Creates a new **CompressionSettings** (p. 223) immutable object from this one.

9.33.4 Property Documentation

9.33.4.1 CompressionIds

CompressionId Rti.Dds.Core.Policy.CompressionSettingsBuilder.CompressionIds [get], [set]

Mask that represents the compression algorithms enabled.

The full documentation is available in the C API: DDSCompressionSettings_t_compression_ids

9.33.4.2 WriterCompressionLevel

uint Rti.Dds.Core.Policy.CompressionSettingsBuilder.WriterCompressionLevel [get], [set]

The level of compression to use when compressing data.

The full documentation is available in the C API: DDSCompressionSettings_t_writer_compression_level

9.33.4.3 WriterCompressionThreshold

int Rti.Dds.Core.Policy.CompressionSettingsBuilder.WriterCompressionThreshold [get], [set]

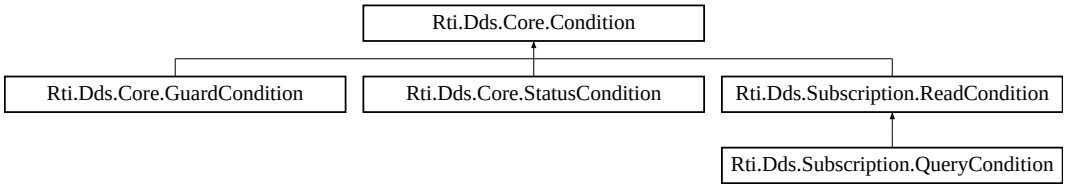
The threshold, in bytes, above which a serialized sample will be eligible to be compressed.

The full documentation is available in the C API: DDSCompressionSettings_t_writer_compression_threshold

9.34 Rti.Dds.Core.Condition Class Reference

Base class for all the conditions that may be attached to a **WaitSet** (p. 1248).

Inheritance diagram for Rti.Dds.Core.Condition:



Public Member Functions

- delegate void **TriggeredEventHandler** (**Condition** condition)

  *The delegate type of the **Triggered** (p. 230) event.*
- void **ResetEvents** ()

  *Removes all handlers for the **Triggered** (p. 230) event.*

Properties

- bool **TriggerValue** `[get]`

  Retrieves the trigger value (whether this condition is active)

Events

- **TriggeredEventHandler Triggered**

  *Event triggered in the context of **WaitSet.Dispatch()** (p. 1250) when **TriggerValue** (p. 230) becomes true.*

9.34.1 Detailed Description

Base class for all the conditions that may be attached to a **WaitSet** (p. 1248).

The full documentation is available in the `C API:`DDS_Condition

9.34.2 Member Function Documentation

9.34.2.1 TriggeredEventHandler()

```
delegate void Rti.Dds.Core.Condition.TriggeredEventHandler (
              Condition condition )
```

The delegate type of the **Triggered** (p. 230) event.

Parameters

condition	The triggered condition

9.34.2.2 ResetEvents()

```
void Rti.Dds.Core.Condition.ResetEvents ( )  [inline]
```

Removes all handlers for the **Triggered** (p. 230) event.

9.34.3 Property Documentation

9.34.3.1 TriggerValue

```
bool Rti.Dds.Core.Condition.TriggerValue  [get]
```

Retrieves the trigger value (whether this condition is active)

The full documentation is available in the C API: `DDS_Condition_get_trigger_value`

9.34.4 Event Documentation

9.34.4.1 Triggered

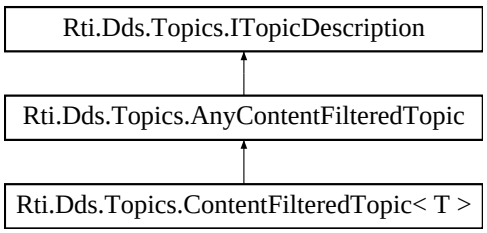
```
TriggeredEventHandler Rti.Dds.Core.Condition.Triggered
```

Event triggered in the context of **WaitSet.Dispatch()** (p. 1250) when **TriggerValue** (p. 230) becomes true.

9.35 Rti.Dds.Topics.ContentFilteredTopic< T > Class Template Reference

Specialization of **ITopicDescription** (p. 681) that allows for content-based subscriptions.

Inheritance diagram for Rti.Dds.Topics.ContentFilteredTopic< T >:



Public Member Functions

- override string **ToString** ()

  Provides basic information about this content-filtered topic

Properties

- **Topic**< T > **RelatedTopic** [get]

  Gets the topic associated with this content-filtered topic.

9.35.1 Detailed Description

Specialization of **ITopicDescription** (p. 681) that allows for content-based subscriptions.

Template Parameters

T	The topic-type

*The full documentation is available in the C API:*DDS_ContentFilteredTopic

9.35.2 Member Function Documentation

9.35.2.1 ToString()

override string **Rti.Dds.Topics.ContentFilteredTopic**< T >.ToString ( )

Provides basic information about this content-filtered topic

9.35.3 Property Documentation

9.35.3.1 RelatedTopic

Topic<T> **Rti.Dds.Topics.ContentFilteredTopic**< T >.RelatedTopic [get]

Gets the topic associated with this content-filtered topic.

*The full documentation is available in the C API:*DDS_ContentFilteredTopic_get_related_topic

9.36 Rti.Dds.Core.ContentFilterProperty Class Reference

Type used to provide all the required information to enable content filtering.

Inherits IEquatable< ContentFilterProperty >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ContentFilterProperty** other)

  Compares for equality

Properties

- string **ContentFilterTopicName** [get]

  Name of the Content-filtered Topic associated with the Reader.
- string **RelatedTopicName** [get]

  Name of the Topic related to the Content-filtered Topic.
- string **FilterClassName** [get]

  Identifies the filter class this filter belongs to. RTPS can support multiple filter classes (SQL, regular expressions, custom filters, etc).
- string **FilterExpression** [get]

  The actual filter expression. Must be a valid expression for the filter class specified using filterClassName.
- ImmutableList< string > **ExpressionParameters** [get]

  Defines the value for each parameter in the filter expression.

9.36.1 Detailed Description

Type used to provide all the required information to enable content filtering.

The full documentation is available in the C API: `DDS_ContentFilterProperty_t`

9.36.2 Member Function Documentation

9.36.2.1 GetHashCode()

```
override int Rti.Dds.Core.ContentFilterProperty.GetHashCode ( )  [inline]
```

Gets the hash code

9.36.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.ContentFilterProperty.Equals (
            object other )
```

Compares for equality

9.36.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.ContentFilterProperty.Equals (
             ContentFilterProperty other )  [inline]
```

Compares for equality

9.36.3 Property Documentation

9.36.3.1 ContentFilterTopicName

```
string Rti.Dds.Core.ContentFilterProperty.ContentFilterTopicName  [get]
```

Name of the Content-filtered Topic associated with the Reader.

The full documentation is available in the C API: DDS_ContentFilterProperty_t_content_filter_↩ topic_name

9.36.3.2 RelatedTopicName

```
string Rti.Dds.Core.ContentFilterProperty.RelatedTopicName  [get]
```

Name of the Topic related to the Content-filtered Topic.

The full documentation is available in the C API: DDS_ContentFilterProperty_t_related_topic_↩ name

9.36.3.3 FilterClassName

```
string Rti.Dds.Core.ContentFilterProperty.FilterClassName  [get]
```

Identifies the filter class this filter belongs to. RTPS can support multiple filter classes (SQL, regular expressions, custom filters, etc).

The full documentation is available in the C API: DDS_ContentFilterProperty_t_filter_class_name

9.36.3.4 FilterExpression

```
string Rti.Dds.Core.ContentFilterProperty.FilterExpression [get]
```

The actual filter expression. Must be a valid expression for the filter class specified using filterClassName.

The full documentation is available in the C API: `DDS_ContentFilterProperty_t_filter_expression`

9.36.3.5 ExpressionParameters

```
ImmutableList<string> Rti.Dds.Core.ContentFilterProperty.ExpressionParameters [get]
```

Defines the value for each parameter in the filter expression.

The full documentation is available in the C API: `DDS_ContentFilterProperty_t_expression_parameters`

9.37 Rti.Dds.Core.Cookie Class Reference

Unique identifier for a written data sample in the form of a sequence of bytes.

Inherits IEquatable< Cookie >.

Public Member Functions

- **Cookie** (IEnumerable< byte > value)

  *Creates a new **Cookie** (p. 234) instance with the bytes inside a container.*
- **Cookie** (ImmutableList< byte > value)

  *Creates a **Cookie** (p. 234) with from a list of bytes.*
- **Cookie With** (Action< ImmutableList< byte >.Builder > build)

  Creates a new Cokie with a set of changes specified in an Action
- override int **GetHashCode** ()

  Gets the hash code.
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**Cookie** other)

  Compares for equality.

Properties

- ImmutableList< byte > **Value** `[get]`

  A sequence of bytes.
- static **Cookie Empty** = new **Cookie**(ImmutableList<byte>.Empty) `[get]`

  *Creates a new empty **Cookie** (p. 234) instance.*

9.37.1 Detailed Description

Unique identifier for a written data sample in the form of a sequence of bytes.

The full documentation is available in the C API: `DDS_Cookie_t`

9.37.2 Constructor & Destructor Documentation

9.37.2.1 Cookie() [1/2]

```
Rti.Dds.Core.Cookie.Cookie (
            IEnumerable< byte > value )  [inline]
```

Creates a new **Cookie** (p. 234) instance with the bytes inside a container.

9.37.2.2 Cookie() [2/2]

```
Rti.Dds.Core.Cookie.Cookie (
            ImmutableList< byte > value )
```

Creates a **Cookie** (p. 234) with from a list of bytes.

9.37.3 Member Function Documentation

9.37.3.1 With()

```
Cookie Rti.Dds.Core.Cookie.With (
            Action< ImmutableList< byte >.Builder > build )  [inline]
```

Creates a new Cokie with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable list with the current values of this object's **Value** (p. 236).

Returns

A new **Cookie** (p. 234) with the changes applied by the Action

9.37.3.2 GetHashCode()

```
override int Rti.Dds.Core.Cookie.GetHashCode ( )  [inline]
```

Gets the hash code.

9.37.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Cookie.Equals (
            object other )
```

Compares for equality.

9.37.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Cookie.Equals (
             Cookie other )  [inline]
```

Compares for equality.

9.37.4 Property Documentation

9.37.4.1 Value

```
ImmutableList<byte> Rti.Dds.Core.Cookie.Value  [get]
```

A sequence of bytes.

The full documentation is available in the C API: DDS_Cookie_t_value

9.37.4.2 Empty

```
Cookie Rti.Dds.Core.Cookie.Empty = new  Cookie(ImmutableList<byte>.Empty)  [static], [get]
```

Creates a new empty **Cookie** (p. 234) instance.

9.38 Rti.Dds.Core.Policy.Database Class Reference

Configures various threads and resource limits used to control the internal database.

Inherits IEquatable< Database >.

Public Member Functions

- **Database With** (Action< **DatabaseBuilder** > build)

  *Creates a new **Database** (p. 237) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Database** other)

  Compares for equality

Data Fields

- **ThreadSettings Thread**

  ***Database** (p. 237) thread settings.*
- **Duration ShutdownTimeout**

  The maximum wait time during a shutdown.
- **Duration CleanupPeriod**

  The database thread will wake up at this rate to clean up the database.
- **Duration ShutdownCleanupPeriod**

  The clean-up period used during database shut-down.
- int **InitialRecords**

  The initial number of total records.
- int **MaxSkiplistLevel**

  The maximum level of the skiplist.
- int **MaxWeakReferences**

  The maximum number of weak references.
- int **InitialWeakReferences**

  The initial number of weak references.

Properties

- static **Database** **Default** = CreateDefault() [get]

  *Singleton containing the default value of a **Database** (p. 237)*

9.38.1 Detailed Description

Configures various threads and resource limits used to control the internal database.

9.38.2 Member Function Documentation

9.38.2.1 With()

```
Database Rti.Dds.Core.Policy.Database.With (
            Action< DatabaseBuilder > build ) [inline]
```

Creates a new **Database** (p. 237) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Database** (p. 237).

Returns

A new **Database** (p. 237) with the changes applied by the Action

9.38.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Database.GetHashCode ( ) [inline]
```

Gets the hash code

9.38.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Database.Equals (
            object other )
```

Compares for equality

9.38.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Database.Equals (
            Database other )  [inline]
```

Compares for equality

9.38.3 Field Documentation

9.38.3.1 Thread

ThreadSettings Rti.Dds.Core.Policy.Database.Thread

Database (p. 237) thread settings.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_thread

9.38.3.2 ShutdownTimeout

Duration Rti.Dds.Core.Policy.Database.ShutdownTimeout

The maximum wait time during a shutdown.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_shutdown_timeout

9.38.3.3 CleanupPeriod

Duration Rti.Dds.Core.Policy.Database.CleanupPeriod

The database thread will wake up at this rate to clean up the database.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_cleanup_period

9.38.3.4 ShutdownCleanupPeriod

Duration Rti.Dds.Core.Policy.Database.ShutdownCleanupPeriod

The clean-up period used during database shut-down.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_shutdown_cleanup_period

9.38.3.5 InitialRecords

```
int Rti.Dds.Core.Policy.Database.InitialRecords
```

The initial number of total records.

The full documentation is available in the C API: `DDS_DatabaseQosPolicy_initial_records`

9.38.3.6 MaxSkiplistLevel

```
int Rti.Dds.Core.Policy.Database.MaxSkiplistLevel
```

The maximum level of the skiplist.

The full documentation is available in the C API: `DDS_DatabaseQosPolicy_max_skiplist_level`

9.38.3.7 MaxWeakReferences

```
int Rti.Dds.Core.Policy.Database.MaxWeakReferences
```

The maximum number of weak references.

The full documentation is available in the C API: `DDS_DatabaseQosPolicy_max_weak_references`

9.38.3.8 InitialWeakReferences

```
int Rti.Dds.Core.Policy.Database.InitialWeakReferences
```

The initial number of weak references.

The full documentation is available in the C API: `DDS_DatabaseQosPolicy_initial_weak_references`

9.38.4 Property Documentation

9.38.4.1 Default

```
Database Rti.Dds.Core.Policy.Database.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **Database** (p. 237)

9.39 Rti.Dds.Core.Policy.DatabaseBuilder Class Reference

A modifiable type used to create an immutable **Database** (p. 237)

Public Member Functions

- **DatabaseBuilder** (**Database** data)

  Creates a builder with the values of an existing immutable instance
- **Database Build** ()

  *Creates a new **Database** (p. 237) immutable object from this one.*

Properties

- **ThreadSettings Thread** `[get, set]`

  ***Database** (p. 237) thread settings.*
- **Duration ShutdownTimeout** `[get, set]`

  The maximum wait time during a shutdown.
- **Duration CleanupPeriod** `[get, set]`

  The database thread will wake up at this rate to clean up the database.
- **Duration ShutdownCleanupPeriod** `[get, set]`

  The clean-up period used during database shut-down.
- int **InitialRecords** `[get, set]`

  The initial number of total records.
- int **MaxSkiplistLevel** `[get, set]`

  The maximum level of the skiplist.
- int **MaxWeakReferences** `[get, set]`

  The maximum number of weak references.
- int **InitialWeakReferences** `[get, set]`

  The initial number of weak references.

9.39.1 Detailed Description

A modifiable type used to create an immutable **Database** (p. 237)

9.39.2 Constructor & Destructor Documentation

9.39.2.1 DatabaseBuilder()

```
Rti.Dds.Core.Policy.DatabaseBuilder.DatabaseBuilder (
            Database data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.39.3 Member Function Documentation

9.39.3.1 Build()

Database Rti.Dds.Core.Policy.DatabaseBuilder.Build ( )

Creates a new **Database** (p. 237) immutable object from this one.

9.39.4 Property Documentation

9.39.4.1 Thread

ThreadSettings Rti.Dds.Core.Policy.DatabaseBuilder.Thread [get], [set]

Database (p. 237) thread settings.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_thread

9.39.4.2 ShutdownTimeout

Duration Rti.Dds.Core.Policy.DatabaseBuilder.ShutdownTimeout [get], [set]

The maximum wait time during a shutdown.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_shutdown_timeout

9.39.4.3 CleanupPeriod

Duration Rti.Dds.Core.Policy.DatabaseBuilder.CleanupPeriod [get], [set]

The database thread will wake up at this rate to clean up the database.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_cleanup_period

9.39.4.4 ShutdownCleanupPeriod

Duration Rti.Dds.Core.Policy.DatabaseBuilder.ShutdownCleanupPeriod [get], [set]

The clean-up period used during database shut-down.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_shutdown_cleanup_period

9.39.4.5 InitialRecords

```
int Rti.Dds.Core.Policy.DatabaseBuilder.InitialRecords [get], [set]
```

The initial number of total records.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_initial_records

9.39.4.6 MaxSkiplistLevel

```
int Rti.Dds.Core.Policy.DatabaseBuilder.MaxSkiplistLevel [get], [set]
```

The maximum level of the skiplist.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_max_skiplist_level

9.39.4.7 MaxWeakReferences

```
int Rti.Dds.Core.Policy.DatabaseBuilder.MaxWeakReferences [get], [set]
```

The maximum number of weak references.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_max_weak_references

9.39.4.8 InitialWeakReferences

```
int Rti.Dds.Core.Policy.DatabaseBuilder.InitialWeakReferences [get], [set]
```

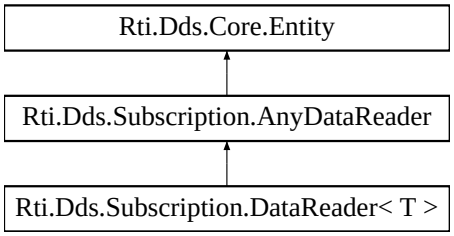
The initial number of weak references.

The full documentation is available in the C API: DDS_DatabaseQosPolicy_initial_weak_↩ references

9.40 Rti.Dds.Subscription.DataReader< T > Class Template Reference

Allows the application to: (1) declare the data it wishes to receive (i.e. make a subscription) and (2) access the data received by the attached **Subscriber** (p. 1090).

Inheritance diagram for Rti.Dds.Subscription.DataReader< T >:



Public Member Functions

- **LoanedSamples**< T > **Read** ()

  Access all data samples.
- override **LoanedSamples**< object > **ReadUntyped** ()

  *Allows calling **Read** (p. 244) in a context where the type is not known, as an **AnyDataReader** (p. 149)*
- override **LoanedSamples**< object > **TakeUntyped** ()

  *Allows calling **Take** (p. 245) in a context where the type is not known, as an **AnyDataReader** (p. 149)*
- **LoanedSamples**< T > **Take** ()

  Access and remove all data samples.
- **Selector**< T > **Select** ()

  Access data samples according with certain selection criteria
- override **SelectorUntyped** **SelectUntyped** ()

  *Calls **Select** (p. 245), but allows doing so as an **AnyDataReader** (p. 149) in a context where T is not known.*
- **InstanceHandle** **LookupInstance** (T keyHolder)

  Retrieves the instance handle that corresponds to a data sample containing the key values.
- override **InstanceHandle** **LookupInstanceUntyped** (object keyHolder)

  *Calls **LookupInstance(T)** (p. 246), but allows doing so as an **AnyDataReader** (p. 149) in a context where T is not known.*
- T **GetKeyValue** (T keyHolder, in **InstanceHandle** instanceHandle)

  Retrieve the instance key value that corresponds to an instance handle.
- override object **GetKeyValueUntyped** (object keyHolder, in **InstanceHandle** instanceHandle)

  *Calls **DataReader**<**T**>**.GetKeyValue** (p. 247), but allows doing so as an **AnyDataReader** (p. 149) in a context where T is not known.*
- override string **ToString** ()

  Provides a readable summary of information about this DataWriter.

Properties

- override **Subscriber** **Subscriber** `[get]`

  *Returns the **Subscriber** (p. 1090) to which the **DataReader** (p. 243) belongs.*
- override **ITopicDescription** **TopicDescription** `[get]`

  *Returns the **TopicDescription** (p. 248) associated with the **DataReader** (p. 243).*

9.40.1 Detailed Description

Allows the application to: (1) declare the data it wishes to receive (i.e. make a subscription) and (2) access the data received by the attached **Subscriber** (p. 1090).

The full documentation is available in the `C API:DDS_DataReader`

9.40.2 Member Function Documentation

9.40.2.1 Read()

```
LoanedSamples< T > Rti.Dds.Subscription.DataReader< T >.Read ( )
```

Access all data samples.

The full documentation is available in the C API: `DDSTypedDataReader_read`

9.40.2.2 ReadUntyped()

```
override LoanedSamples< object > Rti.Dds.Subscription.DataReader< T >.ReadUntyped ( ) [virtual]
```

Allows calling **Read** (p. 244) in a context where the type is not known, as an **AnyDataReader** (p. 149)

Returns

A collection equivalent to the one returned by **Read** (p. 244), but one where the declared type of the data is object, instead of a concrete T.

Implements **Rti.Dds.Subscription.AnyDataReader** (p. 155).

9.40.2.3 TakeUntyped()

```
override LoanedSamples< object > Rti.Dds.Subscription.DataReader< T >.TakeUntyped ( ) [virtual]
```

Allows calling **Take** (p. 245) in a context where the type is not known, as an **AnyDataReader** (p. 149)

Returns

A collection equivalent to the one returned by **Take** (p. 245), but one where the declared type of the data is object, instead of a concrete T.

Implements **Rti.Dds.Subscription.AnyDataReader** (p. 155).

9.40.2.4 Take()

```
LoanedSamples< T > Rti.Dds.Subscription.DataReader< T >.Take ( )
```

Access and remove all data samples.

See also `Rti.Dds.Subscription.DataReaderAsyncExtensions.TakeAsync`.

The full documentation is available in the C API: `DDSTypedDataReader_take`

9.40.2.5 Select()

```
Selector< T >  Rti.Dds.Subscription.DataReader< T >.Select ( )
```

Access data samples according with certain selection criteria

Returns

A selector that can be configured to specify which samples to read or take.

The full documentation is available in the C API: DDSTypedDataReader_take

9.40.2.6 SelectUntyped()

```
override  SelectorUntyped  Rti.Dds.Subscription.DataReader< T >.SelectUntyped ( )  [virtual]
```

Calls **Select** (p. 245), but allows doing so as an **AnyDataReader** (p. 149) in a context where T is not known.

Returns

A selector that can be configured to specify which samples to read or take. /returns>

Implements **Rti.Dds.Subscription.AnyDataReader** (p. 156).

9.40.2.7 LookupInstance()

```
InstanceHandle  Rti.Dds.Subscription.DataReader< T >.LookupInstance (
            T keyHolder )
```

Retrieves the instance handle that corresponds to a data sample containing the key values.

The full documentation is available in the C API: DDSTypedDataReader_lookup_instance

9.40.2.8 LookupInstanceUntyped()

```
override  InstanceHandle  Rti.Dds.Subscription.DataReader< T >.LookupInstanceUntyped (
            object keyHolder )  [virtual]
```

Calls **LookupInstance(T)** (p. 246), but allows doing so as an **AnyDataReader** (p. 149) in a context where T is not known.

Parameters

keyHolder	The key fields of the instance to lookup. The runtime type of keyHolder must be T. Otherwise this operation throws InvalidCastException.

Implements **Rti.Dds.Subscription.AnyDataReader** (p. 155).

9.40.2.9 GetKeyValue()

```
T  Rti.Dds.Subscription.DataReader< T >.GetKeyValue (
            T keyHolder,
            in  InstanceHandle instanceHandle )  [inline]
```

Retrieve the instance key value that corresponds to an instance handle.

The full documentation is available in the C API: `DDSTypedDataReader_get_key_value`

9.40.2.10 GetKeyValueUntyped()

```
override object  Rti.Dds.Subscription.DataReader< T >.GetKeyValueUntyped (
            object keyHolder,
            in  InstanceHandle instanceHandle )
```

Calls **DataReader<T>.GetKeyValue** (p. 247), but allows doing so as an **AnyDataReader** (p. 149) in a context where T is not known.

Parameters

keyHolder	The obtained key values.
instanceHandle	The **InstanceHandle** (p. 598) corresponding to the instance whose key values we want to obtain. The runtime type of keyHolder must be T. Otherwise this operation throws InvalidCastException.

Returns

The obtained key values.

9.40.2.11 ToString()

```
override string  Rti.Dds.Subscription.DataReader< T >.ToString ( )  [inline]
```

Provides a readable summary of information about this DataWriter.

9.40.3 Property Documentation

9.40.3.1 Subscriber

override **Subscriber** **Rti.Dds.Subscription.DataReader**< T >. **Subscriber** [get]

Returns the **Subscriber** (p. 1090) to which the **DataReader** (p. 243) belongs.

The full documentation is available in the C API: DDS_DataReader_get_subscriber

9.40.3.2 TopicDescription

override **ITopicDescription** **Rti.Dds.Subscription.DataReader**< T >.TopicDescription [get]

Returns the **TopicDescription** (p. 248) associated with the **DataReader** (p. 243).

The full documentation is available in the C API: DDS_DataReader_get_topicdescription

9.41 Rti.Dds.Subscription.DataReaderAsyncExtensions Class Reference

Provides extensions to DataReader<T>

Static Public Member Functions

- static IAsyncEnumerable< **LoanedSample**< T > > **TakeAsync**< **T** > (this **DataReader**< T > reader)
  Provides an infinite asynchronous enumerable that returns new samples from a reader as they become available.
- static IAsyncEnumerable< **LoanedSample**< T > > **TakeAsync**< **T** > (this **Selector**< T > selector)
  Provides an infinite asynchronous enumerable that returns new samples from a reader selector as they become available.
- static async IAsyncEnumerable< T > **ValidData**< **T** > (this IAsyncEnumerable< **LoanedSample**< T > > samples, [EnumeratorCancellation] CancellationToken cancellationToken=default)
  Filters a sequence of samples, returning valid data only.

9.41.1 Detailed Description

Provides extensions to DataReader<T>

Note

These extensions are included in the Rti.ConnextDds.Extra package.

9.41.2 Member Function Documentation

9.41.2.1 TakeAsync< T >() [1/2]

static IAsyncEnumerable< **LoanedSample**< T > > Rti.Dds.Subscription.DataReaderAsyncExtensions.↩
TakeAsync< T > (
this **DataReader**< T > *reader*) [static]

Provides an infinite asynchronous enumerable that returns new samples from a reader as they become available.

Parameters

reader	The reader where the samples come from

Template Parameters

T	The reader's topic-type

When an element of the returned `IAsyncEnumerable` is requested, if the reader has any data available, it returns it immediately. Otherwise it awaits until new data is available.

The simplest way to use this function is an infinite loop that prints the data as the reader receives it:

```
await foreach (var sample in reader.TakeAsync())
{
    if (sample.Info.ValidData)
    {
        Console.WriteLine($"Received data: {sample.Data}");
    }
}
```

Warning

Each element (LoanedSample<T>) is only valid until the enumerable advances to the next element. The sample or any reference to the sample's fields can no longer be accessed after the enumerable moves to the next sample.

The enumerable can receive a cancellation token, for example:

```
var cancel = new CancellationTokenSource();
// A:
await foreach (var sample in reader.TakeAsync().WithCancellation(cancel.Token))
{
    ...
}
// B:
cancel.Cancel();
```

Warning

The disposal of the **DataReader** (p. 243) or the **Subscriber** (p. 1090) and DomainParticipant that contains it may fail while the iterator is active. Use a cancellation token to ensure TakeAsync() finishes before disposing said entities.

See also

Reading data asynchronously (p. 47) for more code examples.

9.41.2.2 TakeAsync< T >() [2/2]

```
static IAsyncEnumerable<  LoanedSample< T > > Rti.Dds.Subscription.DataReaderAsyncExtensions.↩
TakeAsync< T > (
            this  Selector< T > selector )  [static]
```

Provides an infinite asynchronous enumerable that returns new samples from a reader selector as they become available.

Parameters

selector	A selector created with **DataReader<T>.Select** (p. 245)

Template Parameters

T	The reader's topic-type

See also

TakeAsync<T>(DataReader<T>)

9.41.2.3 ValidData< T >()

```
static async IAsyncEnumerable< T > Rti.Dds.Subscription.DataReaderAsyncExtensions.ValidData< T >
(
            this IAsyncEnumerable<  LoanedSample< T > > samples,
            [EnumeratorCancellation] CancellationToken cancellationToken = default )  [inline],
[static]
```

Filters a sequence of samples, returning valid data only.

Parameters

samples	A IAsyncEnumerable of loaned samples: the result of TakeAsync()
cancellationToken	A cancellation token, automatically set by the compiler when `.WithCancellation()` is used.

Returns

A new IAsyncEnumerable such that, for each LoanedSample<T> `s` in `samples`, it returns `s.Data` only if `s.Info.ValidData` is `true`.

Just like TakeAsync, only the current `T` object in the iteration is valid at a given moment; as soon as the iterator advances, that object becomes invalid and can no longer be accessed (unless its copied)

9.42 Rti.Dds.Core.Status.DataReaderCacheStatus Class Reference

The status of the reader's cache.

Inherits IEquatable< DataReaderCacheStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataReaderCacheStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- long **SampleCountPeak** [get]

  The highest number of samples in the reader's queue over the lifetime of the reader.
- long **SampleCount** [get]

  The number of samples in the reader's queue.
- long **OldSourceTimestampDroppedSampleCount** [get]

  *The number of samples dropped as a result of receiving a sample older than the last one, using **Policy.Destination↩ OrderKind.BySourceTimestamp** (p. 92).*
- long **ToleranceSourceTimestampDroppedSampleCount** [get]

  *The number of samples dropped as a result of receiving a sample in the future, using **Policy.DestinationOrderKind.↩ BySourceTimestamp** (p. 92).*
- long **OwnershipDroppedSampleCount** [get]

  The number of samples dropped as a result of receiving a sample from a DataWriter with a lower strength, using Exclusive Ownership.
- long **ContentFilterDroppedSampleCount** [get]

  *The number of user samples filtered by the DataReader due to Content-Filtered **Topics** (p. 118).*
- long **TimeBasedFilterDroppedSampleCount** [get]

  *The number of user samples filtered by the DataReader due to **Policy.TimeBasedFilter** (p. 1141).*
- long **ExpiredDroppedSampleCount** [get]

  *The number of samples expired by the DataReader due to **Policy.Lifespan** (p. 700) or the autopurge sample delays.*
- long **VirtualDuplicateDroppedSampleCount** [get]

  The number of virtual duplicate samples dropped by the DataReader. A sample is a virtual duplicate if it has the same identity (Virtual Writer GUID and Virtual Sequence Number) as a previously received sample.
- long **ReplacedDroppedSampleCount** [get]

  *The number of samples replaced by the DataReader due to **Policy.HistoryKind.KeepLast** (p. 95) replacement.*
- long **WriterRemovedBatchSampleDroppedSampleCount** [get]

  The number of batch samples received by the DataReader that were marked as removed by the DataWriter.
- long **TotalSamplesDroppedByInstanceReplacement** [get]

  *The number of samples with sample state **Omg.Dds.Subscription.SampleState.NotRead** (p. 65) that were dropped when removing an instance due to instance replacement. See **Policy.DataReaderResourceLimits.Instance↩ Replacement** (p. 311) for more details about when instances are replaced.*
- long **AliveInstanceCount** [get]

  *The number of instances in the DataReader's queue with an instance state equal to **Omg.Dds.Subscription.Instance↩ State.Alive** (p. 66).*
- long **AliveInstanceCountPeak** [get]

  *The highest value of **AliveInstanceCount** (p. 255) over the lifetime of the DataReader.*

- long **NoWritersInstanceCount** [get]

  *The number of instances in the DataReader's queue with an instance state equal to **Omg.Dds.Subscription.Instance↩ State.NotAliveNoWriters** (p. 66).*
- long **NoWritersInstanceCountPeak** [get]

  *The highest value of **NoWritersInstanceCount** (p. 256) over the lifetime of the DataReader.*
- long **DisposedInstanceCount** [get]

  *The number of instances in the DataReader's queue with an instance state equal to **Omg.Dds.Subscription.Instance↩ State.NotAliveDisposed** (p. 66).*
- long **DisposedInstanceCountPeak** [get]

  *The highest value of **DisposedInstanceCount** (p. 256) over the lifetime of the DataReader.*
- long **DetachedInstanceCount** [get]

  The number of minimal instance states currently being maintained in the DataReader's queue.
- long **DetachedInstanceCountPeak** [get]

  *The highest value of **DetachedInstanceCount** (p. 256) over the lifetime of the DataReader.*
- long **CompressedSampleCount** [get]

  The number of received compressed samples by a DataWriter.

9.42.1 Detailed Description

The status of the reader's cache.

The full documentation is available in the C API: DDS_DataReaderCacheStatus

9.42.2 Member Function Documentation

9.42.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.DataReaderCacheStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.42.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.DataReaderCacheStatus.Equals (
            object other )
```

Compares for equality

9.42.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.DataReaderCacheStatus.Equals (
            DataReaderCacheStatus other )  [inline]
```

Compares for equality

9.42.2.4 ToString()

```
override string Rti.Dds.Core.Status.DataReaderCacheStatus.ToString ( )
```

Returns a readable summary of the status

9.42.3 Property Documentation

9.42.3.1 SampleCountPeak

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.SampleCountPeak  [get]
```

The highest number of samples in the reader's queue over the lifetime of the reader.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_sample_count_peak

9.42.3.2 SampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.SampleCount  [get]
```

The number of samples in the reader's queue.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_sample_count

9.42.3.3 OldSourceTimestampDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.OldSourceTimestampDroppedSampleCount  [get]
```

The number of samples dropped as a result of receiving a sample older than the last one, using **Policy.Destination↩ OrderKind.BySourceTimestamp** (p. 92).

The full documentation is available in the C API: DDS_DataReaderCacheStatus_old_source_↩ timestamp_dropped_sample_count

9.42.3.4 ToleranceSourceTimestampDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.ToleranceSourceTimestampDroppedSampleCount [get]
```

The number of samples dropped as a result of receiving a sample in the future, using **Policy.DestinationOrderKind.↩ BySourceTimestamp** (p. 92).

The full documentation is available in the C API: DDS_DataReaderCacheStatus_tolerance_source_↩ timestamp_dropped_sample_count

9.42.3.5 OwnershipDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.OwnershipDroppedSampleCount [get]
```

The number of samples dropped as a result of receiving a sample from a DataWriter with a lower strength, using Exclusive Ownership.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_ownership_dropped↩ _sample_count

9.42.3.6 ContentFilterDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.ContentFilterDroppedSampleCount [get]
```

The number of user samples filtered by the DataReader due to Content-Filtered **Topics** (p. 118).

The full documentation is available in the C API: DDS_DataReaderCacheStatus_content_filter_↩ dropped_sample_count

9.42.3.7 TimeBasedFilterDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.TimeBasedFilterDroppedSampleCount [get]
```

The number of user samples filtered by the DataReader due to **Policy.TimeBasedFilter** (p. 1141).

The full documentation is available in the C API: DDS_DataReaderCacheStatus_time_based_filter↩ _dropped_sample_count

9.42.3.8 ExpiredDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.ExpiredDroppedSampleCount [get]
```

The number of samples expired by the DataReader due to **Policy.Lifespan** (p. 700) or the autopurge sample delays.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_expired_dropped_↩ sample_count

9.42.3.9 VirtualDuplicateDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.VirtualDuplicateDroppedSampleCount [get]
```

The number of virtual duplicate samples dropped by the DataReader. A sample is a virtual duplicate if it has the same identity (Virtual Writer GUID and Virtual Sequence Number) as a previously received sample.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_virtual_duplicate_dropped_sample_count

9.42.3.10 ReplacedDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.ReplacedDroppedSampleCount [get]
```

The number of samples replaced by the DataReader due to **Policy.HistoryKind.KeepLast** (p. 95) replacement.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_replaced_dropped_sample_count

9.42.3.11 WriterRemovedBatchSampleDroppedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.WriterRemovedBatchSampleDroppedSampleCount [get]
```

The number of batch samples received by the DataReader that were marked as removed by the DataWriter.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_writer_removed_batch_sample_dropped_sample_count

9.42.3.12 TotalSamplesDroppedByInstanceReplacement

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.TotalSamplesDroppedByInstanceReplacement [get]
```

The number of samples with sample state **Omg.Dds.Subscription.SampleState.NotRead** (p. 65) that were dropped when removing an instance due to instance replacement. See **Policy.DataReaderResourceLimits.InstanceReplacement** (p. 311) for more details about when instances are replaced.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_total_samples_dropped_by_instance_replacement

9.42.3.13 AliveInstanceCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.AliveInstanceCount [get]
```

The number of instances in the DataReader's queue with an instance state equal to **Omg.Dds.Subscription.InstanceState.Alive** (p. 66).

The full documentation is available in the C API: DDS_DataReaderCacheStatus_alive_instance_count

9.42.3.14 AliveInstanceCountPeak

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.AliveInstanceCountPeak [get]
```

The highest value of **AliveInstanceCount** (p. 255) over the lifetime of the DataReader.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_alive_instance_count_peak

9.42.3.15 NoWritersInstanceCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.NoWritersInstanceCount [get]
```

The number of instances in the DataReader's queue with an instance state equal to **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66).

The full documentation is available in the C API: DDS_DataReaderCacheStatus_no_writers_instance_count

9.42.3.16 NoWritersInstanceCountPeak

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.NoWritersInstanceCountPeak [get]
```

The highest value of **NoWritersInstanceCount** (p. 256) over the lifetime of the DataReader.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_no_writers_instance_count_peak

9.42.3.17 DisposedInstanceCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.DisposedInstanceCount [get]
```

The number of instances in the DataReader's queue with an instance state equal to **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66).

The full documentation is available in the C API: DDS_DataReaderCacheStatus_disposed_instance_count

9.42.3.18 DisposedInstanceCountPeak

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.DisposedInstanceCountPeak [get]
```

The highest value of **DisposedInstanceCount** (p. 256) over the lifetime of the DataReader.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_disposed_instance_count_peak

9.42.3.19 DetachedInstanceCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.DetachedInstanceCount [get]
```

The number of minimal instance states currently being maintained in the DataReader's queue.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_detached_instance_count

9.42.3.20 DetachedInstanceCountPeak

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.DetachedInstanceCountPeak [get]
```

The highest value of **DetachedInstanceCount** (p. 256) over the lifetime of the DataReader.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_detached_instance_count_peak

9.42.3.21 CompressedSampleCount

```
long Rti.Dds.Core.Status.DataReaderCacheStatus.CompressedSampleCount [get]
```

The number of received compressed samples by a DataWriter.

The full documentation is available in the C API: DDS_DataReaderCacheStatus_compressed_sample_count

9.43 Rti.Dds.Core.Policy.DataReaderProtocol Class Reference

Configures Subscription.DataReader<T>-specific aspects of the RTPS protocol.

Inherits IEquatable< DataReaderProtocol >.

Public Member Functions

- **DataReaderProtocol With** (Action< **DataReaderProtocolBuilder** > build)

  *Creates a new **DataReaderProtocol** (p. 257) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataReaderProtocol** other)

  Compares for equality

Properties

- **Guid VirtualGuid** [get]

  The virtual GUID (Global Unique Identifier).
- uint **RtpsObjectId** [get]

  The RTPS Object ID.
- bool **ExpectsInlineQos** [get]

  Specifies whether this DataReader expects inline QoS with every sample.
- bool **DisablePositiveAcks** [get]

  Whether the reader sends positive acknowledgements to writers.
- bool **PropagateDisposeOfUnregisteredInstances** [get]

  *Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.*
- bool **PropagateUnregisterOfDisposedInstances** [get]

  *Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.*
- **RtpsReliableReaderProtocol RtpsReliableReader** [get]

  *RTPS protocol-related configuration settings for the RTPS reliable reader associated with a Subscription.DataReader<↩ T>. This parameter only has effect if the reader is configured with **ReliabilityKind.Reliable** (p. 99) **Reliability** (p. 940).*
- static **DataReaderProtocol Default** [get]

  *Singleton containing the default value of a **DataReaderProtocol** (p. 257)*

9.43.1 Detailed Description

Configures Subscription.DataReader<T>-specific aspects of the RTPS protocol.

The full documentation is available in the C API: `DDS_DataReaderProtocolQosPolicy_virtual_guid`

9.43.2 Member Function Documentation

9.43.2.1 With()

```
DataReaderProtocol Rti.Dds.Core.Policy.DataReaderProtocol.With (
            Action<  DataReaderProtocolBuilder > build )  [inline]
```

Creates a new **DataReaderProtocol** (p. 257) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DataReaderProtocol** (p. 257).

Returns

A new **DataReaderProtocol** (p. 257) with the changes applied by the Action

9.43.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DataReaderProtocol.GetHashCode ( )  [inline]
```

Gets the hash code

9.43.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DataReaderProtocol.Equals (
            object other )
```

Compares for equality

9.43.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DataReaderProtocol.Equals (
             DataReaderProtocol other )  [inline]
```

Compares for equality

9.43.3 Property Documentation

9.43.3.1 VirtualGuid

```
Guid Rti.Dds.Core.Policy.DataReaderProtocol.VirtualGuid  [get]
```

The virtual GUID (Global Unique Identifier).

The full documentation is available in the C API: `DDS_DataReaderProtocolQosPolicy_virtual_guid`

9.43.3.2 RtpsObjectId

```
uint Rti.Dds.Core.Policy.DataReaderProtocol.RtpsObjectId [get]
```

The RTPS Object ID.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_rtps_object_id

9.43.3.3 ExpectsInlineQos

```
bool Rti.Dds.Core.Policy.DataReaderProtocol.ExpectsInlineQos [get]
```

Specifies whether this DataReader expects inline QoS with every sample.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_expects_inline_qos

9.43.3.4 DisablePositiveAcks

```
bool Rti.Dds.Core.Policy.DataReaderProtocol.DisablePositiveAcks [get]
```

Whether the reader sends positive acknowledgements to writers.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_disable_positive_acks

9.43.3.5 PropagateDisposeOfUnregisteredInstances

```
bool Rti.Dds.Core.Policy.DataReaderProtocol.PropagateDisposeOfUnregisteredInstances [get]
```

Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_propagate_dispose_of_unregistered_instances

9.43.3.6 PropagateUnregisterOfDisposedInstances

```
bool Rti.Dds.Core.Policy.DataReaderProtocol.PropagateUnregisterOfDisposedInstances [get]
```

Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_propagate_unregister_of_disposed_instances

9.43.3.7 RtpsReliableReader

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.DataReaderProtocol.RtpsReliableReader [get]

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a Subscription.Data↩ Reader<T>. This parameter only has effect if the reader is configured with **ReliabilityKind.Reliable** (p. 99) **Reliability** (p. 940).

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_rtps_↩ reliable_reader

9.43.3.8 Default

DataReaderProtocol Rti.Dds.Core.Policy.DataReaderProtocol.Default [static], [get]

Singleton containing the default value of a **DataReaderProtocol** (p. 257)

9.44 Rti.Dds.Core.Policy.DataReaderProtocolBuilder Class Reference

A modifiable type used to create an immutable **DataReaderProtocol** (p. 257)

Public Member Functions

- **DataReaderProtocolBuilder** (**DataReaderProtocol** data)

  Creates a builder with the values of an existing immutable instance
- **DataReaderProtocol Build** ()

  *Creates a new **DataReaderProtocol** (p. 257) immutable object from this one.*

Properties

- **Guid VirtualGuid** [get, set]

  The virtual GUID (Global Unique Identifier).
- uint **RtpsObjectId** [get, set]

  The RTPS Object ID.
- bool **ExpectsInlineQos** [get, set]

  Specifies whether this DataReader expects inline QoS with every sample.
- bool **DisablePositiveAcks** [get, set]

  Whether the reader sends positive acknowledgements to writers.
- bool **PropagateDisposeOfUnregisteredInstances** [get, set]

  *Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.*
- bool **PropagateUnregisterOfDisposedInstances** [get, set]

  *Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.*
- **RtpsReliableReaderProtocolBuilder RtpsReliableReader** [get, set]

  *RTPS protocol-related configuration settings for the RTPS reliable reader associated with a Subscription.DataReader<↩ T>. This parameter only has effect if the reader is configured with **ReliabilityKind.Reliable** (p. 99) **Reliability** (p. 940).*

9.44.1 Detailed Description

A modifiable type used to create an immutable **DataReaderProtocol** (p. 257)

9.44.2 Constructor & Destructor Documentation

9.44.2.1 DataReaderProtocolBuilder()

```
Rti.Dds.Core.Policy.DataReaderProtocolBuilder.DataReaderProtocolBuilder (
            DataReaderProtocol data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.44.3 Member Function Documentation

9.44.3.1 Build()

```
DataReaderProtocol Rti.Dds.Core.Policy.DataReaderProtocolBuilder.Build ( )
```

Creates a new **DataReaderProtocol** (p. 257) immutable object from this one.

9.44.4 Property Documentation

9.44.4.1 VirtualGuid

```
Guid Rti.Dds.Core.Policy.DataReaderProtocolBuilder.VirtualGuid [get], [set]
```

The virtual GUID (Global Unique Identifier).

The full documentation is available in the C API: `DDS_DataReaderProtocolQosPolicy_virtual_guid`

9.44.4.2 RtpsObjectId

```
uint Rti.Dds.Core.Policy.DataReaderProtocolBuilder.RtpsObjectId [get], [set]
```

The RTPS Object ID.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_rtps_object_id

9.44.4.3 ExpectsInlineQos

```
bool Rti.Dds.Core.Policy.DataReaderProtocolBuilder.ExpectsInlineQos [get], [set]
```

Specifies whether this DataReader expects inline QoS with every sample.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_expects_inline_qos

9.44.4.4 DisablePositiveAcks

```
bool Rti.Dds.Core.Policy.DataReaderProtocolBuilder.DisablePositiveAcks [get], [set]
```

Whether the reader sends positive acknowledgements to writers.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_disable_positive_acks

9.44.4.5 PropagateDisposeOfUnregisteredInstances

```
bool Rti.Dds.Core.Policy.DataReaderProtocolBuilder.PropagateDisposeOfUnregisteredInstances [get],
[set]
```

Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_propagate_dispose_of_unregistered_instances

9.44.4.6 PropagateUnregisterOfDisposedInstances

```
bool Rti.Dds.Core.Policy.DataReaderProtocolBuilder.PropagateUnregisterOfDisposedInstances [get],
[set]
```

Indicates whether or not an instance can move to the **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) state without being in the **Omg.Dds.Subscription.InstanceState.Alive** (p. 66) state.

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_propagate_unregister_of_disposed_instances

9.44.4.7 RtpsReliableReader

RtpsReliableReaderProtocolBuilder Rti.Dds.Core.Policy.DataReaderProtocolBuilder.RtpsReliable↩
Reader [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a Subscription.Data↩
Reader<T>. This parameter only has effect if the reader is configured with **ReliabilityKind.Reliable** (p. 99) **Reliability** (p. 940).

The full documentation is available in the C API: DDS_DataReaderProtocolQosPolicy_rtps_↩
reliable_reader

9.45 Rti.Dds.Core.Status.DataReaderProtocolStatus Class Reference

The status of a reader's internal protocol related metrics, like the number of samples received and rejected; and status of wire protocol traffic.

Inherits IEquatable< DataReaderProtocolStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataReaderProtocolStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< long > **ReceivedSampleCount** [get]

  The number of samples received by a DataReader.
- **EventCount**< long > **ReceivedSampleBytes** [get]

  The number of bytes received by a DataReader.
- **EventCount**< long > **DuplicateSampleCount** [get]

  The number of samples from a remote DataWriter received, not for the first time, by a local DataReader.
- **EventCount**< long > **DuplicateSampleBytes** [get]

  The number of bytes of samples from a remote DataWriter received, not for the first time, by a local DataReader.
- **EventCount**< long > **ReceivedHeartbeatCount** [get]

  The number of Heartbeats from a remote DataWriter received by a local DataReader.
- **EventCount**< long > **ReceivedHeartbeatBytes** [get]

  The number of bytes of Heartbeats from a remote DataWriter received by a local DataReader.
- **EventCount**< long > **SentAckCount** [get]

The number of ACKs sent from a local DataReader to a matching remote DataWriter.

- **EventCount**< long > **SentAckBytes** [get]

  The number of bytes of ACKs sent from a local DataReader to a matching remote DataWriter.
- **EventCount**< long > **SentNackCount** [get]

  The number of NACKs sent from a local DataReader to a matching remote DataWriter.
- **EventCount**< long > **SentNackBytes** [get]

  The number of bytes of NACKs sent from a local DataReader to a matching remote DataWriter.
- **EventCount**< long > **ReceivedGapCount** [get]

  The number of GAPs received from remote DataWriter to this DataReader.
- **EventCount**< long > **ReceivedGapBytes** [get]

  The number of bytes of GAPs received from remote DataWriter to this DataReader.
- **EventCount**< long > **RejectedSampleCount** [get]

  The number of times a sample is rejected because it cannot be accepted by a reliable DataReader.
- long **FirstAvailableSampleSequenceNumber** [get]

  Sequence number of the first available sample in a matched DataWriters reliability queue.
- long **LastAvailableSampleSequenceNumber** [get]

  Sequence number of the last available sample in a matched Datawriter's reliability queue.
- long **LastCommittedSampleSequenceNumber** [get]

  Sequence number of the newest sample received from the matched DataWriter committed to the DataReader's queue.
- int **UncommittedSampleCount** [get]

  Number of received samples that are not yet available to be read or taken, due to being received out of order.
- long **OutOfRangeRejectedSampleCount** [get]

  The number of samples dropped by the DataReader due to received window is full and the sample is out-of-order.
- long **ReceivedFragmentCount** [get]

  The number of DATA_FRAG messages that have been received by this DataReader.
- long **DroppedFragmentCount** [get]

  The number of DATA_FRAG messages that have been dropped by a DataReader.
- long **ReassembledSampleCount** [get]

  The number of fragmented samples that have been reassembled by a DataReader.
- long **SentNackFragmentCount** [get]

  The number of NACK fragments that have been sent from a DataReader to a DataWriter.
- long **SentNackFragmentBytes** [get]

  The number of NACK fragment bytes that have been sent from a DataReader to a DataWriter.

9.45.1 Detailed Description

The status of a reader's internal protocol related metrics, like the number of samples received and rejected; and status of wire protocol traffic.

The full documentation is available in the C API: `DDS_DataReaderProtocolStatus`

9.45.2 Member Function Documentation

9.45.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.DataReaderProtocolStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.45.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.DataReaderProtocolStatus.Equals (
            object other )
```

Compares for equality

9.45.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.DataReaderProtocolStatus.Equals (
             DataReaderProtocolStatus other )  [inline]
```

Compares for equality

9.45.2.4 ToString()

```
override string Rti.Dds.Core.Status.DataReaderProtocolStatus.ToString ( )
```

Returns a readable summary of the status

9.45.3 Property Documentation

9.45.3.1 ReceivedSampleCount

```
EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.ReceivedSampleCount  [get]
```

The number of samples received by a DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_received_↩ sample_count

9.45.3.2 ReceivedSampleBytes

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.ReceivedSampleBytes [get]

The number of bytes received by a DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_received_↩ sample_bytes

9.45.3.3 DuplicateSampleCount

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.DuplicateSampleCount [get]

The number of samples from a remote DataWriter received, not for the first time, by a local DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_duplicate_↩ sample_count

9.45.3.4 DuplicateSampleBytes

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.DuplicateSampleBytes [get]

The number of bytes of samples from a remote DataWriter received, not for the first time, by a local DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_duplicate_↩ sample_bytes

9.45.3.5 ReceivedHeartbeatCount

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.ReceivedHeartbeatCount [get]

The number of Heartbeats from a remote DataWriter received by a local DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_received_↩ heartbeat_count

9.45.3.6 ReceivedHeartbeatBytes

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.ReceivedHeartbeatBytes [get]

The number of bytes of Heartbeats from a remote DataWriter received by a local DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_received_↩ heartbeat_bytes

9.45.3.7 SentAckCount

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.SentAckCount [get]

The number of ACKs sent from a local DataReader to a matching remote DataWriter.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_sent_ack_count

9.45.3.8 SentAckBytes

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.SentAckBytes [get]

The number of bytes of ACKs sent from a local DataReader to a matching remote DataWriter.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_sent_ack_bytes

9.45.3.9 SentNackCount

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.SentNackCount [get]

The number of NACKs sent from a local DataReader to a matching remote DataWriter.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_sent_nack_count

9.45.3.10 SentNackBytes

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.SentNackBytes [get]

The number of bytes of NACKs sent from a local DataReader to a matching remote DataWriter.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_sent_nack_bytes

9.45.3.11 ReceivedGapCount

EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.ReceivedGapCount [get]

The number of GAPs received from remote DataWriter to this DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_received_gap_↩count

9.45.3.12 ReceivedGapBytes

```
EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.ReceivedGapBytes [get]
```

The number of bytes of GAPs received from remote DataWriter to this DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_received_gap_bytes

9.45.3.13 RejectedSampleCount

```
EventCount<long> Rti.Dds.Core.Status.DataReaderProtocolStatus.RejectedSampleCount [get]
```

The number of times a sample is rejected because it cannot be accepted by a reliable DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_rejected_sample_count

9.45.3.14 FirstAvailableSampleSequenceNumber

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.FirstAvailableSampleSequenceNumber [get]
```

Sequence number of the first available sample in a matched DataWriters reliability queue.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_first_available_sample_sequence_number

9.45.3.15 LastAvailableSampleSequenceNumber

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.LastAvailableSampleSequenceNumber [get]
```

Sequence number of the last available sample in a matched Datawriter's reliability queue.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_last_available_sample_sequence_number

9.45.3.16 LastCommittedSampleSequenceNumber

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.LastCommittedSampleSequenceNumber [get]
```

Sequence number of the newest sample received from the matched DataWriter committed to the DataReader's queue.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_last_committed_sample_sequence_number

9.45.3.17 UncommittedSampleCount

```
int Rti.Dds.Core.Status.DataReaderProtocolStatus.UncommittedSampleCount [get]
```

Number of received samples that are not yet available to be read or taken, due to being received out of order.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_uncommitted_↩ sample_count

9.45.3.18 OutOfRangeRejectedSampleCount

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.OutOfRangeRejectedSampleCount [get]
```

The number of samples dropped by the DataReader due to received window is full and the sample is out-of-order.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_out_of_range_↩ rejected_sample_count

9.45.3.19 ReceivedFragmentCount

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.ReceivedFragmentCount [get]
```

The number of DATA_FRAG messages that have been received by this DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_received_↩ fragment_count

9.45.3.20 DroppedFragmentCount

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.DroppedFragmentCount [get]
```

The number of DATA_FRAG messages that have been dropped by a DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_dropped_↩ fragment_count

9.45.3.21 ReassembledSampleCount

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.ReassembledSampleCount [get]
```

The number of fragmented samples that have been reassembled by a DataReader.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_reassembled_↩ sample_count

9.45.3.22 SentNackFragmentCount

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.SentNackFragmentCount [get]
```

The number of NACK fragments that have been sent from a DataReader to a DataWriter.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_sent_nack_↩ fragment_count

9.45.3.23 SentNackFragmentBytes

```
long Rti.Dds.Core.Status.DataReaderProtocolStatus.SentNackFragmentBytes [get]
```

The number of NACK fragment bytes that have been sent from a DataReader to a DataWriter.

The full documentation is available in the C API: DDS_DataReaderProtocolStatus_sent_nack_↩ fragment_bytes

9.46 Rti.Dds.Subscription.DataReaderQos Class Reference

Container of the QoS policies that a DataReader<T> supports

Inherits IEquatable< DataReaderQos >.

Public Member Functions

- **DataReaderQos WithDurability** (**Durability** policy)
  *Creates an instance with a new **Durability** (p. 297) policy.*
- **DataReaderQos WithDurability** (Action< **DurabilityBuilder** > build)
  *Creates a new instance with a new **Durability** (p. 297) policy as configured by a build action*
- **DataReaderQos WithDeadline** (**Deadline** policy)
  *Creates an instance with a new **Deadline** (p. 297) policy.*
- **DataReaderQos WithDeadline** (Action< **DeadlineBuilder** > build)
  *Creates a new instance with a new **Deadline** (p. 297) policy as configured by a build action*
- **DataReaderQos WithLatencyBudget** (**LatencyBudget** policy)
  *Creates an instance with a new **LatencyBudget** (p. 297) policy.*
- **DataReaderQos WithLatencyBudget** (Action< **LatencyBudgetBuilder** > build)
  *Creates a new instance with a new **LatencyBudget** (p. 297) policy as configured by a build action*
- **DataReaderQos WithLiveliness** (**Liveliness** policy)
  *Creates an instance with a new **Liveliness** (p. 297) policy.*
- **DataReaderQos WithLiveliness** (Action< **LivelinessBuilder** > build)
  *Creates a new instance with a new **Liveliness** (p. 297) policy as configured by a build action*
- **DataReaderQos WithReliability** (**Reliability** policy)
  *Creates an instance with a new **Reliability** (p. 297) policy.*
- **DataReaderQos WithReliability** (Action< **ReliabilityBuilder** > build)

*Creates a new instance with a new **Reliability** (p. 297) policy as configured by a build action*

- **DataReaderQos WithDestinationOrder** (**DestinationOrder** policy)

  *Creates an instance with a new **DestinationOrder** (p. 298) policy.*
- **DataReaderQos WithDestinationOrder** (Action< **DestinationOrderBuilder** > build)

  *Creates a new instance with a new **DestinationOrder** (p. 298) policy as configured by a build action*
- **DataReaderQos WithHistory** (**History** policy)

  *Creates an instance with a new **History** (p. 298) policy.*
- **DataReaderQos WithHistory** (Action< **HistoryBuilder** > build)

  *Creates a new instance with a new **History** (p. 298) policy as configured by a build action*
- **DataReaderQos WithResourceLimits** (**ResourceLimits** policy)

  *Creates an instance with a new **ResourceLimits** (p. 298) policy.*
- **DataReaderQos WithResourceLimits** (Action< **ResourceLimitsBuilder** > build)

  *Creates a new instance with a new **ResourceLimits** (p. 298) policy as configured by a build action*
- **DataReaderQos WithUserData** (**UserData** policy)

  *Creates an instance with a new **UserData** (p. 298) policy.*
- **DataReaderQos WithUserData** (Action< ImmutableList< byte >.Builder > build)

  *Creates a new instance with a new **UserData** (p. 298) policy as configured by a build action*
- **DataReaderQos WithOwnership** (**Ownership** policy)

  *Creates an instance with a new **Ownership** (p. 298) policy.*
- **DataReaderQos WithOwnership** (Action< **OwnershipBuilder** > build)

  *Creates a new instance with a new **Ownership** (p. 298) policy as configured by a build action*
- **DataReaderQos WithTimeBasedFilter** (**TimeBasedFilter** policy)

  *Creates an instance with a new **TimeBasedFilter** (p. 298) policy.*
- **DataReaderQos WithTimeBasedFilter** (Action< **TimeBasedFilterBuilder** > build)

  *Creates a new instance with a new **TimeBasedFilter** (p. 298) policy as configured by a build action*
- **DataReaderQos WithReaderDataLifecycle** (**ReaderDataLifecycle** policy)

  *Creates an instance with a new **ReaderDataLifecycle** (p. 299) policy.*
- **DataReaderQos WithReaderDataLifecycle** (Action< **ReaderDataLifecycleBuilder** > build)

  *Creates a new instance with a new **ReaderDataLifecycle** (p. 299) policy as configured by a build action*
- **DataReaderQos WithRepresentation** (**DataRepresentation** policy)

  Creates an instance with a new DataRepresentation policy.
- **DataReaderQos WithRepresentation** (Action< **DataRepresentationBuilder** > build)

  Creates a new instance with a new DataRepresentation policy as configured by a build action
- **DataReaderQos WithTypeConsistency** (**TypeConsistencyEnforcement** policy)

  Creates an instance with a new TypeConsistencyEnforcement policy.
- **DataReaderQos WithTypeConsistency** (Action< **TypeConsistencyEnforcementBuilder** > build)

  Creates a new instance with a new TypeConsistencyEnforcement policy as configured by a build action
- **DataReaderQos WithDataTags** (**DataTags** policy)

  *Creates an instance with a new **DataTags** (p. 299) policy.*
- **DataReaderQos WithDataTags** (Action< ImmutableDictionary< string, string >.Builder > build)

  *Creates a new instance with a new **DataTags** (p. 299) policy as configured by a build action*
- **DataReaderQos WithReaderResourceLimits** (**DataReaderResourceLimits** policy)

  Creates an instance with a new DataReaderResourceLimits policy.
- **DataReaderQos WithReaderResourceLimits** (Action< **DataReaderResourceLimitsBuilder** > build)

  Creates a new instance with a new DataReaderResourceLimits policy as configured by a build action
- **DataReaderQos WithProtocol** (**DataReaderProtocol** policy)

  Creates an instance with a new DataReaderProtocol policy.

- **DataReaderQos WithProtocol** (Action< **DataReaderProtocolBuilder** > build)

  Creates a new instance with a new DataReaderProtocol policy as configured by a build action
- **DataReaderQos WithTransportSelection** (**TransportSelection** policy)

  *Creates an instance with a new **TransportSelection** (*p. *300) policy.*
- **DataReaderQos WithTransportSelection** (Action< **TransportSelectionBuilder** > build)

  *Creates a new instance with a new **TransportSelection** (*p. *300) policy as configured by a build action*
- **DataReaderQos WithUnicast** (**TransportUnicast** policy)

  Creates an instance with a new TransportUnicast policy.
- **DataReaderQos WithUnicast** (Action< ImmutableList< **TransportUnicastSettings** >.Builder > build)

  Creates a new instance with a new TransportUnicast policy as configured by a build action
- **DataReaderQos WithMulticast** (**TransportMulticast** policy)

  Creates an instance with a new TransportMulticast policy.
- **DataReaderQos WithMulticast** (Action< **TransportMulticastBuilder** > build)

  Creates a new instance with a new TransportMulticast policy as configured by a build action
- **DataReaderQos WithProperty** (**Property** policy)

  *Creates an instance with a new **Property** (*p. *300) policy.*
- **DataReaderQos WithProperty** (Action< ImmutableDictionary< string, **Property.Entry** >.Builder > build)

  *Creates a new instance with a new **Property** (*p. *300) policy as configured by a build action*
- **DataReaderQos WithService** (**Service** policy)

  *Creates an instance with a new **Service** (*p. *300) policy.*
- **DataReaderQos WithService** (Action< **ServiceBuilder** > build)

  *Creates a new instance with a new **Service** (*p. *300) policy as configured by a build action*
- **DataReaderQos WithAvailability** (**Availability** policy)

  *Creates an instance with a new **Availability** (*p. *300) policy.*
- **DataReaderQos WithAvailability** (Action< **AvailabilityBuilder** > build)

  *Creates a new instance with a new **Availability** (*p. *300) policy as configured by a build action*
- **DataReaderQos WithSubscriptionName** (**EntityName** policy)

  Creates an instance with a new EntityName policy.
- **DataReaderQos WithSubscriptionName** (Action< **EntityNameBuilder** > build)

  Creates a new instance with a new EntityName policy as configured by a build action
- **DataReaderQos WithTransportPriority** (**TransportPriority** policy)

  *Creates an instance with a new **TransportPriority** (*p. *301) policy.*
- **DataReaderQos WithTransportPriority** (Action< **TransportPriorityBuilder** > build)

  *Creates a new instance with a new **TransportPriority** (*p. *301) policy as configured by a build action*
- **DataReaderQos WithTypeSupport** (**TypeSupport** policy)

  *Creates an instance with a new **TypeSupport** (*p. *301) policy.*
- **DataReaderQos WithTypeSupport** (Action< **TypeSupportBuilder** > build)

  *Creates a new instance with a new **TypeSupport** (*p. *301) policy as configured by a build action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataReaderQos** other)

  Compares for equality
- override string **ToString** ()

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintFormat** format)

Returns an XML representation of the QoS object.

- string **ToString** (**DataReaderQos** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.

- string **ToString** (**QosPrintAll** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.

Static Public Member Functions

- static **DataReaderQos FromTopicQos** (**TopicQos** topicQos)

  *Creates a **DataReaderQos** (p. 271) object with the policies of a TopicQos object.*

Properties

- **Durability Durability** [get]

  *Gets the **Durability** (p. 297) policy.*

- **Deadline Deadline** [get]

  *Gets the **Deadline** (p. 297) policy.*

- **LatencyBudget LatencyBudget** [get]

  *Gets the **LatencyBudget** (p. 297) policy.*

- **Liveliness Liveliness** [get]

  *Gets the **Liveliness** (p. 297) policy.*

- **Reliability Reliability** [get]

  *Gets the **Reliability** (p. 297) policy.*

- **DestinationOrder DestinationOrder** [get]

  *Gets the **DestinationOrder** (p. 298) policy.*

- **History History** [get]

  *Gets the **History** (p. 298) policy.*

- **ResourceLimits ResourceLimits** [get]

  *Gets the **ResourceLimits** (p. 298) policy.*

- **UserData UserData** [get]

  *Gets the **UserData** (p. 298) policy.*

- **Ownership Ownership** [get]

  *Gets the **Ownership** (p. 298) policy.*

- **TimeBasedFilter TimeBasedFilter** [get]

  *Gets the **TimeBasedFilter** (p. 298) policy.*

- **ReaderDataLifecycle ReaderDataLifecycle** [get]

  *Gets the **ReaderDataLifecycle** (p. 299) policy.*

- **DataRepresentation Representation** [get]

  Gets the DataRepresentation policy.

- **TypeConsistencyEnforcement TypeConsistency** [get]

  Gets the TypeConsistencyEnforcement policy.

- **DataTags DataTags** [get]

  Gets the TypeConsistencyEnforcement policy.

- **DataReaderResourceLimits ReaderResourceLimits** [get]

  Gets the DataReaderResourceLimits policy.

- **DataReaderProtocol Protocol** [get]

Gets the DataReaderProtocol policy.

- **TransportSelection TransportSelection** [get]

  *Gets the **TransportSelection** (p. 300) policy.*
- **TransportUnicast Unicast** [get]

  Gets the TransportUnicast policy.
- **TransportMulticast Multicast** [get]

  Gets the TransportMulticast policy.
- **Property Property** [get]

  *Gets the **Property** (p. 300) policy.*
- **Service Service** [get]

  *Gets the **Service** (p. 300) policy.*
- **Availability Availability** [get]

  *Gets the **Availability** (p. 300) policy.*
- **EntityName SubscriptionName** [get]

  Gets the EntityName policy.
- **TransportPriority TransportPriority** [get]

  *Gets the **TransportPriority** (p. 301) policy.*
- **TypeSupport TypeSupport** [get]

  *Gets the **TypeSupport** (p. 301) policy.*
- static **DataReaderQos Default** = new **DataReaderQos**() [get]

  *Singleton containing the documented default value of a **DataReaderQos** (p. 271)*

9.46.1 Detailed Description

Container of the QoS policies that a DataReader<T> supports

The full documentation is available in the C API: DDS_DataReaderQos

9.46.2 Member Function Documentation

9.46.2.1 WithDurability() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDurability (
            Durability policy )  [inline]
```

Creates an instance with a new **Durability** (p. 297) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.2 WithDurability() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDurability (
            Action< DurabilityBuilder > build )
```

Creates a new instance with a new **Durability** (p. 297) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.3 WithDeadline() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDeadline (
             Deadline policy )  [inline]
```

Creates an instance with a new **Deadline** (p. 297) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.4 WithDeadline() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDeadline (
            Action< DeadlineBuilder > build )
```

Creates a new instance with a new **Deadline** (p. 297) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.5 WithLatencyBudget() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithLatencyBudget (
            LatencyBudget policy )  [inline]
```

Creates an instance with a new **LatencyBudget** (p. 297) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.6 WithLatencyBudget() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithLatencyBudget (
          Action<  LatencyBudgetBuilder > build )
```

Creates a new instance with a new **LatencyBudget** (p. 297) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.7 WithLiveliness() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithLiveliness (
            Liveliness policy )  [inline]
```

Creates an instance with a new **Liveliness** (p. 297) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.8 WithLiveliness() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithLiveliness (
          Action<  LivelinessBuilder > build )
```

Creates a new instance with a new **Liveliness** (p. 297) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.9 WithReliability() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithReliability (
            Reliability policy )  [inline]
```

Creates an instance with a new **Reliability** (p. 297) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.10 WithReliability() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithReliability (
            Action< ReliabilityBuilder > build )
```

Creates a new instance with a new **Reliability** (p. 297) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.11 WithDestinationOrder() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDestinationOrder (
             DestinationOrder policy )  [inline]
```

Creates an instance with a new **DestinationOrder** (p. 298) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.12 WithDestinationOrder() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDestinationOrder (
            Action< DestinationOrderBuilder > build )
```

Creates a new instance with a new **DestinationOrder** (p. 298) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.13 WithHistory() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithHistory (
            History policy )  [inline]
```

Creates an instance with a new **History** (p. 298) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.14 WithHistory() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithHistory (
          Action<  HistoryBuilder > build )
```

Creates a new instance with a new **History** (p. 298) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.15 WithResourceLimits() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithResourceLimits (
            ResourceLimits policy ) [inline]
```

Creates an instance with a new **ResourceLimits** (p. 298) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.16 WithResourceLimits() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithResourceLimits (
          Action< ResourceLimitsBuilder > build )
```

Creates a new instance with a new **ResourceLimits** (p. 298) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.17 WithUserData() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithUserData (
            UserData policy ) [inline]
```

Creates an instance with a new **UserData** (p. 298) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.18 WithUserData() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithUserData (
            Action< ImmutableList< byte >.Builder > build )
```

Creates a new instance with a new **UserData** (p. 298) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.19 WithOwnership() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithOwnership (
             Ownership policy )  [inline]
```

Creates an instance with a new **Ownership** (p. 298) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.20 WithOwnership() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithOwnership (
            Action<  OwnershipBuilder > build )
```

Creates a new instance with a new **Ownership** (p. 298) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.21 WithTimeBasedFilter() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTimeBasedFilter (
            TimeBasedFilter policy )  [inline]
```

Creates an instance with a new **TimeBasedFilter** (p. 298) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.22 WithTimeBasedFilter() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTimeBasedFilter (
          Action<  TimeBasedFilterBuilder > build )
```

Creates a new instance with a new **TimeBasedFilter** (p. 298) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.23 WithReaderDataLifecycle() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithReaderDataLifecycle (
            ReaderDataLifecycle policy )  [inline]
```

Creates an instance with a new **ReaderDataLifecycle** (p. 299) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.24 WithReaderDataLifecycle() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithReaderDataLifecycle (
          Action< ReaderDataLifecycleBuilder > build )
```

Creates a new instance with a new **ReaderDataLifecycle** (p. 299) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.25 WithRepresentation() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithRepresentation (
            DataRepresentation policy )  [inline]
```

Creates an instance with a new DataRepresentation policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.26 WithRepresentation() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithRepresentation (
            Action< DataRepresentationBuilder > build )
```

Creates a new instance with a new DataRepresentation policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.27 WithTypeConsistency() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTypeConsistency (
             TypeConsistencyEnforcement policy )  [inline]
```

Creates an instance with a new TypeConsistencyEnforcement policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.28 WithTypeConsistency() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTypeConsistency (
            Action< TypeConsistencyEnforcementBuilder > build )
```

Creates a new instance with a new TypeConsistencyEnforcement policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.29 WithDataTags() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDataTags (
            DataTags policy )  [inline]
```

Creates an instance with a new **DataTags** (p. 299) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.30 WithDataTags() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithDataTags (
          Action< ImmutableDictionary< string, string >.Builder > build )
```

Creates a new instance with a new **DataTags** (p. 299) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.31 WithReaderResourceLimits() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithReaderResourceLimits (
            DataReaderResourceLimits policy )  [inline]
```

Creates an instance with a new DataReaderResourceLimits policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.32 WithReaderResourceLimits() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithReaderResourceLimits (
          Action< DataReaderResourceLimitsBuilder > build )
```

Creates a new instance with a new DataReaderResourceLimits policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.33 WithProtocol() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithProtocol (
            DataReaderProtocol policy )  [inline]
```

Creates an instance with a new DataReaderProtocol policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.34 WithProtocol() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithProtocol (
            Action< DataReaderProtocolBuilder > build )
```

Creates a new instance with a new DataReaderProtocol policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.35 WithTransportSelection() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTransportSelection (
             TransportSelection policy )  [inline]
```

Creates an instance with a new **TransportSelection** (p. 300) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.36 WithTransportSelection() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTransportSelection (
            Action< TransportSelectionBuilder > build )
```

Creates a new instance with a new **TransportSelection** (p. 300) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.37 WithUnicast() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithUnicast (
            TransportUnicast policy )  [inline]
```

Creates an instance with a new TransportUnicast policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.38 WithUnicast() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithUnicast (
          Action< ImmutableList<  TransportUnicastSettings >.Builder > build )
```

Creates a new instance with a new TransportUnicast policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.39 WithMulticast() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithMulticast (
            TransportMulticast policy ) [inline]
```

Creates an instance with a new TransportMulticast policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.40 WithMulticast() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithMulticast (
          Action< TransportMulticastBuilder > build )
```

Creates a new instance with a new TransportMulticast policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.41 WithProperty() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithProperty (
            Property policy ) [inline]
```

Creates an instance with a new **Property** (p. 300) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.42 WithProperty() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithProperty (
            Action< ImmutableDictionary< string,  Property.Entry >.Builder > build )
```

Creates a new instance with a new **Property** (p. 300) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.43 WithService() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithService (
             Service policy )  [inline]
```

Creates an instance with a new **Service** (p. 300) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.44 WithService() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithService (
            Action<  ServiceBuilder > build )
```

Creates a new instance with a new **Service** (p. 300) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.45 WithAvailability() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithAvailability (
            Availability policy )  [inline]
```

Creates an instance with a new **Availability** (p. 300) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.46 WithAvailability() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithAvailability (
          Action<  AvailabilityBuilder > build )
```

Creates a new instance with a new **Availability** (p. 300) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.47 WithSubscriptionName() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithSubscriptionName (
            EntityName policy )  [inline]
```

Creates an instance with a new EntityName policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.48 WithSubscriptionName() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithSubscriptionName (
          Action<  EntityNameBuilder > build )
```

Creates a new instance with a new EntityName policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.49 WithTransportPriority() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTransportPriority (
            TransportPriority policy )  [inline]
```

Creates an instance with a new **TransportPriority** (p. 301) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.50 WithTransportPriority() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTransportPriority (
            Action< TransportPriorityBuilder > build )
```

Creates a new instance with a new **TransportPriority** (p. 301) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.51 WithTypeSupport() [1/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTypeSupport (
             TypeSupport policy )  [inline]
```

Creates an instance with a new **TypeSupport** (p. 301) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.46.2.52 WithTypeSupport() [2/2]

```
DataReaderQos Rti.Dds.Subscription.DataReaderQos.WithTypeSupport (
            Action< TypeSupportBuilder > build )
```

Creates a new instance with a new **TypeSupport** (p. 301) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.46.2.53 FromTopicQos()

```
static DataReaderQos Rti.Dds.Subscription.DataReaderQos.FromTopicQos (
            TopicQos topicQos ) [inline], [static]
```

Creates a **DataReaderQos** (p. 271) object with the policies of a TopicQos object.

9.46.2.54 GetHashCode()

```
override int Rti.Dds.Subscription.DataReaderQos.GetHashCode ( ) [inline]
```

Gets the hash code

9.46.2.55 Equals() [1/2]

```
override bool Rti.Dds.Subscription.DataReaderQos.Equals (
            object other )
```

Compares for equality

9.46.2.56 Equals() [2/2]

```
bool Rti.Dds.Subscription.DataReaderQos.Equals (
            DataReaderQos other ) [inline]
```

Compares for equality

9.46.2.57 ToString() [1/4]

```
override string Rti.Dds.Subscription.DataReaderQos.ToString ( )
```

Returns an XML representation of the QoS object.

The output is formatted using the default values for the QosPrintFormat and only QoS policies which differ from the documented default are included.

9.46.2.58 ToString() [2/4]

```
string Rti.Dds.Subscription.DataReaderQos.ToString (
            QosPrintFormat format )
```

Returns an XML representation of the QoS object.

Parameters

format	The baseQos profile.

This overload accepts a value for the baseQos. Only the differences between the **DataReaderQos** (p. 271) object being printed and the baseQos are included in the output.

9.46.2.59 ToString() [3/4]

```
string Rti.Dds.Subscription.DataReaderQos.ToString (
            DataReaderQos baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	The baseQos profile.
format	the format used to configure the output. If not supplied the output is formatted using the default format.

This overload accepts a value for the baseQos. Only the differences between the **DataReaderQos** (p. 271) object being printed and the baseQos are included in the output.

9.46.2.60 ToString() [4/4]

```
string Rti.Dds.Subscription.DataReaderQos.ToString (
            QosPrintAll baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	Used to indicate that the entire QoS object should be included in the output. The only value which should be provided for this argument is QosPrintAll.Value
format	The format used to configure the output. If not supplied, the output is formatted using the default format.

This overload accepts a parameter of type QosPrintAll. Unlike the other ToString overloads, the entire QoS object will be included in the output.

9.46.3 Property Documentation

9.46.3.1 Durability

```
Durability Rti.Dds.Subscription.DataReaderQos.Durability [get]
```

Gets the **Durability** (p. 297) policy.

9.46.3.2 Deadline

```
Deadline Rti.Dds.Subscription.DataReaderQos.Deadline [get]
```

Gets the **Deadline** (p. 297) policy.

9.46.3.3 LatencyBudget

```
LatencyBudget Rti.Dds.Subscription.DataReaderQos.LatencyBudget [get]
```

Gets the **LatencyBudget** (p. 297) policy.

9.46.3.4 Liveliness

```
Liveliness Rti.Dds.Subscription.DataReaderQos.Liveliness [get]
```

Gets the **Liveliness** (p. 297) policy.

9.46.3.5 Reliability

Reliability Rti.Dds.Subscription.DataReaderQos.Reliability [get]

Gets the **Reliability** (p. 297) policy.

9.46.3.6 DestinationOrder

DestinationOrder Rti.Dds.Subscription.DataReaderQos.DestinationOrder [get]

Gets the **DestinationOrder** (p. 298) policy.

9.46.3.7 History

History Rti.Dds.Subscription.DataReaderQos.History [get]

Gets the **History** (p. 298) policy.

9.46.3.8 ResourceLimits

ResourceLimits Rti.Dds.Subscription.DataReaderQos.ResourceLimits [get]

Gets the **ResourceLimits** (p. 298) policy.

9.46.3.9 UserData

UserData Rti.Dds.Subscription.DataReaderQos.UserData [get]

Gets the **UserData** (p. 298) policy.

9.46.3.10 Ownership

Ownership Rti.Dds.Subscription.DataReaderQos.Ownership [get]

Gets the **Ownership** (p. 298) policy.

9.46.3.11 TimeBasedFilter

TimeBasedFilter Rti.Dds.Subscription.DataReaderQos.TimeBasedFilter [get]

Gets the **TimeBasedFilter** (p. 298) policy.

9.46.3.12 ReaderDataLifecycle

ReaderDataLifecycle Rti.Dds.Subscription.DataReaderQos.ReaderDataLifecycle [get]

Gets the **ReaderDataLifecycle** (p. 299) policy.

9.46.3.13 Representation

DataRepresentation Rti.Dds.Subscription.DataReaderQos.Representation [get]

Gets the DataRepresentation policy.

9.46.3.14 TypeConsistency

TypeConsistencyEnforcement Rti.Dds.Subscription.DataReaderQos.TypeConsistency [get]

Gets the TypeConsistencyEnforcement policy.

9.46.3.15 DataTags

DataTags Rti.Dds.Subscription.DataReaderQos.DataTags [get]

Gets the TypeConsistencyEnforcement policy.

9.46.3.16 ReaderResourceLimits

DataReaderResourceLimits Rti.Dds.Subscription.DataReaderQos.ReaderResourceLimits [get]

Gets the DataReaderResourceLimits policy.

9.46.3.17 Protocol

DataReaderProtocol Rti.Dds.Subscription.DataReaderQos.Protocol [get]

Gets the DataReaderProtocol policy.

9.46.3.18 TransportSelection

TransportSelection Rti.Dds.Subscription.DataReaderQos.TransportSelection [get]

Gets the **TransportSelection** (p. 300) policy.

9.46.3.19 Unicast

TransportUnicast Rti.Dds.Subscription.DataReaderQos.Unicast [get]

Gets the TransportUnicast policy.

9.46.3.20 Multicast

TransportMulticast Rti.Dds.Subscription.DataReaderQos.Multicast [get]

Gets the TransportMulticast policy.

9.46.3.21 Property

Property Rti.Dds.Subscription.DataReaderQos.Property [get]

Gets the **Property** (p. 300) policy.

9.46.3.22 Service

Service Rti.Dds.Subscription.DataReaderQos.Service [get]

Gets the **Service** (p. 300) policy.

9.46.3.23 Availability

Availability Rti.Dds.Subscription.DataReaderQos.Availability [get]

Gets the **Availability** (p. 300) policy.

9.46.3.24 SubscriptionName

EntityName Rti.Dds.Subscription.DataReaderQos.SubscriptionName [get]

Gets the EntityName policy.

9.46.3.25 TransportPriority

TransportPriority Rti.Dds.Subscription.DataReaderQos.TransportPriority [get]

Gets the **TransportPriority** (p. 301) policy.

9.46.3.26 TypeSupport

TypeSupport Rti.Dds.Subscription.DataReaderQos.TypeSupport [get]

Gets the **TypeSupport** (p. 301) policy.

9.46.3.27 Default

DataReaderQos Rti.Dds.Subscription.DataReaderQos.Default = new **DataReaderQos**() [static], [get]

Singleton containing the documented default value of a **DataReaderQos** (p. 271)

This is a static value containing the documented default values for each policy. Use **Domain.DomainParticipant.↩ DefaultDataReaderQos** (p. 468) for the runtime default value that takes into consideration the current configuration.

9.47 Rti.Dds.Core.Policy.DataReaderResourceLimits Class Reference

Various settings that configure how a DataReader<T> allocates and uses physical memory for internal resources.

Inherits IEquatable< DataReaderResourceLimits >.

Public Member Functions

- **DataReaderResourceLimits With** (Action< **DataReaderResourceLimitsBuilder** > build)

  *Creates a new **DataReaderResourceLimits*** (p. *301*) *with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataReaderResourceLimits** other)

  Compares for equality

Static Public Attributes

- const int **AutoMaxTotalInstances** = 0

  *This value is used to set **MaxTotalInstances*** (p. *308*) *to **ResourceLimits.MaxInstances*** (p. *987*).

Properties

- int **MaxRemoteWriters** [get]

  The maximum number of remote writers from which a DataReader<T> may read, including all instances.
- int **MaxRemoteWritersPerInstance** [get]

  The maximum number of remote writers from which a DataReader<T> may read a single instance.
- int **MaxSamplesPerRemoteWriter** [get]

  The maximum number of out-of-order samples from a given remote Publication.DataWriter<T> that a DataReader<T> may store when maintaining a reliable connection to the Publication.DataWriter<T>.
- int **MaxInfos** [get]

  The maximum number of info units that a DataReader<T> can use to store SampleInfo.
- int **InitialRemoteWriters** [get]

  The initial number of remote writers from which a DataReader<T> may read, including all instances.
- int **InitialRemoteWritersPerInstance** [get]

  The initial number of remote writers from which a DataReader<T> may read a single instance.
- int **InitialInfos** [get]

  The initial number of info units that a DataReader<T> can have, which are used to store SampleInfo.
- int **InitialOutstandingReads** [get]

  The initial number of outstanding calls to read/take (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.
- int **MaxOutstandingReads** [get]

  The maximum number of outstanding read/take calls (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.
- int **MaxSamplesPerRead** [get]

  The maximum number of data samples that the application can receive from the middleware in a single call to DataReader<T>.Read or DataReader<T>.Take. If more data exists in the middleware, the application will need to issue multiple read/take calls.
- bool **DisableFragmentationSupport** [get]

  Determines whether the DataReader<T> can receive fragmented samples.
- int **MaxFragmentedSamples** [get]

  The maximum number of samples for which the DataReader<T> may store fragments at a given point in time.

- int **InitialFragmentedSamples** [get]

  The initial number of samples for which a DataReader<T> may store fragments.
- int **MaxFragmentedSamplesPerRemoteWriter** [get]

  The maximum number of samples per remote writer for which a DataReader<T> may store fragments.
- int **MaxFragmentsPerSample** [get]

  Maximum number of fragments for a single sample.
- bool **DynamicallyAllocateFragmentedSamples** [get]

  Determines whether the DataReader<T> pre-allocates storage for storing fragmented samples.
- int **MaxTotalInstances** [get]

  Maximum number of instances for which a DataReader will keep state.
- int **MaxRemoteVirtualWriters** [get]

  The maximum number of remote virtual writers from which a DataReader<T> may read, including all instances.
- int **InitialRemoteVirtualWriters** [get]

  The initial number of remote virtual writers from which a DataReader<T> may read, including all instances.
- int **MaxRemoteVirtualWritersPerInstance** [get]

  The maximum number of virtual remote writers that can be associated with an instance.
- int **InitialRemoteVirtualWritersPerInstance** [get]

  The initial number of virtual remote writers per instance.
- int **MaxRemoteWritersPerSample** [get]

  The maximum number of remote writers allowed to write the same sample.
- int **MaxQueryConditionFilters** [get]

  The maximum number of query condition filters a reader is allowed.
- int **MaxAppAckResponseLength** [get]

  Maximum length of application-level acknowledgment response data
- bool **KeepMinimumStateForInstances** [get]

  *Whether or not keep a minimum instance state for up to **MaxTotalInstances*** (p. 308).
- int **InitialTopicQueries** [get]

  The initial number of TopicQueries allocated by a DataReader<T>.
- int **MaxTopicQueries** [get]

  The maximum number of active TopicQueries that a DataReader<T> can create.
- **AllocationSettings ShmemRefTransferModeAttachedSegmentAllocation** [get]

  Allocation resource for the shared memory segments attached by the DataReader<T>.
- **InstanceReplacementSettings InstanceReplacement** [get]

  *Sets the kind of instances allowed to be replaced for each instance state (**Omg.Dds.Subscription.InstanceState*** (p. 66)*) when a DataReader reaches **ResourceLimits.MaxInstances*** (p. 987).
- **Duration AutopurgeRemoteNotAliveWriterDelay** [get]

  Maximum duration for which the DataReader<T> will maintain information regarding a Publication.DataWriter<T> once the Publication.DataWriter<T> has become not alive.
- **Duration AutopurgeRemoteVirtualWriterDelay** [get]

  Maximum duration for which the DataReader<T> will maintain information regarding a virtual Publication.DataWriter<T> once the Publication.DataWriter<T> has become not alive.
- bool **LazilyAllocateBatchResources** [get]

  Determines whether the DataReader<T> lazily allocates resources for batching.
- static **DataReaderResourceLimits Default** [get]

  *Singleton containing the default value of a **DataReaderResourceLimits*** (p. 301)

9.47.1 Detailed Description

Various settings that configure how a DataReader<T> allocates and uses physical memory for internal resources.

The full documentation is available in the C API: `DDS_DataReaderResourceLimitsQosPolicy`

9.47.2 Member Function Documentation

9.47.2.1 With()

```
DataReaderResourceLimits Rti.Dds.Core.Policy.DataReaderResourceLimits.With (
            Action< DataReaderResourceLimitsBuilder > build ) [inline]
```

Creates a new **DataReaderResourceLimits** (p. 301) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DataReaderResourceLimits** (p. 301).

Returns

A new **DataReaderResourceLimits** (p. 301) with the changes applied by the Action

9.47.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DataReaderResourceLimits.GetHashCode ( ) [inline]
```

Gets the hash code

9.47.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DataReaderResourceLimits.Equals (
            object other )
```

Compares for equality

9.47.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimits.Equals (
            DataReaderResourceLimits other ) [inline]
```

Compares for equality

9.47.3 Field Documentation

9.47.3.1 AutoMaxTotalInstances

```
const int Rti.Dds.Core.Policy.DataReaderResourceLimits.AutoMaxTotalInstances = 0 [static]
```

This value is used to set **MaxTotalInstances** (p. 308) to **ResourceLimits.MaxInstances** (p. 987).

The full documentation is available in the C API: DDSDataReaderResourceLimitsQosPolicyAUTO_↩MAX_TOTAL_INSTANCES

9.47.4 Property Documentation

9.47.4.1 MaxRemoteWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxRemoteWriters [get]
```

The maximum number of remote writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩remote_writers

9.47.4.2 MaxRemoteWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxRemoteWritersPerInstance [get]
```

The maximum number of remote writers from which a DataReader<T> may read a single instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩remote_writers_per_instance

9.47.4.3 MaxSamplesPerRemoteWriter

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxSamplesPerRemoteWriter [get]
```

The maximum number of out-of-order samples from a given remote Publication.DataWriter<T> that a DataReader<T> may store when maintaining a reliable connection to the Publication.DataWriter<T>.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_samples_per_remote_writer

9.47.4.4 MaxInfos

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxInfos [get]
```

The maximum number of info units that a DataReader<T> can use to store SampleInfo.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_infos

9.47.4.5 InitialRemoteWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialRemoteWriters [get]
```

The initial number of remote writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_remote_writers

9.47.4.6 InitialRemoteWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialRemoteWritersPerInstance [get]
```

The initial number of remote writers from which a DataReader<T> may read a single instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_remote_writers_per_instance

9.47.4.7 InitialInfos

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialInfos [get]
```

The initial number of info units that a DataReader<T> can have, which are used to store SampleInfo.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_infos

9.47.4.8 InitialOutstandingReads

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialOutstandingReads [get]
```

The initial number of outstanding calls to read/take (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_outstanding_reads

9.47.4.9 MaxOutstandingReads

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxOutstandingReads [get]
```

The maximum number of outstanding read/take calls (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_outstanding_reads

9.47.4.10 MaxSamplesPerRead

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxSamplesPerRead [get]
```

The maximum number of data samples that the application can receive from the middleware in a single call to DataReader<T>.Read or DataReader<T>.Take. If more data exists in the middleware, the application will need to issue multiple read/take calls.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_samples_per_read

9.47.4.11 DisableFragmentationSupport

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimits.DisableFragmentationSupport [get]
```

Determines whether the DataReader<T> can receive fragmented samples.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_disable_fragmentation_support

9.47.4.12 MaxFragmentedSamples

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxFragmentedSamples [get]
```

The maximum number of samples for which the DataReader<T> may store fragments at a given point in time.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_fragmented_samples

9.47.4.13 InitialFragmentedSamples

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialFragmentedSamples [get]
```

The initial number of samples for which a DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_fragmented_samples

9.47.4.14 MaxFragmentedSamplesPerRemoteWriter

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxFragmentedSamplesPerRemoteWriter [get]
```

The maximum number of samples per remote writer for which a DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_fragmented_samples_per_remote_writer

9.47.4.15 MaxFragmentsPerSample

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxFragmentsPerSample [get]
```

Maximum number of fragments for a single sample.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_fragments_per_sample

9.47.4.16 DynamicallyAllocateFragmentedSamples

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimits.DynamicallyAllocateFragmentedSamples [get]
```

Determines whether the DataReader<T> pre-allocates storage for storing fragmented samples.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_dynamically_allocate_fragmented_samples

9.47.4.17 MaxTotalInstances

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxTotalInstances [get]
```

Maximum number of instances for which a DataReader will keep state.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_total_instances

9.47.4.18 MaxRemoteVirtualWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxRemoteVirtualWriters [get]
```

The maximum number of remote virtual writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_remote_virtual_writers

9.47.4.19 InitialRemoteVirtualWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialRemoteVirtualWriters [get]
```

The initial number of remote virtual writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_remote_virtual_writers

9.47.4.20 MaxRemoteVirtualWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxRemoteVirtualWritersPerInstance [get]
```

The maximum number of virtual remote writers that can be associated with an instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_remote_virtual_writers_per_instance

9.47.4.21 InitialRemoteVirtualWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialRemoteVirtualWritersPerInstance [get]
```

The initial number of virtual remote writers per instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_remote_virtual_writers_per_instance

9.47.4.22 MaxRemoteWritersPerSample

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxRemoteWritersPerSample [get]
```

The maximum number of remote writers allowed to write the same sample.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_remote_writers_per_sample

9.47.4.23 MaxQueryConditionFilters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxQueryConditionFilters [get]
```

The maximum number of query condition filters a reader is allowed.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩ query_condition_filters

9.47.4.24 MaxAppAckResponseLength

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxAppAckResponseLength [get]
```

Maximum length of application-level acknowledgment response data

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩ app_ack_response_length

9.47.4.25 KeepMinimumStateForInstances

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimits.KeepMinimumStateForInstances [get]
```

Whether or not keep a minimum instance state for up to **MaxTotalInstances** (p. 308).

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_keep_↩ minimum_state_for_instances

9.47.4.26 InitialTopicQueries

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.InitialTopicQueries [get]
```

The initial number of TopicQueries allocated by a DataReader<T>.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩ initial_topic_queries

9.47.4.27 MaxTopicQueries

```
int Rti.Dds.Core.Policy.DataReaderResourceLimits.MaxTopicQueries [get]
```

The maximum number of active TopicQueries that a DataReader<T> can create.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩ topic_queries

9.47.4.28 ShmemRefTransferModeAttachedSegmentAllocation

AllocationSettings Rti.Dds.Core.Policy.DataReaderResourceLimits.ShmemRefTransferModeAttached↩SegmentAllocation [get]

Allocation resource for the shared memory segments attached by the DataReader<T>.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_shmem↩_ref_transfer_mode_attached_segment_allocation

9.47.4.29 InstanceReplacement

InstanceReplacementSettings Rti.Dds.Core.Policy.DataReaderResourceLimits.InstanceReplacement [get]

Sets the kind of instances allowed to be replaced for each instance state (**Omg.Dds.Subscription.InstanceState** (p. 66)) when a DataReader reaches **ResourceLimits.MaxInstances** (p. 987).

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩instance_replacement

9.47.4.30 AutopurgeRemoteNotAliveWriterDelay

Duration Rti.Dds.Core.Policy.DataReaderResourceLimits.AutopurgeRemoteNotAliveWriterDelay [get]

Maximum duration for which the DataReader<T> will maintain information regarding a Publication.DataWriter<T> once the Publication.DataWriter<T> has become not alive.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩autopurge_remote_not_alive_writer_delay

9.47.4.31 AutopurgeRemoteVirtualWriterDelay

Duration Rti.Dds.Core.Policy.DataReaderResourceLimits.AutopurgeRemoteVirtualWriterDelay [get]

Maximum duration for which the DataReader<T> will maintain information regarding a virtual Publication.Data↩Writer<T> once the Publication.DataWriter<T> has become not alive.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩autopurge_remote_virtual_writer_delay

9.47.4.32 LazilyAllocateBatchResources

bool Rti.Dds.Core.Policy.DataReaderResourceLimits.LazilyAllocateBatchResources [get]

Determines whether the DataReader<T> lazily allocates resources for batching.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩lazily_allocate_batch_resources

9.47.4.33 Default

```
DataReaderResourceLimits Rti.Dds.Core.Policy.DataReaderResourceLimits.Default  [static], [get]
```

Singleton containing the default value of a **DataReaderResourceLimits** (p. 301)

9.48 Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder Class Reference

A modifiable type used to create an immutable **DataReaderResourceLimits** (p. 301)

Public Member Functions

- **DataReaderResourceLimitsBuilder** (**DataReaderResourceLimits** data)

  Creates a builder with the values of an existing immutable instance
- **DataReaderResourceLimits Build** ()

  *Creates a new **DataReaderResourceLimits** (p. 301) immutable object from this one.*

Properties

- int **MaxRemoteWriters** [get, set]

  The maximum number of remote writers from which a DataReader<T> may read, including all instances.
- int **MaxRemoteWritersPerInstance** [get, set]

  The maximum number of remote writers from which a DataReader<T> may read a single instance.
- int **MaxSamplesPerRemoteWriter** [get, set]

  The maximum number of out-of-order samples from a given remote Publication.DataWriter<T> that a DataReader<T> may store when maintaining a reliable connection to the Publication.DataWriter<T>.
- int **MaxInfos** [get, set]

  The maximum number of info units that a DataReader<T> can use to store SampleInfo.
- int **InitialRemoteWriters** [get, set]

  The initial number of remote writers from which a DataReader<T> may read, including all instances.
- int **InitialRemoteWritersPerInstance** [get, set]

  The initial number of remote writers from which a DataReader<T> may read a single instance.
- int **InitialInfos** [get, set]

  The initial number of info units that a DataReader<T> can have, which are used to store SampleInfo.
- int **InitialOutstandingReads** [get, set]

  The initial number of outstanding calls to read/take (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.
- int **MaxOutstandingReads** [get, set]

  The maximum number of outstanding read/take calls (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.
- int **MaxSamplesPerRead** [get, set]

  The maximum number of data samples that the application can receive from the middleware in a single call to DataReader<T>.Read or DataReader<T>.Take. If more data exists in the middleware, the application will need to issue multiple read/take calls.

- bool **DisableFragmentationSupport** [get, set]

  Determines whether the DataReader<T> can receive fragmented samples.
- int **MaxFragmentedSamples** [get, set]

  The maximum number of samples for which the DataReader<T> may store fragments at a given point in time.
- int **InitialFragmentedSamples** [get, set]

  The initial number of samples for which a DataReader<T> may store fragments.
- int **MaxFragmentedSamplesPerRemoteWriter** [get, set]

  The maximum number of samples per remote writer for which a DataReader<T> may store fragments.
- int **MaxFragmentsPerSample** [get, set]

  Maximum number of fragments for a single sample.
- bool **DynamicallyAllocateFragmentedSamples** [get, set]

  Determines whether the DataReader<T> pre-allocates storage for storing fragmented samples.
- int **MaxTotalInstances** [get, set]

  Maximum number of instances for which a DataReader will keep state.
- int **MaxRemoteVirtualWriters** [get, set]

  The maximum number of remote virtual writers from which a DataReader<T> may read, including all instances.
- int **InitialRemoteVirtualWriters** [get, set]

  The initial number of remote virtual writers from which a DataReader<T> may read, including all instances.
- int **MaxRemoteVirtualWritersPerInstance** [get, set]

  The maximum number of virtual remote writers that can be associated with an instance.
- int **InitialRemoteVirtualWritersPerInstance** [get, set]

  The initial number of virtual remote writers per instance.
- int **MaxRemoteWritersPerSample** [get, set]

  The maximum number of remote writers allowed to write the same sample.
- int **MaxQueryConditionFilters** [get, set]

  The maximum number of query condition filters a reader is allowed.
- int **MaxAppAckResponseLength** [get, set]

  Maximum length of application-level acknowledgment response data
- bool **KeepMinimumStateForInstances** [get, set]

  *Whether or not keep a minimum instance state for up to **DataReaderResourceLimits.MaxTotalInstances** (p. 308).*
- int **InitialTopicQueries** [get, set]

  The initial number of TopicQueries allocated by a DataReader<T>.
- int **MaxTopicQueries** [get, set]

  The maximum number of active TopicQueries that a DataReader<T> can create.
- **AllocationSettings ShmemRefTransferModeAttachedSegmentAllocation** [get, set]

  Allocation resource for the shared memory segments attached by the DataReader<T>.
- **InstanceReplacementSettings InstanceReplacement** [get, set]

  *Sets the kind of instances allowed to be replaced for each instance state (**Omg.Dds.Subscription.InstanceState** (p. 66)) when a DataReader reaches **ResourceLimits.MaxInstances** (p. 987).*
- **Duration AutopurgeRemoteNotAliveWriterDelay** [get, set]

  Maximum duration for which the DataReader<T> will maintain information regarding a Publication.DataWriter<T> once the Publication.DataWriter<T> has become not alive.
- **Duration AutopurgeRemoteVirtualWriterDelay** [get, set]

  Maximum duration for which the DataReader<T> will maintain information regarding a virtual Publication.DataWriter<T> once the Publication.DataWriter<T> has become not alive.
- bool **LazilyAllocateBatchResources** [get, set]

  Determines whether the DataReader<T> lazily allocates resources for batching.

9.48.1 Detailed Description

A modifiable type used to create an immutable **DataReaderResourceLimits** (p. 301)

9.48.2 Constructor & Destructor Documentation

9.48.2.1 DataReaderResourceLimitsBuilder()

```
Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.DataReaderResourceLimitsBuilder (
            DataReaderResourceLimits data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.48.3 Member Function Documentation

9.48.3.1 Build()

```
DataReaderResourceLimits Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.Build ( )
```

Creates a new **DataReaderResourceLimits** (p. 301) immutable object from this one.

9.48.4 Property Documentation

9.48.4.1 MaxRemoteWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxRemoteWriters  [get], [set]
```

The maximum number of remote writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩
remote_writers

9.48.4.2 MaxRemoteWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxRemoteWritersPerInstance [get], [set]
```

The maximum number of remote writers from which a DataReader<T> may read a single instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_remote_writers_per_instance

9.48.4.3 MaxSamplesPerRemoteWriter

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxSamplesPerRemoteWriter [get], [set]
```

The maximum number of out-of-order samples from a given remote Publication.DataWriter<T> that a DataReader<T> may store when maintaining a reliable connection to the Publication.DataWriter<T>.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_samples_per_remote_writer

9.48.4.4 MaxInfos

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxInfos [get], [set]
```

The maximum number of info units that a DataReader<T> can use to store SampleInfo.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_infos

9.48.4.5 InitialRemoteWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialRemoteWriters [get], [set]
```

The initial number of remote writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_remote_writers

9.48.4.6 InitialRemoteWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialRemoteWritersPerInstance [get],
[set]
```

The initial number of remote writers from which a DataReader<T> may read a single instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_remote_writers_per_instance

9.48.4.7 InitialInfos

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialInfos [get], [set]
```

The initial number of info units that a DataReader<T> can have, which are used to store SampleInfo.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_infos

9.48.4.8 InitialOutstandingReads

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialOutstandingReads [get], [set]
```

The initial number of outstanding calls to read/take (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_outstanding_reads

9.48.4.9 MaxOutstandingReads

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxOutstandingReads [get], [set]
```

The maximum number of outstanding read/take calls (or one of their variants) on the same DataReader<T> for which one or more LoanedSamples<T> objects have not been disposed.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_outstanding_reads

9.48.4.10 MaxSamplesPerRead

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxSamplesPerRead [get], [set]
```

The maximum number of data samples that the application can receive from the middleware in a single call to DataReader<T>.Read or DataReader<T>.Take. If more data exists in the middleware, the application will need to issue multiple read/take calls.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_samples_per_read

9.48.4.11 DisableFragmentationSupport

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.DisableFragmentationSupport [get], [set]
```

Determines whether the DataReader<T> can receive fragmented samples.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_disable_fragmentation_support

9.48.4.12 MaxFragmentedSamples

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxFragmentedSamples [get], [set]
```

The maximum number of samples for which the DataReader<T> may store fragments at a given point in time.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_fragmented_samples

9.48.4.13 InitialFragmentedSamples

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialFragmentedSamples [get], [set]
```

The initial number of samples for which a DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_fragmented_samples

9.48.4.14 MaxFragmentedSamplesPerRemoteWriter

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxFragmentedSamplesPerRemoteWriter [get],
[set]
```

The maximum number of samples per remote writer for which a DataReader<T> may store fragments.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_fragmented_samples_per_remote_writer

9.48.4.15 MaxFragmentsPerSample

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxFragmentsPerSample [get], [set]
```

Maximum number of fragments for a single sample.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_fragments_per_sample

9.48.4.16 DynamicallyAllocateFragmentedSamples

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.DynamicallyAllocateFragmentedSamples
[get], [set]
```

Determines whether the DataReader<T> pre-allocates storage for storing fragmented samples.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_dynamically_allocate_fragmented_samples

9.48.4.17 MaxTotalInstances

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxTotalInstances [get], [set]
```

Maximum number of instances for which a DataReader will keep state.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩ total_instances

9.48.4.18 MaxRemoteVirtualWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxRemoteVirtualWriters [get], [set]
```

The maximum number of remote virtual writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩ remote_virtual_writers

9.48.4.19 InitialRemoteVirtualWriters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialRemoteVirtualWriters [get], [set]
```

The initial number of remote virtual writers from which a DataReader<T> may read, including all instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩ initial_remote_virtual_writers

9.48.4.20 MaxRemoteVirtualWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxRemoteVirtualWritersPerInstance [get],
[set]
```

The maximum number of virtual remote writers that can be associated with an instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩ remote_virtual_writers_per_instance

9.48.4.21 InitialRemoteVirtualWritersPerInstance

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialRemoteVirtualWritersPerInstance
[get], [set]
```

The initial number of virtual remote writers per instance.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩ initial_remote_virtual_writers_per_instance

9.48.4.22 MaxRemoteWritersPerSample

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxRemoteWritersPerSample [get], [set]
```

The maximum number of remote writers allowed to write the same sample.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_remote_writers_per_sample

9.48.4.23 MaxQueryConditionFilters

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxQueryConditionFilters [get], [set]
```

The maximum number of query condition filters a reader is allowed.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_query_condition_filters

9.48.4.24 MaxAppAckResponseLength

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxAppAckResponseLength [get], [set]
```

Maximum length of application-level acknowledgment response data

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_app_ack_response_length

9.48.4.25 KeepMinimumStateForInstances

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.KeepMinimumStateForInstances [get],
[set]
```

Whether or not keep a minimum instance state for up to **DataReaderResourceLimits.MaxTotalInstances** (p. 308).

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_keep_minimum_state_for_instances

9.48.4.26 InitialTopicQueries

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InitialTopicQueries [get], [set]
```

The initial number of TopicQueries allocated by a DataReader<T>.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_initial_topic_queries

9.48.4.27 MaxTopicQueries

```
int Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.MaxTopicQueries  [get], [set]
```

The maximum number of active TopicQueries that a DataReader<T> can create.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_max_↩ topic_queries

9.48.4.28 ShmemRefTransferModeAttachedSegmentAllocation

```
AllocationSettings Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.ShmemRefTransferMode↩
AttachedSegmentAllocation  [get], [set]
```

Allocation resource for the shared memory segments attached by the DataReader<T>.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_shmem↩ _ref_transfer_mode_attached_segment_allocation

9.48.4.29 InstanceReplacement

```
InstanceReplacementSettings Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.InstanceReplacement
[get], [set]
```

Sets the kind of instances allowed to be replaced for each instance state (**Omg.Dds.Subscription.InstanceState** (p. 66)) when a DataReader reaches **ResourceLimits.MaxInstances** (p. 987).

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩ instance_replacement

9.48.4.30 AutopurgeRemoteNotAliveWriterDelay

```
Duration Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.AutopurgeRemoteNotAliveWriterDelay
[get], [set]
```

Maximum duration for which the DataReader<T> will maintain information regarding a Publication.DataWriter<T> once the Publication.DataWriter<T> has become not alive.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩ autopurge_remote_not_alive_writer_delay

9.48.4.31 AutopurgeRemoteVirtualWriterDelay

```
Duration Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.AutopurgeRemoteVirtualWriterDelay
[get], [set]
```

Maximum duration for which the DataReader<T> will maintain information regarding a virtual Publication.Data↩ Writer<T> once the Publication.DataWriter<T> has become not alive.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_↩ autopurge_remote_virtual_writer_delay

9.48.4.32 LazilyAllocateBatchResources

```
bool Rti.Dds.Core.Policy.DataReaderResourceLimitsBuilder.LazilyAllocateBatchResources [get],
[set]
```

Determines whether the DataReader<T> lazily allocates resources for batching.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsQosPolicy_lazily_allocate_batch_resources

9.49 Rti.Dds.Core.Policy.DataRepresentation Class Reference

Specifies a list of representation identifiers and compression settings used by Publication.DataWriter<T> and Subscription.DataReader<T> entities to negotiate which data representation and compression settings to use.

Inherits IEquatable< DataRepresentation >.

Public Member Functions

- **DataRepresentation With** (Action< **DataRepresentationBuilder** > build)

  *Creates a new **DataRepresentation** (p. 321) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataRepresentation** other)

  Compares for equality

Static Public Attributes

- const short **Xcdr** = 0

  Corresponds to the Extended Common Data Representation encoding version 1.
- const short **Xml** = 1

  Corresponds to XML Data Representation (unsupported).
- const short **Xcdr2** = 2

  Corresponds to the Extended Common Data Representation encoding version 2.
- const short **Auto** = -1

  Representation is automatically chosen based on the type.

Properties

- ImmutableList< short > **Value** [get]

  Sequence of representation identifiers.
- **CompressionSettings CompressionSettings** [get]

  Structure that contains the compression settings.
- static **DataRepresentation Default** = CreateDefault() [get]

  *Singleton containing the default value of a **DataRepresentation** (p. 321)*

9.49.1 Detailed Description

Specifies a list of representation identifiers and compression settings used by Publication.DataWriter<T> and Subscription.DataReader<T> entities to negotiate which data representation and compression settings to use.

9.49.2 Member Function Documentation

9.49.2.1 With()

```
DataRepresentation Rti.Dds.Core.Policy.DataRepresentation.With (
            Action<  DataRepresentationBuilder > build )  [inline]
```

Creates a new **DataRepresentation** (p. 321) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DataRepresentation** (p. 321).

Returns

A new **DataRepresentation** (p. 321) with the changes applied by the Action

9.49.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DataRepresentation.GetHashCode ( )  [inline]
```

Gets the hash code

9.49.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DataRepresentation.Equals (
            object other )
```

Compares for equality

9.49.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DataRepresentation.Equals (
            DataRepresentation other )  [inline]
```

Compares for equality

9.49.3 Field Documentation

9.49.3.1 Xcdr

```
const short Rti.Dds.Core.Policy.DataRepresentation.Xcdr = 0  [static]
```

Corresponds to the Extended Common Data Representation encoding version 1.

The full documentation is available in the C API: DDSDataRepresentationId_tXCDR_DATA_↩REPRESENTATION

9.49.3.2 Xml

```
const short Rti.Dds.Core.Policy.DataRepresentation.Xml = 1  [static]
```

Corresponds to XML Data Representation (unsupported).

*The full documentation is available in the C API:*DDSDataRepresentationId_tXML_DATA_REPRESENTATION

9.49.3.3 Xcdr2

```
const short Rti.Dds.Core.Policy.DataRepresentation.Xcdr2 = 2  [static]
```

Corresponds to the Extended Common Data Representation encoding version 2.

The full documentation is available in the C API: DDSDataRepresentationId_tXCDR2_DATA_↩REPRESENTATION

9.49.3.4 Auto

```
const short Rti.Dds.Core.Policy.DataRepresentation.Auto = -1  [static]
```

Representation is automatically chosen based on the type.

The full documentation is available in the C API: DDSDataRepresentationId_tAUTO_DATA_↩REPRESENTATION

9.49.4 Property Documentation

9.49.4.1 Value

```
ImmutableList<short> Rti.Dds.Core.Policy.DataRepresentation.Value  [get]
```

Sequence of representation identifiers.

The full documentation is available in the C API: `DDS_DataRepresentationQosPolicy_value`

9.49.4.2 CompressionSettings

```
CompressionSettings Rti.Dds.Core.Policy.DataRepresentation.CompressionSettings  [get]
```

Structure that contains the compression settings.

The full documentation is available in the C API: `DDS_DataRepresentationQosPolicy_compression_settings`

9.49.4.3 Default

```
DataRepresentation Rti.Dds.Core.Policy.DataRepresentation.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **DataRepresentation** (p. 321)

9.50 Rti.Dds.Core.Policy.DataRepresentationBuilder Class Reference

A modifiable type used to create an immutable **DataRepresentation** (p. 321)

Public Member Functions

- **DataRepresentationBuilder** (**DataRepresentation** data)

  Creates a builder with the values of an existing immutable instance
- **DataRepresentation Build** ()

  *Creates a new **DataRepresentation** (p. 321) immutable object from this one.*

Properties

- ImmutableList< short >.Builder **Value** [get, set]

  Sequence of representation identifiers.
- **CompressionSettings CompressionSettings** [get, set]

  Structure that contains the compression settings.

9.50.1 Detailed Description

A modifiable type used to create an immutable **DataRepresentation** (p. 321)

9.50.2 Constructor & Destructor Documentation

9.50.2.1 DataRepresentationBuilder()

```
Rti.Dds.Core.Policy.DataRepresentationBuilder.DataRepresentationBuilder (
            DataRepresentation data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.50.3 Member Function Documentation

9.50.3.1 Build()

```
DataRepresentation Rti.Dds.Core.Policy.DataRepresentationBuilder.Build ( )
```

Creates a new **DataRepresentation** (p. 321) immutable object from this one.

9.50.4 Property Documentation

9.50.4.1 Value

```
ImmutableList<short>.Builder Rti.Dds.Core.Policy.DataRepresentationBuilder.Value [get], [set]
```

Sequence of representation identifiers.

The full documentation is available in the C API: DDS_DataRepresentationQosPolicy_value

9.50.4.2 CompressionSettings

CompressionSettings Rti.Dds.Core.Policy.DataRepresentationBuilder.CompressionSettings [get], [set]

Structure that contains the compression settings.

The full documentation is available in the C API: DDS_DataRepresentationQosPolicy_compression_settings

9.51 Omg.Dds.Subscription.DataState Class Reference

Information about a sample's **SampleState** (p. 65), **ViewState** (p. 65), and **InstanceState** (p. 66).

Inherits IEquatable< DataState >.

Public Member Functions

- **DataState And** (**SampleState** s)

  *Creates a copy of this **DataState** (p. 326) with a new SampleState.*
- **DataState And** (**ViewState** s)

  *Creates a copy of this **DataState** (p. 326) with a new ViewState.*
- **DataState And** (**InstanceState** s)

  *Creates a copy of this **DataState** (p. 326) with a new InstanceState.*
- void **Deconstruct** (out **SampleState** sample, out **ViewState** view, out **InstanceState** instance)

  *Deconstruct operation that allows unpacking a **DataState** (p. 326) into its three values: SampleState, ViewState and InstanceState.*
- bool **Equals** (**DataState** other)

  Equality comparison
- override bool **Equals** (object obj)

  Equality comparison
- override int **GetHashCode** ()

  Get the hash code
- override string **ToString** ()

  Print the three states

Static Public Member Functions

- static **DataState** **With** (**SampleState** s)

  *Creates a **DataState** (p. 326) with a specific SampleState.*
- static **DataState** **With** (**ViewState** s)

  *Creates a **DataState** (p. 326) with a specific ViewState*
- static **DataState** **With** (**InstanceState** s)

  *Creates a **DataState** (p. 326) with a specific InstanceState.*
- static **DataState** **With** (**SampleState** sample= **SampleState.Any**, **ViewState** view= **ViewState.Any**, **InstanceState** instance= **InstanceState.Any**)

  *Creates a **DataState** (p. 326) with specific SampleState, ViewState, and InstanceState.*
- static implicit **operator DataState** (**SampleState** s)

  *Implicit conversion from SampleState to **DataState** (p. 326).*
- static implicit **operator DataState** (**ViewState** s)

  *Implicit conversion from ViewState to **DataState** (p. 326).*
- static implicit **operator DataState** (**InstanceState** s)

  *Implicit conversion from InstanceState to **DataState** (p. 326).*
- static implicit **operator DataState** ((**SampleState** sample, **ViewState** view, **InstanceState** instance) tuple)

  Implicit conversion from a tuple with the three states.

Properties

- **SampleState** **Sample** = **SampleState.Any** `[get]`

  Gets the SampleState
- **ViewState** **View** = **ViewState.Any** `[get]`

  Gets the ViewState.
- **InstanceState** **Instance** = **InstanceState.Any** `[get]`

  Gets the InstanceState.
- static **DataState** **Any** = new **DataState**() `[get]`

  A constant representing any sample, view or instance states.

9.51.1 Detailed Description

Information about a sample's **SampleState** (p. 65), **ViewState** (p. 65), and **InstanceState** (p. 66).

9.51.2 Member Function Documentation

9.51.2.1 With() [1/4]

```
static DataState Omg.Dds.Subscription.DataState.With (
            SampleState s ) [static]
```

Creates a **DataState** (p. 326) with a specific SampleState.

9.51.2.2 With() [2/4]

```
static DataState Omg.Dds.Subscription.DataState.With (
            ViewState s ) [static]
```

Creates a **DataState** (p. 326) with a specific ViewState

9.51.2.3 With() [3/4]

```
static DataState Omg.Dds.Subscription.DataState.With (
            InstanceState s ) [static]
```

Creates a **DataState** (p. 326) with a specific InstanceState.

9.51.2.4 With() [4/4]

```
static DataState Omg.Dds.Subscription.DataState.With (
            SampleState sample = SampleState.Any,
            ViewState view = ViewState.Any,
            InstanceState instance = InstanceState.Any ) [static]
```

Creates a **DataState** (p. 326) with specific SampleState, ViewState, and InstanceState.

9.51.2.5 And() [1/3]

```
DataState Omg.Dds.Subscription.DataState.And (
            SampleState s )
```

Creates a copy of this **DataState** (p. 326) with a new SampleState.

9.51.2.6 And() [2/3]

```
DataState Omg.Dds.Subscription.DataState.And (
            ViewState s )
```

Creates a copy of this **DataState** (p. 326) with a new ViewState.

9.51.2.7 And() [3/3]

```
DataState Omg.Dds.Subscription.DataState.And (
            InstanceState s )
```

Creates a copy of this **DataState** (p. 326) with a new InstanceState.

9.51.2.8 operator DataState() [1/4]

```
static implicit Omg.Dds.Subscription.DataState.operator  DataState (
            SampleState s )  [static]
```

Implicit conversion from SampleState to **DataState** (p. 326).

9.51.2.9 operator DataState() [2/4]

```
static implicit Omg.Dds.Subscription.DataState.operator  DataState (
            ViewState s )  [static]
```

Implicit conversion from ViewState to **DataState** (p. 326).

9.51.2.10 operator DataState() [3/4]

```
static implicit Omg.Dds.Subscription.DataState.operator  DataState (
            InstanceState s )  [static]
```

Implicit conversion from InstanceState to **DataState** (p. 326).

9.51.2.11 operator DataState() [4/4]

```
static implicit Omg.Dds.Subscription.DataState.operator  DataState (
          ( SampleState sample,  ViewState view,  InstanceState instance) tuple )  [static]
```

Implicit conversion from a tuple with the three states.

9.51.2.12 Deconstruct()

```
void Omg.Dds.Subscription.DataState.Deconstruct (
            out  SampleState sample,
            out  ViewState view,
            out  InstanceState instance )
```

Deconstruct operation that allows unpacking a **DataState** (p. 326) into its three values: SampleState, ViewState and InstanceState.

9.51.2.13 Equals() [1/2]

```
bool Omg.Dds.Subscription.DataState.Equals (
             DataState other )  [inline]
```

Equality comparison

9.51.2.14 Equals() [2/2]

```
override bool Omg.Dds.Subscription.DataState.Equals (
            object obj )
```

Equality comparison

9.51.2.15 GetHashCode()

```
override int Omg.Dds.Subscription.DataState.GetHashCode ( )
```

Get the hash code

9.51.2.16 ToString()

```
override string Omg.Dds.Subscription.DataState.ToString ( )
```

Print the three states

9.51.3 Property Documentation

9.51.3.1 Sample

```
SampleState Omg.Dds.Subscription.DataState.Sample =  SampleState.Any  [get]
```

Gets the SampleState

9.51.3.2 View

```
ViewState Omg.Dds.Subscription.DataState.View =  ViewState.Any  [get]
```

Gets the ViewState.

9.51.3.3 Instance

```
InstanceState Omg.Dds.Subscription.DataState.Instance =  InstanceState.Any  [get]
```

Gets the InstanceState.

9.51.3.4 Any

```
DataState Omg.Dds.Subscription.DataState.Any = new  DataState()  [static], [get]
```

A constant representing any sample, view or instance states.

9.52 Omg.Dds.Subscription.DataStateOperations Class Reference

Extensions for **SampleState** (p. 65), **ViewState** (p. 65) and **InstanceState** (p. 66) that allow combining them to form a **DataState** (p. 326)

Static Public Member Functions

- static **DataState And** (this **SampleState** a, **ViewState** b)

  *Creates a **DataState** (p. 326) from a SampleState and a ViewState*
- static **DataState And** (this **SampleState** a, **InstanceState** b)

  *Creates a **DataState** (p. 326) from a SampleState and an InstanceState*
- static **DataState And** (this **ViewState** a, **SampleState** b)

  *Creates a **DataState** (p. 326) from a ViewState and a SampleState*
- static **DataState And** (this **ViewState** a, **InstanceState** b)

  *Creates a **DataState** (p. 326) from a ViewState and an InstanceState*
- static **DataState And** (this **InstanceState** a, **SampleState** b)

  *Creates a **DataState** (p. 326) from an InstanceState and a SampleState*
- static **DataState And** (this **InstanceState** a, **ViewState** b)

  *Creates a **DataState** (p. 326) from an InstanceState and a ViewState*

9.52.1 Detailed Description

Extensions for **SampleState** (p. 65), **ViewState** (p. 65) and **InstanceState** (p. 66) that allow combining them to form a **DataState** (p. 326)

```
DataState ds = SampleState.Read.And(InstanceState.NotAlive).And(ViewState.NotNew);
```

9.52.2 Member Function Documentation

9.52.2.1 And() [1/6]

```
static  DataState Omg.Dds.Subscription.DataStateOperations.And (
             this  SampleState a,
              ViewState b )  [static]
```

Creates a **DataState** (p. 326) from a SampleState and a ViewState

9.52.2.2 And() [2/6]

```
static  DataState Omg.Dds.Subscription.DataStateOperations.And (
             this  SampleState a,
              InstanceState b )  [static]
```

Creates a **DataState** (p. 326) from a SampleState and an InstanceState

9.52.2.3 And() [3/6]

```
static DataState Omg.Dds.Subscription.DataStateOperations.And (
            this ViewState a,
             SampleState b ) [static]
```

Creates a **DataState** (p. 326) from a ViewState and a SampleState

9.52.2.4 And() [4/6]

```
static DataState Omg.Dds.Subscription.DataStateOperations.And (
            this ViewState a,
             InstanceState b ) [static]
```

Creates a **DataState** (p. 326) from a ViewState and an InstanceState

9.52.2.5 And() [5/6]

```
static DataState Omg.Dds.Subscription.DataStateOperations.And (
            this InstanceState a,
             SampleState b ) [static]
```

Creates a **DataState** (p. 326) from an InstanceState and a SampleState

9.52.2.6 And() [6/6]

```
static DataState Omg.Dds.Subscription.DataStateOperations.And (
            this InstanceState a,
             ViewState b ) [static]
```

Creates a **DataState** (p. 326) from an InstanceState and a ViewState

9.53 Rti.Dds.Core.Policy.DataTags Class Reference

Stores name-value (string) pairs that can be used to determine access permissions.

Inherits IEquatable< DataTags >.

Public Member Functions

- **DataTags With** (Action< ImmutableDictionary< string, string >.Builder > build)

  *Creates a new **DataTags** (p. 333) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  *Gets the hash code of **Value** (p. 336).*
- bool **Equals** (**DataTags** other)

  Compares for equality

Static Public Member Functions

- static **DataTags FromDictionary** (IDictionary< string, string > value)

  *Creates a **DataTags** (p. 333) object with the keys and entries in a Dictionary*
- static **DataTags FromDictionary** (ImmutableDictionary< string, string > value)

  *Creates a **DataTags** (p. 333) object with the key-value pairs in a Dictionary*

Properties

- ImmutableDictionary< string, string > **Value** `[get]`

  Gets the dictionary containing the properties
- static **DataTags Default** `[get]`

  Singleton containing the default value, an empty dictionary

9.53.1 Detailed Description

Stores name-value (string) pairs that can be used to determine access permissions.

The full documentation is available in the C API: `DDS_DataTags`

9.53.2 Member Function Documentation

9.53.2.1 FromDictionary() [1/2]

```
static DataTags Rti.Dds.Core.Policy.DataTags.FromDictionary (
            IDictionary< string, string > value ) [static]
```

Creates a **DataTags** (p. 333) object with the keys and entries in a Dictionary

Parameters

value	The key-entry pairs

9.53.2.2 FromDictionary() [2/2]

```
static DataTags Rti.Dds.Core.Policy.DataTags.FromDictionary (
            ImmutableDictionary< string, string > value ) [static]
```

Creates a **DataTags** (p. 333) object with the key-value pairs in a Dictionary

Parameters

value	The key-value pairs

9.53.2.3 With()

```
DataTags Rti.Dds.Core.Policy.DataTags.With (
            Action< ImmutableDictionary< string, string >.Builder > build ) [inline]
```

Creates a new **DataTags** (p. 333) with a set of changes specified in an Action

Parameters

build	An action (typically a lambda function) that receives a dictionary builder containing the current properties and allows adding, removing, or replacing.

Returns

A new **DataTags** (p. 333) with the changes applied by the Action

9.53.2.4 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DataTags.Equals (
            object other )
```

Compares for equality

9.53.2.5 GetHashCode()

```
override int Rti.Dds.Core.Policy.DataTags.GetHashCode ( )
```

Gets the hash code of **Value** (p. 336).

9.53.2.6 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DataTags.Equals (
            DataTags other )  [inline]
```

Compares for equality

9.53.3 Property Documentation

9.53.3.1 Value

```
ImmutableDictionary<string, string> Rti.Dds.Core.Policy.DataTags.Value  [get]
```

Gets the dictionary containing the properties

9.53.3.2 Default

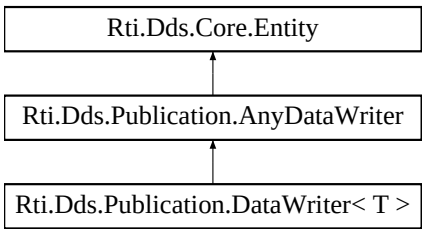
```
DataTags Rti.Dds.Core.Policy.DataTags.Default  [static], [get]
```

Singleton containing the default value, an empty dictionary

9.54 Rti.Dds.Publication.DataWriter< T > Class Template Reference

Allows an application to set the value of the data to be published under a given **Topic**<**T**> (p. 342).

Inheritance diagram for Rti.Dds.Publication.DataWriter< T >:



Public Member Functions

- void **Write** (T sample)

  Modifies the value of a data instance.
- void **Write** (T sample, in **InstanceHandle** instanceHandle)

  Modifies the value of a data instance.
- void **Write** (T sample, **WriteParams** parameters)

  Modifies the value of a data instance and specifies additional parameters.
- override void **WriteUntyped** (object sample)

  *Calls **Write(T)** (p. 338), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.*
- override void **WriteUntyped** (object sample, **WriteParams** parameters)

  *Calls **Write(T, WriteParams)** (p. 338), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.*
- **InstanceHandle RegisterInstance** (T sample)

  Informs the middleware that the application will be modifying a particular instance.
- **InstanceHandle RegisterInstance** (T sample, **WriteParams** parameters)

  Informs DDS that the application will be modifying a particular instance.
- override **InstanceHandle RegisterInstanceUntyped** (object sample)

  *Calls **DataWriter<T>.RegisterInstance(T)** (p. 339), but allows doing so in a context where `T` is not known.*
- override **InstanceHandle RegisterInstanceUntyped** (object sample, **WriteParams** parameters)

  *Calls **DataWriter<T>.RegisterInstance(T, WriteParams)** (p. 339), but allows doing so in a context where `T` is not known.*
- **InstanceHandle LookupInstance** (T keyHolder)

  Retrieve the InstanceHandle that corresponds to an instance key value.
- override **InstanceHandle LookupInstanceUntyped** (object keyHolder)

  *Calls **LookupInstance(T)** (p. 340), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.*
- T **GetKeyValue** (T keyHolder, in **InstanceHandle** instanceHandle)

  Retrieve the instance key that corresponds to an InstanceHandle.
- override object **GetKeyValueUntyped** (object keyHolder, in **InstanceHandle** instanceHandle)

  *Calls **DataWriter<T>.GetKeyValue** (p. 341), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.*
- T **CreateData** ()

  *Creates a data sample for the type of this **DataWriter** (p. 336).*
- override string **ToString** ()

  *Provides a readable summary of information about this **DataWriter** (p. 336).*

Properties

- override **Publisher Publisher** `[get]`

  *Returns the **Publisher** (p. 884) to which the **DataWriter** (p. 336) belongs.*
- **Topic**< T > **Topic** `[get]`

  *Returns the Topic associated with this **DataWriter** (p. 336).*
- override **Topics.IAnyTopic TopicUntyped** `[get]`

  *Returns **Topic** (p. 342)*

9.54.1 Detailed Description

Allows an application to set the value of the data to be published under a given **Topic**<**T**> (p. 342).

The full documentation is available in the C API: DDS_DataWriter

9.54.2 Member Function Documentation

9.54.2.1 Write() [1/3]

```
void Rti.Dds.Publication.DataWriter< T >.Write (
            T sample )
```

Modifies the value of a data instance.

The full documentation is available in the C API: DDSTypedDataWriter_write

9.54.2.2 Write() [2/3]

```
void Rti.Dds.Publication.DataWriter< T >.Write (
            T sample,
            in InstanceHandle instanceHandle )
```

Modifies the value of a data instance.

When writing multiple updates for the same instance, it is recommended to first call **RegisterInstance(T)** (p. 339) and use the instance handle to call this method. In this case this method is more efficient than **Write(T)** (p. 338).

The full documentation is available in the C API: DDSTypedDataWriter_write

9.54.2.3 Write() [3/3]

```
void Rti.Dds.Publication.DataWriter< T >.Write (
            T sample,
             WriteParams parameters )
```

Modifies the value of a data instance and specifies additional parameters.

The full documentation is available in the C API: DDSTypedDataWriter_write_w_params

9.54.2.4 WriteUntyped() [1/2]

```
override void Rti.Dds.Publication.DataWriter< T >.WriteUntyped (
            object sample )  [virtual]
```

Calls **Write(T)** (p. 338), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.

Parameters

sample	The data to write. Its runtime type must be T. Otherwise this operation throws InvalidCastException.

Implements **Rti.Dds.Publication.AnyDataWriter** (p. 163).

9.54.2.5 WriteUntyped() [2/2]

```
override void  Rti.Dds.Publication.DataWriter< T >.WriteUntyped (
            object sample,
             WriteParams parameters )  [virtual]
```

Calls **Write(T, WriteParams)** (p. 338), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.

Parameters

sample	The data to write. Its runtime type must be T. Otherwise this operation throws InvalidCastException.
parameters	Configures the write operation

Implements **Rti.Dds.Publication.AnyDataWriter** (p. 164).

9.54.2.6 RegisterInstance() [1/2]

```
InstanceHandle  Rti.Dds.Publication.DataWriter< T >.RegisterInstance (
            T sample )
```

Informs the middleware that the application will be modifying a particular instance.

The full documentation is available in the C API: `DDSTypedDataWriter_register_instance`

9.54.2.7 RegisterInstance() [2/2]

```
InstanceHandle  Rti.Dds.Publication.DataWriter< T >.RegisterInstance (
            T sample,
             WriteParams parameters )
```

Informs DDS that the application will be modifying a particular instance.

The full documentation is available in the C API: `DDSTypedDataWriter_register_instance`

9.54.2.8 RegisterInstanceUntyped() [1/2]

```
override  InstanceHandle  Rti.Dds.Publication.DataWriter< T >.RegisterInstanceUntyped (
            object sample )  [virtual]
```

Calls **DataWriter<T>.RegisterInstance(T)** (p. 339), but allows doing so in a context where `T` is not known.

Parameters

sample	The instance to register. Its runtime type must be the type of the actual DataWriter<T>. Otherwise this operation throws InvalidCastException.

Implements **Rti.Dds.Publication.AnyDataWriter** (p. 164).

9.54.2.9 RegisterInstanceUntyped() [2/2]

```
override InstanceHandle Rti.Dds.Publication.DataWriter< T >.RegisterInstanceUntyped (
            object sample,
             WriteParams parameters ) [virtual]
```

Calls **DataWriter<T>.RegisterInstance(T, WriteParams)** (p. 339), but allows doing so in a context where T is not known.

Parameters

sample	The instance to register. Its runtime type must be the type of the actual DataWriter<T>. Otherwise this operation throws InvalidCastException.
parameters	Configures the register operation

Implements **Rti.Dds.Publication.AnyDataWriter** (p. 164).

9.54.2.10 LookupInstance()

```
InstanceHandle Rti.Dds.Publication.DataWriter< T >.LookupInstance (
            T keyHolder )
```

Retrieve the InstanceHandle that corresponds to an instance key value.

The full documentation is available in the C API: DDSTypedDataWriter_lookup_instance

9.54.2.11 LookupInstanceUntyped()

```
override InstanceHandle Rti.Dds.Publication.DataWriter< T >.LookupInstanceUntyped (
            object keyHolder ) [virtual]
```

Calls **LookupInstance(T)** (p. 340), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.

Parameters

keyHolder	The key fields of the instance to lookup. The runtime type of keyHolder must be T. Otherwise this operation throws InvalidCastException.

Implements **Rti.Dds.Publication.AnyDataWriter** (p. 165).

9.54.2.12 GetKeyValue()

```
T  Rti.Dds.Publication.DataWriter< T >.GetKeyValue (
             T keyHolder,
             in  InstanceHandle instanceHandle )  [inline]
```

Retrieve the instance key that corresponds to an InstanceHandle.

Parameters

keyHolder	(output) A placeholder to populate the key members
instanceHandle	Identifies the key to look up

Returns

Returns the argument keyHolder

The full documentation is available in the C API: `DDSTypedDataWriter_get_key_value`

9.54.2.13 GetKeyValueUntyped()

```
override object  Rti.Dds.Publication.DataWriter< T >.GetKeyValueUntyped (
             object keyHolder,
             in  InstanceHandle instanceHandle )
```

Calls **DataWriter<T>.GetKeyValue** (p. 341), but allows doing so as an **AnyDataWriter** (p. 161) in a context where T is not known.

Parameters

keyHolder	The obtained key values.
instanceHandle	The **InstanceHandle** (p. 598) corresponding to the instance whose key values we want to obtain. The runtime type of keyHolder must be T. Otherwise this operation throws InvalidCastException.

Returns

The obtained key values.

9.54.2.14 CreateData()

```
T Rti.Dds.Publication.DataWriter< T >.CreateData ( ) [inline]
```

Creates a data sample for the type of this **DataWriter** (p. 336).

The full documentation is available in the C API: DDSTypedDataWriter_create_data

9.54.2.15 ToString()

```
override string Rti.Dds.Publication.DataWriter< T >.ToString ( ) [inline]
```

Provides a readable summary of information about this **DataWriter** (p. 336).

9.54.3 Property Documentation

9.54.3.1 Publisher

```
override Publisher Rti.Dds.Publication.DataWriter< T >. Publisher [get]
```

Returns the **Publisher** (p. 884) to which the **DataWriter** (p. 336) belongs.

The full documentation is available in the C API: DDS_DataWriter_get_publisher

9.54.3.2 Topic

```
Topic<T> Rti.Dds.Publication.DataWriter< T >. Topic [get]
```

Returns the Topic associated with this **DataWriter** (p. 336).

The full documentation is available in the C API: DDS_DataWriter_get_topic

9.54.3.3 TopicUntyped

override **Topics.IAnyTopic** **Rti.Dds.Publication.DataWriter**< T >.TopicUntyped [get]

Returns **Topic** (p. 342)

*The full documentation is available in the C API:*DDS_DataWriter_get_topic

9.55 Rti.Dds.Core.Status.DataWriterCacheStatus Class Reference

The status of the DataWriter's cache. Provides information on cache related metrics such as the number of samples and instances in the DataWriter queue.

Inherits IEquatable< DataWriterCacheStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataWriterCacheStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- long **SampleCountPeak** [get]

  *The highest value of **SampleCount** (p. 345) over the lifetime of the DataWriter.*
- long **SampleCount** [get]

  The number of samples in the DataWriter's queue. This statistic includes meta-samples that represent the unregistration or disposal of an instance.
- long **AliveInstanceCount** [get]

  *The number of instances currently in the DataWriter's queue that have an instance_state equal to **Omg.Dds.Subscription.InstanceState.Alive** (p. 66).*
- long **AliveInstanceCountPeak** [get]

  *The highest value of **AliveInstanceCount** (p. 345) over the lifetime of the DataWriter.*
- long **DisposedInstanceCount** [get]

  *The number of instances currently in the DataWriter's queue that have an instance_state equal to **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) (due to, for example, being disposed via the **Publication.AnyDataWriter.DisposeInstance(in InstanceHandle)** (p. 165) operation).*
- long **DisposedInstanceCountPeak** [get]

  *The highest value of **DisposedInstanceCount** (p. 345) over the lifetime of the DataWriter.*
- long **UnregisteredInstanceCount** [get]

  *The number of instances currently in the DataWriter's queue that the DataWriter has unregistered from via the **Publication.AnyDataWriter.UnregisterInstance(in InstanceHandle)** (p. 165) operation.*
- long **UnregisteredInstanceCountPeak** [get]

  *The highest value of **UnregisteredInstanceCount** (p. 346) over the lifetime of the DataWriter.*

9.55.1 Detailed Description

The status of the DataWriter's cache. Provides information on cache related metrics such as the number of samples and instances in the DataWriter queue.

The full documentation is available in the C API: `DDS_DataWriterCacheStatus`

9.55.2 Member Function Documentation

9.55.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.DataWriterCacheStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.55.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.DataWriterCacheStatus.Equals (
            object other )
```

Compares for equality

9.55.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.DataWriterCacheStatus.Equals (
             DataWriterCacheStatus other )  [inline]
```

Compares for equality

9.55.2.4 ToString()

```
override string Rti.Dds.Core.Status.DataWriterCacheStatus.ToString ( )
```

Returns a readable summary of the status

9.55.3 Property Documentation

9.55.3.1 SampleCountPeak

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.SampleCountPeak [get]
```

The highest value of **SampleCount** (p. 345) over the lifetime of the DataWriter.

The full documentation is available in the C API: DDS_DataWriterCacheStatus_sample_count_peak

9.55.3.2 SampleCount

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.SampleCount [get]
```

The number of samples in the DataWriter's queue. This statistic includes meta-samples that represent the unregistration or disposal of an instance.

The full documentation is available in the C API: DDS_DataWriterCacheStatus_sample_count

9.55.3.3 AliveInstanceCount

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.AliveInstanceCount [get]
```

The number of instances currently in the DataWriter's queue that have an instance_state equal to **Omg.Dds.Subscription.InstanceState.Alive** (p. 66).

The full documentation is available in the C API: DDS_DataWriterCacheStatus_alive_instance_count

9.55.3.4 AliveInstanceCountPeak

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.AliveInstanceCountPeak [get]
```

The highest value of **AliveInstanceCount** (p. 345) over the lifetime of the DataWriter.

The full documentation is available in the C API: DDS_DataWriterCacheStatus_alive_instance_count_peak

9.55.3.5 DisposedInstanceCount

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.DisposedInstanceCount [get]
```

The number of instances currently in the DataWriter's queue that have an instance_state equal to **Omg.Dds.↩ Subscription.InstanceState.NotAliveDisposed** (p. 66) (due to, for example, being disposed via the **Publication.↩ AnyDataWriter.DisposeInstance(in InstanceHandle)** (p. 165) operation).

The full documentation is available in the C API: DDS_DataWriterCacheStatus_disposed_instance↩ _count

9.55.3.6 DisposedInstanceCountPeak

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.DisposedInstanceCountPeak [get]
```

The highest value of **DisposedInstanceCount** (p. 345) over the lifetime of the DataWriter.

The full documentation is available in the C API: DDS_DataWriterCacheStatus_disposed_instance↩ _count_peak

9.55.3.7 UnregisteredInstanceCount

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.UnregisteredInstanceCount [get]
```

The number of instances currently in the DataWriter's queue that the DataWriter has unregistered from via the **Publication.AnyDataWriter.UnregisterInstance(in InstanceHandle)** (p. 165) operation.

The full documentation is available in the C API: DDS_DataWriterCacheStatus_unregistered_↩ instance_count

9.55.3.8 UnregisteredInstanceCountPeak

```
long Rti.Dds.Core.Status.DataWriterCacheStatus.UnregisteredInstanceCountPeak [get]
```

The highest value of **UnregisteredInstanceCount** (p. 346) over the lifetime of the DataWriter.

The full documentation is available in the C API: DDS_DataWriterCacheStatus_unregistered_↩ instance_count_peak

9.56 Rti.Dds.Core.Policy.DataWriterProtocol Class Reference

Configures DDS on-the-wire protocol (RTPS).

Inherits IEquatable< DataWriterProtocol >.

Public Member Functions

- **DataWriterProtocol With** (Action< **DataWriterProtocolBuilder** > build)

  *Creates a new **DataWriterProtocol** (p. 346) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataWriterProtocol** other)

  Compares for equality

Properties

- **Guid VirtualGuid** [get]

  The virtual GUID (Global Unique Identifier).
- uint **RtpsObjectId** [get]

  The RTPS Object ID.
- bool **PushOnWrite** [get]

  Whether to push sample out when write is called.
- bool **DisablePositiveAcks** [get]

  Controls whether or not the writer expects positive acknowledgements from matching readers.
- bool **DisableInlineKeyhash** [get]

  Controls whether or not a keyhash is propagated on the wire with each sample.
- bool **SerializeKeyWithDispose** [get]

  Controls whether or not the serialized key is propagated on the wire with dispose samples.
- bool **PropagateAppAckWithNoResponse** [get]

  *Controls whether or not a Publication.DataWriter< T> receives **Publication.AnyDataWriter.ApplicationAcknowledgement↩ Received** (p. 173) notifications with an empty or invalid response.*
- **RtpsReliableWriterProtocol RtpsReliableWriter** [get]

  *RTPS protocol-related configuration settings for the RTPS reliable writer associated with a Publication.DataWriter<↩ T> . This parameter only has effect if both the writer and the matching reader are configured with **Reliability** (p. 940) **Reliability.Kind** (p. 942).*
- long **InitialVirtualSequenceNumber** [get]

  Determines, the initial virtual sequence number for this DataWriter.
- static **DataWriterProtocol Default** [get]

  *Singleton containing the default value of a **DataWriterProtocol** (p. 346)*

9.56.1 Detailed Description

Configures DDS on-the-wire protocol (RTPS).

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy

9.56.2 Member Function Documentation

9.56.2.1 With()

```
DataWriterProtocol Rti.Dds.Core.Policy.DataWriterProtocol.With (
            Action< DataWriterProtocolBuilder > build ) [inline]
```

Creates a new **DataWriterProtocol** (p. 346) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DataWriterProtocol** (p. 346).

Returns

A new **DataWriterProtocol** (p. 346) with the changes applied by the Action

9.56.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DataWriterProtocol.GetHashCode ( ) [inline]
```

Gets the hash code

9.56.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DataWriterProtocol.Equals (
            object other )
```

Compares for equality

9.56.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DataWriterProtocol.Equals (
             DataWriterProtocol other ) [inline]
```

Compares for equality

9.56.3 Property Documentation

9.56.3.1 VirtualGuid

```
Guid Rti.Dds.Core.Policy.DataWriterProtocol.VirtualGuid [get]
```

The virtual GUID (Global Unique Identifier).

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_virtual_guid

9.56.3.2 RtpsObjectId

```
uint Rti.Dds.Core.Policy.DataWriterProtocol.RtpsObjectId [get]
```

The RTPS Object ID.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_rtps_object_id

9.56.3.3 PushOnWrite

```
bool Rti.Dds.Core.Policy.DataWriterProtocol.PushOnWrite [get]
```

Whether to push sample out when write is called.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_push_on_write

9.56.3.4 DisablePositiveAcks

```
bool Rti.Dds.Core.Policy.DataWriterProtocol.DisablePositiveAcks [get]
```

Controls whether or not the writer expects positive acknowledgements from matching readers.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_disable_positive_acks

9.56.3.5 DisableInlineKeyhash

```
bool Rti.Dds.Core.Policy.DataWriterProtocol.DisableInlineKeyhash [get]
```

Controls whether or not a keyhash is propagated on the wire with each sample.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_disable_inline_keyhash

9.56.3.6 SerializeKeyWithDispose

```
bool Rti.Dds.Core.Policy.DataWriterProtocol.SerializeKeyWithDispose [get]
```

Controls whether or not the serialized key is propagated on the wire with dispose samples.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_serialize_key_with_dispose

9.56.3.7 PropagateAppAckWithNoResponse

```
bool Rti.Dds.Core.Policy.DataWriterProtocol.PropagateAppAckWithNoResponse [get]
```

Controls whether or not a Publication.DataWriter<T> receives **Publication.AnyDataWriter.Application↩ AcknowledgementReceived** (p. 173) notifications with an empty or invalid response.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_propagate_app_ack_with_no_response

9.56.3.8 RtpsReliableWriter

```
RtpsReliableWriterProtocol Rti.Dds.Core.Policy.DataWriterProtocol.RtpsReliableWriter [get]
```

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a Publication.DataWriter<↩ T> . This parameter only has effect if both the writer and the matching reader are configured with **Reliability** (p. 940) **Reliability.Kind** (p. 942).

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_rtps_reliable_writer

9.56.3.9 InitialVirtualSequenceNumber

```
long Rti.Dds.Core.Policy.DataWriterProtocol.InitialVirtualSequenceNumber [get]
```

Determines, the initial virtual sequence number for this DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_initial_virtual_sequence_number

9.56.3.10 Default

```
DataWriterProtocol Rti.Dds.Core.Policy.DataWriterProtocol.Default [static], [get]
```

Singleton containing the default value of a **DataWriterProtocol** (p. 346)

9.57 Rti.Dds.Core.Policy.DataWriterProtocolBuilder Class Reference

A modifiable type used to create an immutable **DataWriterProtocol** (p. 346)

Public Member Functions

- **DataWriterProtocolBuilder** (**DataWriterProtocol** data)

  Creates a builder with the values of an existing immutable instance
- **DataWriterProtocol Build** ()

  *Creates a new **DataWriterProtocol** (p. 346) immutable object from this one.*

Properties

- **Guid VirtualGuid** `[get, set]`

  The virtual GUID (Global Unique Identifier).
- uint **RtpsObjectId** `[get, set]`

  The RTPS Object ID.
- bool **PushOnWrite** `[get, set]`

  Whether to push sample out when write is called.
- bool **DisablePositiveAcks** `[get, set]`

  Controls whether or not the writer expects positive acknowledgements from matching readers.
- bool **DisableInlineKeyhash** `[get, set]`

  Controls whether or not a keyhash is propagated on the wire with each sample.
- bool **SerializeKeyWithDispose** `[get, set]`

  Controls whether or not the serialized key is propagated on the wire with dispose samples.
- bool **PropagateAppAckWithNoResponse** `[get, set]`

  *Controls whether or not a Publication.DataWriter<T> receives **Publication.AnyDataWriter.ApplicationAcknowledgement↩ Received** (p. 173) notifications with an empty or invalid response.*
- **RtpsReliableWriterProtocolBuilder RtpsReliableWriter** `[get, set]`

  *RTPS protocol-related configuration settings for the RTPS reliable writer associated with a Publication.DataWriter<↩ T> . This parameter only has effect if both the writer and the matching reader are configured with **Reliability** (p. 940) **Reliability.Kind** (p. 942).*
- long **InitialVirtualSequenceNumber** `[get, set]`

  Determines, the initial virtual sequence number for this DataWriter.

9.57.1 Detailed Description

A modifiable type used to create an immutable **DataWriterProtocol** (p. 346)

9.57.2 Constructor & Destructor Documentation

9.57.2.1 DataWriterProtocolBuilder()

```
Rti.Dds.Core.Policy.DataWriterProtocolBuilder.DataWriterProtocolBuilder (
            DataWriterProtocol data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.57.3 Member Function Documentation

9.57.3.1 Build()

```
DataWriterProtocol Rti.Dds.Core.Policy.DataWriterProtocolBuilder.Build ( )
```

Creates a new **DataWriterProtocol** (p. 346) immutable object from this one.

9.57.4 Property Documentation

9.57.4.1 VirtualGuid

```
Guid Rti.Dds.Core.Policy.DataWriterProtocolBuilder.VirtualGuid [get], [set]
```

The virtual GUID (Global Unique Identifier).

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_virtual_guid

9.57.4.2 RtpsObjectId

```
uint Rti.Dds.Core.Policy.DataWriterProtocolBuilder.RtpsObjectId [get], [set]
```

The RTPS Object ID.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_rtps_object↩_id

9.57.4.3 PushOnWrite

```
bool Rti.Dds.Core.Policy.DataWriterProtocolBuilder.PushOnWrite [get], [set]
```

Whether to push sample out when write is called.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_push_on_write

9.57.4.4 DisablePositiveAcks

```
bool Rti.Dds.Core.Policy.DataWriterProtocolBuilder.DisablePositiveAcks [get], [set]
```

Controls whether or not the writer expects positive acknowledgements from matching readers.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_disable_positive_acks

9.57.4.5 DisableInlineKeyhash

```
bool Rti.Dds.Core.Policy.DataWriterProtocolBuilder.DisableInlineKeyhash [get], [set]
```

Controls whether or not a keyhash is propagated on the wire with each sample.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_disable_inline_keyhash

9.57.4.6 SerializeKeyWithDispose

```
bool Rti.Dds.Core.Policy.DataWriterProtocolBuilder.SerializeKeyWithDispose [get], [set]
```

Controls whether or not the serialized key is propagated on the wire with dispose samples.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_serialize_key_with_dispose

9.57.4.7 PropagateAppAckWithNoResponse

```
bool Rti.Dds.Core.Policy.DataWriterProtocolBuilder.PropagateAppAckWithNoResponse [get], [set]
```

Controls whether or not a Publication.DataWriter<T> receives **Publication.AnyDataWriter.Application.AcknowledgementReceived** (p. 173) notifications with an empty or invalid response.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_propagate_app_ack_with_no_response

9.57.4.8 RtpsReliableWriter

RtpsReliableWriterProtocolBuilder Rti.Dds.Core.Policy.DataWriterProtocolBuilder.RtpsReliable↩
Writer [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a Publication.DataWriter<↩
T> . This parameter only has effect if both the writer and the matching reader are configured with **Reliability** (p. 940) **Reliability.Kind** (p. 942).

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_rtps_↩
reliable_writer

9.57.4.9 InitialVirtualSequenceNumber

long Rti.Dds.Core.Policy.DataWriterProtocolBuilder.InitialVirtualSequenceNumber [get], [set]

Determines, the initial virtual sequence number for this DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolQosPolicy_initial_↩
virtual_sequence_number

9.58 Rti.Dds.Core.Status.DataWriterProtocolStatus Class Reference

The status of a writer's internal protocol related metrics, like the number of samples pushed and pulled; and status of wire protocol traffic.

Inherits IEquatable< DataWriterProtocolStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataWriterProtocolStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< long > **PushedSampleCount** [get]

  The number of user samples pushed on write from a local DataWriter to a matching remote DataReader.
- **EventCount**< long > **PushedSampleBytes** [get]

  The number of bytes of user samples pushed on write from a local DataWriter to a matching remote DataReader.
- **EventCount**< long > **SentHeartbeatCount** [get]

  The number of Heartbeats sent between a local DataWriter and matching remote DataReader.
- **EventCount**< long > **SentHeartbeatBytes** [get]

  The number of bytes of Heartbeats sent between a local DataWriter and matching remote DataReader.
- **EventCount**< long > **PulledSampleCount** [get]

  The number of user samples pulled from local DataWriter by matching DataReaders.
- **EventCount**< long > **PulledSampleBytes** [get]

  The number of bytes of user samples pulled from local DataWriter by matching DataReaders.
- **EventCount**< long > **ReceivedAckCount** [get]

  The number of ACKs from a remote DataReader received by a local DataWriter.
- **EventCount**< long > **ReceivedAckBytes** [get]

  The number of bytes of ACKs from a remote DataReader received by a local DataWriter.
- **EventCount**< long > **ReceivedNackCount** [get]

  The number of NACKs from a remote DataReader received by a local DataWriter.
- **EventCount**< long > **ReceivedNackBytes** [get]

  The number of bytes of NACKs from a remote DataReader received by a local DataWriter.
- **EventCount**< long > **SentGapCount** [get]

  The number of GAPs sent from local DataWriter to matching remote DataReaders.
- **EventCount**< long > **SentGapBytes** [get]

  The number of bytes of GAPs sent from local DataWriter to matching remote DataReaders.
- **EventCount**< long > **RejectedSampleCount** [get]

  Not supported
- int **SendWindowSize** [get]

  Current maximum number of outstanding samples allowed in the DataWriter's queue.
- long **FirstAvailableSampleSequenceNumber** [get]

  The sequence number of the first available sample currently queued in the local DataWriter.
- long **LastAvailableSampleSequenceNumber** [get]

  The sequence number of the last available sample currently queued in the local DataWriter.
- long **FirstUnacknowledgedSampleSequenceNumber** [get]

  The sequence number of the first unacknowledged sample currently queued in the local DataWriter.
- long **FirstAvailableSampleVirtualSequenceNumber** [get]

  The virtual sequence number of the first available sample currently queued in the local DataWriter.
- long **LastAvailableSampleVirtualSequenceNumber** [get]

  The virtual sequence number of the last available sample currently queued in the local DataWriter.
- long **FirstUnacknowledgedSampleVirtualSequenceNumber** [get]

  The virtual sequence number of the first unacknowledged sample currently queued in the local DataWriter.
- **InstanceHandle FirstUnacknowledgedSampleSubscriptionHandle** [get]

  The handle of a remote DataReader that has not acknowledged the first unacknowledged sample of the local DataWriter.
- long **FirstUnelapsedKeepDurationSampleSequenceNumber** [get]

  The sequence number of the first sample whose keep duration has not yet elapsed.
- long **PushedFragmentCount** [get]

The number of DATA_FRAG messages that have been pushed by this DataWriter.

- long **PushedFragmentBytes** [get]

  The number of bytes of DATA_FRAG messages that have been pushed by this DataWriter.

- long **PulledFragmentCount** [get]

  The number of DATA_FRAG messages that have been pulled from this DataWriter.

- long **PulledFragmentBytes** [get]

  The number of bytes of DATA_FRAG messages that have been pulled from this DataWriter.

- long **ReceivedNackFragmentCount** [get]

  The number of NACK_FRAG messages that have been received by this DataWriter.

- long **ReceivedNackFragmentBytes** [get]

  The number of bytes of NACK_FRAG messages that have been received by this DataWriter.

9.58.1 Detailed Description

The status of a writer's internal protocol related metrics, like the number of samples pushed and pulled; and status of wire protocol traffic.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus

9.58.2 Member Function Documentation

9.58.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.DataWriterProtocolStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.58.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.DataWriterProtocolStatus.Equals (
            object other )
```

Compares for equality

9.58.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.DataWriterProtocolStatus.Equals (
            DataWriterProtocolStatus other )  [inline]
```

Compares for equality

9.58.2.4 ToString()

```
override string Rti.Dds.Core.Status.DataWriterProtocolStatus.ToString ( )
```

Returns a readable summary of the status

9.58.3 Property Documentation

9.58.3.1 PushedSampleCount

```
EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.PushedSampleCount  [get]
```

The number of user samples pushed on write from a local DataWriter to a matching remote DataReader.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pushed_sample_↩count

9.58.3.2 PushedSampleBytes

```
EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.PushedSampleBytes  [get]
```

The number of bytes of user samples pushed on write from a local DataWriter to a matching remote DataReader.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pushed_sample_↩bytes

9.58.3.3 SentHeartbeatCount

```
EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.SentHeartbeatCount  [get]
```

The number of Heartbeats sent between a local DataWriter and matching remote DataReader.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_sent_heartbeat↩_count

9.58.3.4 SentHeartbeatBytes

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.SentHeartbeatBytes [get]

The number of bytes of Heartbeats sent between a local DataWriter and matching remote DataReader.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_sent_heartbeat_bytes

9.58.3.5 PulledSampleCount

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.PulledSampleCount [get]

The number of user samples pulled from local DataWriter by matching DataReaders.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pulled_sample_count

9.58.3.6 PulledSampleBytes

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.PulledSampleBytes [get]

The number of bytes of user samples pulled from local DataWriter by matching DataReaders.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pulled_sample_bytes

9.58.3.7 ReceivedAckCount

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.ReceivedAckCount [get]

The number of ACKs from a remote DataReader received by a local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_received_ack_count

9.58.3.8 ReceivedAckBytes

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.ReceivedAckBytes [get]

The number of bytes of ACKs from a remote DataReader received by a local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_received_ack_bytes

9.58.3.9 ReceivedNackCount

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.ReceivedNackCount [get]

The number of NACKs from a remote DataReader received by a local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_received_nack_↩count

9.58.3.10 ReceivedNackBytes

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.ReceivedNackBytes [get]

The number of bytes of NACKs from a remote DataReader received by a local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_received_nack_↩bytes

9.58.3.11 SentGapCount

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.SentGapCount [get]

The number of GAPs sent from local DataWriter to matching remote DataReaders.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_sent_gap_count

9.58.3.12 SentGapBytes

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.SentGapBytes [get]

The number of bytes of GAPs sent from local DataWriter to matching remote DataReaders.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_sent_gap_bytes

9.58.3.13 RejectedSampleCount

EventCount<long> Rti.Dds.Core.Status.DataWriterProtocolStatus.RejectedSampleCount [get]

Not supported

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_rejected_↩sample_count

9.58.3.14 SendWindowSize

```
int Rti.Dds.Core.Status.DataWriterProtocolStatus.SendWindowSize [get]
```

Current maximum number of outstanding samples allowed in the DataWriter's queue.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_send_window_size

9.58.3.15 FirstAvailableSampleSequenceNumber

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.FirstAvailableSampleSequenceNumber [get]
```

The sequence number of the first available sample currently queued in the local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_first_↩
available_sample_sequence_number

9.58.3.16 LastAvailableSampleSequenceNumber

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.LastAvailableSampleSequenceNumber [get]
```

The sequence number of the last available sample currently queued in the local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_last_available↩
_sample_sequence_number

9.58.3.17 FirstUnacknowledgedSampleSequenceNumber

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.FirstUnacknowledgedSampleSequenceNumber [get]
```

The sequence number of the first unacknowledged sample currently queued in the local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_first_↩
unacknowledged_sample_sequence_number

9.58.3.18 FirstAvailableSampleVirtualSequenceNumber

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.FirstAvailableSampleVirtualSequenceNumber [get]
```

The virtual sequence number of the first available sample currently queued in the local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_first_↩
available_sample_virtual_sequence_number

9.58.3.19 LastAvailableSampleVirtualSequenceNumber

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.LastAvailableSampleVirtualSequenceNumber [get]
```

The virtual sequence number of the last available sample currently queued in the local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_last_available_sample_virtual_sequence_number

9.58.3.20 FirstUnacknowledgedSampleVirtualSequenceNumber

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.FirstUnacknowledgedSampleVirtualSequenceNumber
[get]
```

The virtual sequence number of the first unacknowledged sample currently queued in the local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_first_unacknowledged_sample_virtual_sequence_number

9.58.3.21 FirstUnacknowledgedSampleSubscriptionHandle

```
InstanceHandle Rti.Dds.Core.Status.DataWriterProtocolStatus.FirstUnacknowledgedSampleSubscription
Handle [get]
```

The handle of a remote DataReader that has not acknowledged the first unacknowledged sample of the local DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_first_unacknowledged_sample_subscription_handle

9.58.3.22 FirstUnelapsedKeepDurationSampleSequenceNumber

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.FirstUnelapsedKeepDurationSampleSequenceNumber
[get]
```

The sequence number of the first sample whose keep duration has not yet elapsed.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_first_unelapsed_keep_duration_sample_sequence_number

9.58.3.23 PushedFragmentCount

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.PushedFragmentCount [get]
```

The number of DATA_FRAG messages that have been pushed by this DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pushed_fragment_count

9.58.3.24 PushedFragmentBytes

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.PushedFragmentBytes [get]
```

The number of bytes of DATA_FRAG messages that have been pushed by this DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pushed_↩ fragment_bytes

9.58.3.25 PulledFragmentCount

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.PulledFragmentCount [get]
```

The number of DATA_FRAG messages that have been pulled from this DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pulled_↩ fragment_count

9.58.3.26 PulledFragmentBytes

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.PulledFragmentBytes [get]
```

The number of bytes of DATA_FRAG messages that have been pulled from this DataWriter.

The full documentation is available in the C API: DDS_DataWriterProtocolStatus_pulled_↩ fragment_bytes

9.58.3.27 ReceivedNackFragmentCount

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.ReceivedNackFragmentCount [get]
```

The number of NACK_FRAG messages that have been received by this DataWriter.

*The full documentation is available in the C API:*DDS_DataWriterProtocolStatus_received_nack_↩ fragment_count

9.58.3.28 ReceivedNackFragmentBytes

```
long Rti.Dds.Core.Status.DataWriterProtocolStatus.ReceivedNackFragmentBytes [get]
```

The number of bytes of NACK_FRAG messages that have been received by this DataWriter.

*The full documentation is available in the C API:*DDS_DataWriterProtocolStatus_received_nack_↩ fragment_bytes

9.59 Rti.Dds.Publication.DataWriterQos Class Reference

Container of the QoS policies that a DataWriter<T> supports

Inherits IEquatable< DataWriterQos >.

Public Member Functions

- **DataWriterQos WithDurability** (**Durability** policy)

  *Creates an instance with a new **Durability** (p. 392) policy.*
- **DataWriterQos WithDurability** (Action< **DurabilityBuilder** > build)

  *Creates a new instance with a new **Durability** (p. 392) policy as configured by a build action*
- **DataWriterQos WithDurabilityService** (**DurabilityService** policy)

  *Creates an instance with a new **DurabilityService** (p. 392) policy.*
- **DataWriterQos WithDurabilityService** (Action< **DurabilityServiceBuilder** > build)

  *Creates a new instance with a new **DurabilityService** (p. 392) policy as configured by a build action*
- **DataWriterQos WithDeadline** (**Deadline** policy)

  *Creates an instance with a new **Deadline** (p. 392) policy.*
- **DataWriterQos WithDeadline** (Action< **DeadlineBuilder** > build)

  *Creates a new instance with a new **Deadline** (p. 392) policy as configured by a build action*
- **DataWriterQos WithLatencyBudget** (**LatencyBudget** policy)

  *Creates an instance with a new **LatencyBudget** (p. 392) policy.*
- **DataWriterQos WithLatencyBudget** (Action< **LatencyBudgetBuilder** > build)

  *Creates a new instance with a new **LatencyBudget** (p. 392) policy as configured by a build action*
- **DataWriterQos WithLiveliness** (**Liveliness** policy)

  *Creates an instance with a new **Liveliness** (p. 392) policy.*
- **DataWriterQos WithLiveliness** (Action< **LivelinessBuilder** > build)

  *Creates a new instance with a new **Liveliness** (p. 392) policy as configured by a build action*
- **DataWriterQos WithReliability** (**Reliability** policy)

  *Creates an instance with a new **Reliability** (p. 393) policy.*
- **DataWriterQos WithReliability** (Action< **ReliabilityBuilder** > build)

  *Creates a new instance with a new **Reliability** (p. 393) policy as configured by a build action*
- **DataWriterQos WithDestinationOrder** (**DestinationOrder** policy)

  *Creates an instance with a new **DestinationOrder** (p. 393) policy.*
- **DataWriterQos WithDestinationOrder** (Action< **DestinationOrderBuilder** > build)

  *Creates a new instance with a new **DestinationOrder** (p. 393) policy as configured by a build action*
- **DataWriterQos WithHistory** (**History** policy)

  *Creates an instance with a new **History** (p. 393) policy.*
- **DataWriterQos WithHistory** (Action< **HistoryBuilder** > build)

  *Creates a new instance with a new **History** (p. 393) policy as configured by a build action*
- **DataWriterQos WithResourceLimits** (**ResourceLimits** policy)

  *Creates an instance with a new **ResourceLimits** (p. 393) policy.*
- **DataWriterQos WithResourceLimits** (Action< **ResourceLimitsBuilder** > build)

  *Creates a new instance with a new **ResourceLimits** (p. 393) policy as configured by a build action*
- **DataWriterQos WithTransportPriority** (**TransportPriority** policy)

  *Creates an instance with a new **TransportPriority** (p. 393) policy.*

- **DataWriterQos WithTransportPriority** (Action< **TransportPriorityBuilder** > build)

  *Creates a new instance with a new **TransportPriority** (p. 393) policy as configured by a build action*
- **DataWriterQos WithLifespan** (**Lifespan** policy)

  *Creates an instance with a new **Lifespan** (p. 393) policy.*
- **DataWriterQos WithLifespan** (Action< **LifespanBuilder** > build)

  *Creates a new instance with a new **Lifespan** (p. 393) policy as configured by a build action*
- **DataWriterQos WithUserData** (**UserData** policy)

  *Creates an instance with a new **UserData** (p. 394) policy.*
- **DataWriterQos WithUserData** (Action< ImmutableList< byte >.Builder > build)

  *Creates a new instance with a new **UserData** (p. 394) policy as configured by a build action*
- **DataWriterQos WithOwnership** (**Ownership** policy)

  *Creates an instance with a new **Ownership** (p. 394) policy.*
- **DataWriterQos WithOwnership** (Action< **OwnershipBuilder** > build)

  *Creates a new instance with a new **Ownership** (p. 394) policy as configured by a build action*
- **DataWriterQos WithOwnershipStrength** (**OwnershipStrength** policy)

  *Creates an instance with a new **OwnershipStrength** (p. 394) policy.*
- **DataWriterQos WithOwnershipStrength** (Action< **OwnershipStrengthBuilder** > build)

  *Creates a new instance with a new **OwnershipStrength** (p. 394) policy as configured by a build action*
- **DataWriterQos WithWriterDataLifecycle** (**WriterDataLifecycle** policy)

  *Creates an instance with a new **WriterDataLifecycle** (p. 394) policy.*
- **DataWriterQos WithWriterDataLifecycle** (Action< **WriterDataLifecycleBuilder** > build)

  *Creates a new instance with a new **WriterDataLifecycle** (p. 394) policy as configured by a build action*
- **DataWriterQos WithRepresentation** (**DataRepresentation** policy)

  Creates an instance with a new DataRepresentation policy.
- **DataWriterQos WithRepresentation** (Action< **DataRepresentationBuilder** > build)

  Creates a new instance with a new DataRepresentation policy as configured by a build action
- **DataWriterQos WithDataTags** (**DataTags** policy)

  *Creates an instance with a new **DataTags** (p. 394) policy.*
- **DataWriterQos WithDataTags** (Action< ImmutableDictionary< string, string >.Builder > build)

  *Creates a new instance with a new **DataTags** (p. 394) policy as configured by a build action*
- **DataWriterQos WithWriterResourceLimits** (**DataWriterResourceLimits** policy)

  Creates an instance with a new DataWriterResourceLimits policy.
- **DataWriterQos WithWriterResourceLimits** (Action< **DataWriterResourceLimitsBuilder** > build)

  Creates a new instance with a new DataWriterResourceLimits policy as configured by a build action
- **DataWriterQos WithProtocol** (**DataWriterProtocol** policy)

  Creates an instance with a new DataWriterProtocol policy.
- **DataWriterQos WithProtocol** (Action< **DataWriterProtocolBuilder** > build)

  Creates a new instance with a new DataWriterProtocol policy as configured by a build action
- **DataWriterQos WithTransportSelection** (**TransportSelection** policy)

  *Creates an instance with a new **TransportSelection** (p. 395) policy.*
- **DataWriterQos WithTransportSelection** (Action< **TransportSelectionBuilder** > build)

  *Creates a new instance with a new **TransportSelection** (p. 395) policy as configured by a build action*
- **DataWriterQos WithUnicast** (**TransportUnicast** policy)

  Creates an instance with a new TransportUnicast policy.
- **DataWriterQos WithUnicast** (Action< ImmutableList< **TransportUnicastSettings** >.Builder > build)

  Creates a new instance with a new TransportUnicast policy as configured by a build action
- **DataWriterQos WithPublishMode** (**PublishMode** policy)

*Creates an instance with a new **PublishMode** (p. 395) policy.*

- **DataWriterQos** **WithPublishMode** (Action< **PublishModeBuilder** > build)

  *Creates a new instance with a new **PublishMode** (p. 395) policy as configured by a build action*
- **DataWriterQos** **WithProperty** (**Property** policy)

  *Creates an instance with a new **Property** (p. 395) policy.*
- **DataWriterQos** **WithProperty** (Action< ImmutableDictionary< string, **Property.Entry** >.Builder > build)

  *Creates a new instance with a new **Property** (p. 395) policy as configured by a build action*
- **DataWriterQos** **WithService** (**Service** policy)

  *Creates an instance with a new **Service** (p. 396) policy.*
- **DataWriterQos** **WithService** (Action< **ServiceBuilder** > build)

  *Creates a new instance with a new **Service** (p. 396) policy as configured by a build action*
- **DataWriterQos** **WithBatch** (**Batch** policy)

  *Creates an instance with a new **Batch** (p. 396) policy.*
- **DataWriterQos** **WithBatch** (Action< **BatchBuilder** > build)

  *Creates a new instance with a new **Batch** (p. 396) policy as configured by a build action*
- **DataWriterQos** **WithMultiChannel** (**MultiChannel** policy)

  *Creates an instance with a new **MultiChannel** (p. 396) policy.*
- **DataWriterQos** **WithMultiChannel** (Action< **MultiChannelBuilder** > build)

  *Creates a new instance with a new **MultiChannel** (p. 396) policy as configured by a build action*
- **DataWriterQos** **WithAvailability** (**Availability** policy)

  *Creates an instance with a new **Availability** (p. 396) policy.*
- **DataWriterQos** **WithAvailability** (Action< **AvailabilityBuilder** > build)

  *Creates a new instance with a new **Availability** (p. 396) policy as configured by a build action*
- **DataWriterQos** **WithPublicationName** (**EntityName** policy)

  Creates an instance with a new EntityName policy.
- **DataWriterQos** **WithPublicationName** (Action< **EntityNameBuilder** > build)

  Creates a new instance with a new EntityName policy as configured by a build action
- **DataWriterQos** **WithTopicQueryDispatch** (**TopicQueryDispatch** policy)

  *Creates an instance with a new **TopicQueryDispatch** (p. 396) policy.*
- **DataWriterQos** **WithTopicQueryDispatch** (Action< **TopicQueryDispatchBuilder** > build)

  *Creates a new instance with a new **TopicQueryDispatch** (p. 396) policy as configured by a build action*
- **DataWriterQos** **WithTypeSupport** (**TypeSupport** policy)

  *Creates an instance with a new **TypeSupport** (p. 397) policy.*
- **DataWriterQos** **WithTypeSupport** (Action< **TypeSupportBuilder** > build)

  *Creates a new instance with a new **TypeSupport** (p. 397) policy as configured by a build action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DataWriterQos** other)

  Compares for equality
- override string **ToString** ()

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintFormat** format)

  Returns an XML representation of the QoS object.
- string **ToString** (**DataWriterQos** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintAll** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.

Static Public Member Functions

- static **DataWriterQos FromTopicQos** (**TopicQos** topicQos)

  *Creates a **DataWriterQos** (p. 363) object with the policies of a TopicQos object.*

Properties

- **Durability Durability** [get]

  *Gets the **Durability** (p. 392) policy.*
- **DurabilityService DurabilityService** [get]

  *Gets the **DurabilityService** (p. 392) policy.*
- **Deadline Deadline** [get]

  *Gets the **Deadline** (p. 392) policy.*
- **LatencyBudget LatencyBudget** [get]

  *Gets the **LatencyBudget** (p. 392) policy.*
- **Liveliness Liveliness** [get]

  *Gets the **Liveliness** (p. 392) policy.*
- **Reliability Reliability** [get]

  *Gets the **Reliability** (p. 393) policy.*
- **DestinationOrder DestinationOrder** [get]

  *Gets the **DestinationOrder** (p. 393) policy.*
- **History History** [get]

  *Gets the **History** (p. 393) policy.*
- **ResourceLimits ResourceLimits** [get]

  *Gets the **ResourceLimits** (p. 393) policy.*
- **TransportPriority TransportPriority** [get]

  *Gets the **TransportPriority** (p. 393) policy.*
- **Lifespan Lifespan** [get]

  *Gets the **Lifespan** (p. 393) policy.*
- **UserData UserData** [get]

  *Gets the **UserData** (p. 394) policy.*
- **Ownership Ownership** [get]

  *Gets the **Ownership** (p. 394) policy.*
- **OwnershipStrength OwnershipStrength** [get]

  *Gets the **OwnershipStrength** (p. 394) policy.*
- **WriterDataLifecycle WriterDataLifecycle** [get]

  *Gets the **WriterDataLifecycle** (p. 394) policy.*
- **DataRepresentation Representation** [get]

  Gets the DataRepresentation policy.
- **DataTags DataTags** [get]

  *Gets the **DataTags** (p. 394) policy.*
- **DataWriterResourceLimits WriterResourceLimits** [get]

  Gets the DataWriterResourceLimits policy.
- **DataWriterProtocol Protocol** [get]

  Gets the DataWriterProtocol policy.
- **TransportSelection TransportSelection** [get]

  *Gets the **TransportSelection** (p. 395) policy.*

- **TransportUnicast Unicast** [get]

  Gets the TransportUnicast policy.
- **PublishMode PublishMode** [get]

  *Gets the **PublishMode** (p. 395) policy.*
- **Property Property** [get]

  *Gets the **Property** (p. 395) policy.*
- **Service Service** [get]

  *Gets the **Service** (p. 396) policy.*
- **Batch Batch** [get]

  *Gets the **Batch** (p. 396) policy.*
- **MultiChannel MultiChannel** [get]

  *Gets the **MultiChannel** (p. 396) policy.*
- **Availability Availability** [get]

  *Gets the **Availability** (p. 396) policy.*
- **EntityName PublicationName** [get]

  Gets the EntityName policy.
- **TopicQueryDispatch TopicQueryDispatch** [get]

  *Gets the **TopicQueryDispatch** (p. 396) policy.*
- **TypeSupport TypeSupport** [get]

  *Gets the **TypeSupport** (p. 397) policy.*
- static **DataWriterQos Default** = new **DataWriterQos**() [get]

  *Singleton containing the documented default value of a **DataWriterQos** (p. 363)*

9.59.1 Detailed Description

Container of the QoS policies that a DataWriter<T> supports

*The full documentation is available in the C API:*DDS_DataReaderQos

9.59.2 Member Function Documentation

9.59.2.1 WithDurability() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDurability (
            Durability policy )  [inline]
```

Creates an instance with a new **Durability** (p. 392) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.2 WithDurability() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDurability (
            Action<  DurabilityBuilder > build )
```

Creates a new instance with a new **Durability** (p. 392) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.3 WithDurabilityService() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDurabilityService (
             DurabilityService policy )  [inline]
```

Creates an instance with a new **DurabilityService** (p. 392) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.4 WithDurabilityService() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDurabilityService (
            Action<  DurabilityServiceBuilder > build )
```

Creates a new instance with a new **DurabilityService** (p. 392) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.5 WithDeadline() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDeadline (
            Deadline policy )  [inline]
```

Creates an instance with a new **Deadline** (p. 392) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.6 WithDeadline() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDeadline (
          Action< DeadlineBuilder > build )
```

Creates a new instance with a new **Deadline** (p. 392) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.7 WithLatencyBudget() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithLatencyBudget (
            LatencyBudget policy )  [inline]
```

Creates an instance with a new **LatencyBudget** (p. 392) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.8 WithLatencyBudget() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithLatencyBudget (
          Action< LatencyBudgetBuilder > build )
```

Creates a new instance with a new **LatencyBudget** (p. 392) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.9 WithLiveliness() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithLiveliness (
            Liveliness policy )  [inline]
```

Creates an instance with a new **Liveliness** (p. 392) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.10 WithLiveliness() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithLiveliness (
            Action< LivelinessBuilder > build )
```

Creates a new instance with a new **Liveliness** (p. 392) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.11 WithReliability() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithReliability (
             Reliability policy )  [inline]
```

Creates an instance with a new **Reliability** (p. 393) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.12 WithReliability() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithReliability (
            Action< ReliabilityBuilder > build )
```

Creates a new instance with a new **Reliability** (p. 393) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.13 WithDestinationOrder() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDestinationOrder (
            DestinationOrder policy )  [inline]
```

Creates an instance with a new **DestinationOrder** (p. 393) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.14 WithDestinationOrder() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDestinationOrder (
           Action<  DestinationOrderBuilder > build )
```

Creates a new instance with a new **DestinationOrder** (p. 393) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.15 WithHistory() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithHistory (
            History policy )  [inline]
```

Creates an instance with a new **History** (p. 393) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.16 WithHistory() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithHistory (
          Action< HistoryBuilder > build )
```

Creates a new instance with a new **History** (p. 393) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.17 WithResourceLimits() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithResourceLimits (
            ResourceLimits policy )  [inline]
```

Creates an instance with a new **ResourceLimits** (p. 393) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.18 WithResourceLimits() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithResourceLimits (
            Action<  ResourceLimitsBuilder > build )
```

Creates a new instance with a new **ResourceLimits** (p. 393) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.19 WithTransportPriority() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTransportPriority (
             TransportPriority policy )  [inline]
```

Creates an instance with a new **TransportPriority** (p. 393) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.20 WithTransportPriority() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTransportPriority (
            Action<  TransportPriorityBuilder > build )
```

Creates a new instance with a new **TransportPriority** (p. 393) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.21 WithLifespan() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithLifespan (
            Lifespan policy )  [inline]
```

Creates an instance with a new **Lifespan** (p. 393) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.22 WithLifespan() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithLifespan (
           Action<  LifespanBuilder > build )
```

Creates a new instance with a new **Lifespan** (p. 393) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.23 WithUserData() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithUserData (
            UserData policy )  [inline]
```

Creates an instance with a new **UserData** (p. 394) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.24 WithUserData() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithUserData (
          Action< ImmutableList< byte >.Builder > build )
```

Creates a new instance with a new **UserData** (p. 394) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.25 WithOwnership() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithOwnership (
            Ownership policy )  [inline]
```

Creates an instance with a new **Ownership** (p. 394) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.26 WithOwnership() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithOwnership (
            Action< OwnershipBuilder > build )
```

Creates a new instance with a new **Ownership** (p. 394) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.27 WithOwnershipStrength() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithOwnershipStrength (
             OwnershipStrength policy ) [inline]
```

Creates an instance with a new **OwnershipStrength** (p. 394) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.28 WithOwnershipStrength() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithOwnershipStrength (
            Action< OwnershipStrengthBuilder > build )
```

Creates a new instance with a new **OwnershipStrength** (p. 394) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.29 WithWriterDataLifecycle() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithWriterDataLifecycle (
            WriterDataLifecycle policy )  [inline]
```

Creates an instance with a new **WriterDataLifecycle** (p. 394) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.30 WithWriterDataLifecycle() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithWriterDataLifecycle (
           Action<  WriterDataLifecycleBuilder > build )
```

Creates a new instance with a new **WriterDataLifecycle** (p. 394) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.31 WithRepresentation() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithRepresentation (
            DataRepresentation policy )  [inline]
```

Creates an instance with a new DataRepresentation policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.32 WithRepresentation() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithRepresentation (
          Action< DataRepresentationBuilder > build )
```

Creates a new instance with a new DataRepresentation policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.33 WithDataTags() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDataTags (
            DataTags policy )  [inline]
```

Creates an instance with a new **DataTags** (p. 394) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.34 WithDataTags() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithDataTags (
            Action< ImmutableDictionary< string, string >.Builder > build )
```

Creates a new instance with a new **DataTags** (p. 394) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.35 WithWriterResourceLimits() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithWriterResourceLimits (
             DataWriterResourceLimits policy )  [inline]
```

Creates an instance with a new DataWriterResourceLimits policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.36 WithWriterResourceLimits() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithWriterResourceLimits (
            Action<  DataWriterResourceLimitsBuilder > build )
```

Creates a new instance with a new DataWriterResourceLimits policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.37 WithProtocol() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithProtocol (
            DataWriterProtocol policy )  [inline]
```

Creates an instance with a new DataWriterProtocol policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.38 WithProtocol() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithProtocol (
           Action<  DataWriterProtocolBuilder > build )
```

Creates a new instance with a new DataWriterProtocol policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.39 WithTransportSelection() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTransportSelection (
            TransportSelection policy )  [inline]
```

Creates an instance with a new **TransportSelection** (p. 395) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.40 WithTransportSelection() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTransportSelection (
          Action< TransportSelectionBuilder > build )
```

Creates a new instance with a new **TransportSelection** (p. 395) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.41 WithUnicast() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithUnicast (
            TransportUnicast policy )  [inline]
```

Creates an instance with a new TransportUnicast policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.42 WithUnicast() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithUnicast (
            Action< ImmutableList<  TransportUnicastSettings >.Builder > build )
```

Creates a new instance with a new TransportUnicast policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.43 WithPublishMode() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithPublishMode (
             PublishMode policy )  [inline]
```

Creates an instance with a new **PublishMode** (p. 395) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.44 WithPublishMode() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithPublishMode (
            Action<  PublishModeBuilder > build )
```

Creates a new instance with a new **PublishMode** (p. 395) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.45 WithProperty() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithProperty (
            Property policy )  [inline]
```

Creates an instance with a new **Property** (p. 395) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.46 WithProperty() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithProperty (
          Action< ImmutableDictionary< string,  Property.Entry >.Builder > build )
```

Creates a new instance with a new **Property** (p. 395) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.47 WithService() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithService (
            Service policy )  [inline]
```

Creates an instance with a new **Service** (p. 396) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.48 WithService() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithService (
          Action<  ServiceBuilder > build )
```

Creates a new instance with a new **Service** (p. 396) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.49 WithBatch() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithBatch (
            Batch policy )  [inline]
```

Creates an instance with a new **Batch** (p. 396) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.50 WithBatch() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithBatch (
            Action< BatchBuilder > build )
```

Creates a new instance with a new **Batch** (p. 396) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.51 WithMultiChannel() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithMultiChannel (
             MultiChannel policy )  [inline]
```

Creates an instance with a new **MultiChannel** (p. 396) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.52 WithMultiChannel() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithMultiChannel (
            Action< MultiChannelBuilder > build )
```

Creates a new instance with a new **MultiChannel** (p. 396) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.53 WithAvailability() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithAvailability (
            Availability policy )  [inline]
```

Creates an instance with a new **Availability** (p. 396) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.54 WithAvailability() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithAvailability (
          Action<  AvailabilityBuilder > build )
```

Creates a new instance with a new **Availability** (p. 396) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.55 WithPublicationName() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithPublicationName (
            EntityName policy )  [inline]
```

Creates an instance with a new EntityName policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.56 WithPublicationName() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithPublicationName (
          Action<  EntityNameBuilder > build )
```

Creates a new instance with a new EntityName policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.57 WithTopicQueryDispatch() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTopicQueryDispatch (
            TopicQueryDispatch policy )  [inline]
```

Creates an instance with a new **TopicQueryDispatch** (p. 396) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.58 WithTopicQueryDispatch() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTopicQueryDispatch (
            Action<  TopicQueryDispatchBuilder > build )
```

Creates a new instance with a new **TopicQueryDispatch** (p. 396) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.59 WithTypeSupport() [1/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTypeSupport (
             TypeSupport policy )  [inline]
```

Creates an instance with a new **TypeSupport** (p. 397) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.59.2.60 WithTypeSupport() [2/2]

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.WithTypeSupport (
            Action<  TypeSupportBuilder > build )
```

Creates a new instance with a new **TypeSupport** (p. 397) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.59.2.61 FromTopicQos()

```
static DataWriterQos Rti.Dds.Publication.DataWriterQos.FromTopicQos (
            TopicQos topicQos ) [inline], [static]
```

Creates a **DataWriterQos** (p. 363) object with the policies of a TopicQos object.

9.59.2.62 GetHashCode()

```
override int Rti.Dds.Publication.DataWriterQos.GetHashCode ( ) [inline]
```

Gets the hash code

9.59.2.63 Equals() [1/2]

```
override bool Rti.Dds.Publication.DataWriterQos.Equals (
            object other )
```

Compares for equality

9.59.2.64 Equals() [2/2]

```
bool Rti.Dds.Publication.DataWriterQos.Equals (
            DataWriterQos other ) [inline]
```

Compares for equality

9.59.2.65 ToString() [1/4]

```
override string Rti.Dds.Publication.DataWriterQos.ToString ( )
```

Returns an XML representation of the QoS object.

The output is formatted using the default values for the QosPrintFormat and only QoS policies which differ from the documented default are included.

9.59.2.66 ToString() [2/4]

```
string Rti.Dds.Publication.DataWriterQos.ToString (
            QosPrintFormat format )
```

Returns an XML representation of the QoS object.

Parameters

format	The baseQos profile.

This overload accepts a value for the baseQos. Only the differences between the **DataWriterQos** (p. 363) object being printed and the baseQos are included in the output.

9.59.2.67 ToString() [3/4]

```
string Rti.Dds.Publication.DataWriterQos.ToString (
            DataWriterQos baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	The baseQos profile.
format	the format used to configure the output. If not supplied the output is formatted using the default format.

This overload accepts a value for the baseQos. Only the differences between the **DataWriterQos** (p. 363) object being printed and the baseQos are included in the output.

9.59.2.68 ToString() [4/4]

```
string Rti.Dds.Publication.DataWriterQos.ToString (
            QosPrintAll baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	Used to indicate that the entire QoS object should be included in the output. The only value which should be provided for this argument is QosPrintAll.Value
format	The format used to configure the output. If not supplied, the output is formatted using the default format.

This overload accepts a parameter of type QosPrintAll. Unlike the other ToString overloads, the entire QoS object will be included in the output.

9.59.3 Property Documentation

9.59.3.1 Durability

Durability Rti.Dds.Publication.DataWriterQos.Durability [get]

Gets the **Durability** (p. 392) policy.

9.59.3.2 DurabilityService

DurabilityService Rti.Dds.Publication.DataWriterQos.DurabilityService [get]

Gets the **DurabilityService** (p. 392) policy.

9.59.3.3 Deadline

Deadline Rti.Dds.Publication.DataWriterQos.Deadline [get]

Gets the **Deadline** (p. 392) policy.

9.59.3.4 LatencyBudget

LatencyBudget Rti.Dds.Publication.DataWriterQos.LatencyBudget [get]

Gets the **LatencyBudget** (p. 392) policy.

9.59.3.5 Liveliness

Liveliness Rti.Dds.Publication.DataWriterQos.Liveliness [get]

Gets the **Liveliness** (p. 392) policy.

9.59.3.6 Reliability

Reliability Rti.Dds.Publication.DataWriterQos.Reliability [get]

Gets the **Reliability** (p. 393) policy.

9.59.3.7 DestinationOrder

DestinationOrder Rti.Dds.Publication.DataWriterQos.DestinationOrder [get]

Gets the **DestinationOrder** (p. 393) policy.

9.59.3.8 History

History Rti.Dds.Publication.DataWriterQos.History [get]

Gets the **History** (p. 393) policy.

9.59.3.9 ResourceLimits

ResourceLimits Rti.Dds.Publication.DataWriterQos.ResourceLimits [get]

Gets the **ResourceLimits** (p. 393) policy.

9.59.3.10 TransportPriority

TransportPriority Rti.Dds.Publication.DataWriterQos.TransportPriority [get]

Gets the **TransportPriority** (p. 393) policy.

9.59.3.11 Lifespan

Lifespan Rti.Dds.Publication.DataWriterQos.Lifespan [get]

Gets the **Lifespan** (p. 393) policy.

9.59.3.12 UserData

UserData Rti.Dds.Publication.DataWriterQos.UserData [get]

Gets the **UserData** (p. 394) policy.

9.59.3.13 Ownership

Ownership Rti.Dds.Publication.DataWriterQos.Ownership [get]

Gets the **Ownership** (p. 394) policy.

9.59.3.14 OwnershipStrength

OwnershipStrength Rti.Dds.Publication.DataWriterQos.OwnershipStrength [get]

Gets the **OwnershipStrength** (p. 394) policy.

9.59.3.15 WriterDataLifecycle

WriterDataLifecycle Rti.Dds.Publication.DataWriterQos.WriterDataLifecycle [get]

Gets the **WriterDataLifecycle** (p. 394) policy.

9.59.3.16 Representation

DataRepresentation Rti.Dds.Publication.DataWriterQos.Representation [get]

Gets the DataRepresentation policy.

9.59.3.17 DataTags

DataTags Rti.Dds.Publication.DataWriterQos.DataTags [get]

Gets the **DataTags** (p. 394) policy.

9.59.3.18 WriterResourceLimits

DataWriterResourceLimits Rti.Dds.Publication.DataWriterQos.WriterResourceLimits [get]

Gets the DataWriterResourceLimits policy.

9.59.3.19 Protocol

DataWriterProtocol Rti.Dds.Publication.DataWriterQos.Protocol [get]

Gets the DataWriterProtocol policy.

9.59.3.20 TransportSelection

TransportSelection Rti.Dds.Publication.DataWriterQos.TransportSelection [get]

Gets the **TransportSelection** (p. 395) policy.

9.59.3.21 Unicast

TransportUnicast Rti.Dds.Publication.DataWriterQos.Unicast [get]

Gets the TransportUnicast policy.

9.59.3.22 PublishMode

PublishMode Rti.Dds.Publication.DataWriterQos.PublishMode [get]

Gets the **PublishMode** (p. 395) policy.

9.59.3.23 Property

Property Rti.Dds.Publication.DataWriterQos.Property [get]

Gets the **Property** (p. 395) policy.

9.59.3.24 Service

Service Rti.Dds.Publication.DataWriterQos.Service [get]

Gets the **Service** (p. 396) policy.

9.59.3.25 Batch

Batch Rti.Dds.Publication.DataWriterQos.Batch [get]

Gets the **Batch** (p. 396) policy.

9.59.3.26 MultiChannel

MultiChannel Rti.Dds.Publication.DataWriterQos.MultiChannel [get]

Gets the **MultiChannel** (p. 396) policy.

9.59.3.27 Availability

Availability Rti.Dds.Publication.DataWriterQos.Availability [get]

Gets the **Availability** (p. 396) policy.

9.59.3.28 PublicationName

EntityName Rti.Dds.Publication.DataWriterQos.PublicationName [get]

Gets the EntityName policy.

9.59.3.29 TopicQueryDispatch

```
TopicQueryDispatch Rti.Dds.Publication.DataWriterQos.TopicQueryDispatch [get]
```

Gets the **TopicQueryDispatch** (p. 396) policy.

9.59.3.30 TypeSupport

```
TypeSupport Rti.Dds.Publication.DataWriterQos.TypeSupport [get]
```

Gets the **TypeSupport** (p. 397) policy.

9.59.3.31 Default

```
DataWriterQos Rti.Dds.Publication.DataWriterQos.Default = new DataWriterQos() [static], [get]
```

Singleton containing the documented default value of a **DataWriterQos** (p. 363)

This is a static value containing the documented default values for each policy. Use **Domain.DomainParticipant.↩ DefaultDataWriterQos** (p. 468) for the runtime default value that takes into consideration the current configuration.

9.60 Rti.Dds.Core.Policy.DataWriterResourceLimits Class Reference

Configures how Publication.DataWriter<T>'s allocate and use physical memory for internal resources.

Inherits IEquatable< DataWriterResourceLimits >.

Public Member Functions

- **DataWriterResourceLimits With** (Action< **DataWriterResourceLimitsBuilder** > build)
  *Creates a new **DataWriterResourceLimits** (p. 397) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**DataWriterResourceLimits** other)
  Compares for equality

Properties

- int **InitialConcurrentBlockingThreads** [get]

  The initial number of threads that are allowed to concurrently block on write call on the same Publication.DataWriter<T> .
- int **MaxConcurrentBlockingThreads** [get]

  The maximum number of threads that are allowed to concurrently block on write call on the same Publication.DataWriter<T> .
- int **MaxRemoteReaderFilters** [get]

  The maximum number of remote DataReaders for which the Publication.DataWriter<T> will perform content-based filtering.
- int **InitialBatches** [get]

  Represents the initial number of batches a Publication.DataWriter<T> will manage.
- int **MaxBatches** [get]

  Represents the maximum number of batches a Publication.DataWriter<T> will manage.
- **InstanceReplacementKind InstanceReplacement** [get]

  Sets the kinds of instances allowed to be replaced when instance resource limits are reached.
- bool **ReplaceEmptyInstances** [get]

  Whether or not to replace empty instances during instance replacement
- bool **AutoregisterInstances** [get]

  Whether or not to automatically register new instances
- int **InitialVirtualWriters** [get]

  The initial number of virtual writers supported by a Publication.DataWriter<T>
- int **MaxVirtualWriters** [get]

  The maximum number of virtual writers supported by a Publication.DataWriter<T>
- int **MaxRemoteReaders** [get]

  The maximum number of remote readers supported by a Publication.DataWriter<T>
- int **MaxAppAckRemoteReaders** [get]

  The maximum number of application-level acknowledging remote readers supported by a Publication.DataWriter<T>
- int **InitialActiveTopicQueries** [get]

  Represents the initial number of active topic queries a Publication.DataWriter<T> will manage.
- int **MaxActiveTopicQueries** [get]

  Represents the maximum number of active topic queries a Publication.DataWriter<T> will manage.
- **AllocationSettings WriterLoanedSampleAllocation** [get]

  Represents the allocation settings of loaned samples managed by a Publication.DataWriter<T> .
- bool **InitializeWriterLoanedSample** [get]

  Whether or not to initialize loaned samples returned by a Publication.DataWriter<T>
- int **InitialRemoteReaders** [get]

  The initial number of remote readers supported by a Publication.DataWriter<T>
- static **DataWriterResourceLimits Default** [get]

  *Singleton containing the default value of a **DataWriterResourceLimits** (p. 397)*

9.60.1 Detailed Description

Configures how Publication.DataWriter<T>'s allocate and use physical memory for internal resources.

The full documentation is available in the C API: `DDS_DataWriterResourceLimitsQosPolicy`

9.60.2 Member Function Documentation

9.60.2.1 With()

```
DataWriterResourceLimits Rti.Dds.Core.Policy.DataWriterResourceLimits.With (
            Action< DataWriterResourceLimitsBuilder > build )  [inline]
```

Creates a new **DataWriterResourceLimits** (p. 397) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DataWriterResourceLimits** (p. 397).

Returns

A new **DataWriterResourceLimits** (p. 397) with the changes applied by the Action

9.60.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DataWriterResourceLimits.GetHashCode ( )  [inline]
```

Gets the hash code

9.60.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DataWriterResourceLimits.Equals (
            object other )
```

Compares for equality

9.60.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DataWriterResourceLimits.Equals (
             DataWriterResourceLimits other )  [inline]
```

Compares for equality

9.60.3 Property Documentation

9.60.3.1 InitialConcurrentBlockingThreads

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.InitialConcurrentBlockingThreads [get]
```

The initial number of threads that are allowed to concurrently block on write call on the same Publication.DataWriter<T> .

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_initial_concurrent_blocking_threads

9.60.3.2 MaxConcurrentBlockingThreads

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.MaxConcurrentBlockingThreads [get]
```

The maximum number of threads that are allowed to concurrently block on write call on the same Publication.DataWriter<T> .

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_concurrent_blocking_threads

9.60.3.3 MaxRemoteReaderFilters

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.MaxRemoteReaderFilters [get]
```

The maximum number of remote DataReaders for which the Publication.DataWriter<T> will perform content-based filtering.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_remote_reader_filters

9.60.3.4 InitialBatches

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.InitialBatches [get]
```

Represents the initial number of batches a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_initial_batches

9.60.3.5 MaxBatches

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.MaxBatches [get]
```

Represents the maximum number of batches a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_batches

9.60.3.6 InstanceReplacement

```
InstanceReplacementKind Rti.Dds.Core.Policy.DataWriterResourceLimits.InstanceReplacement [get]
```

Sets the kinds of instances allowed to be replaced when instance resource limits are reached.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_instance_replacement

9.60.3.7 ReplaceEmptyInstances

```
bool Rti.Dds.Core.Policy.DataWriterResourceLimits.ReplaceEmptyInstances [get]
```

Whether or not to replace empty instances during instance replacement

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_replace_empty_instances

9.60.3.8 AutoregisterInstances

```
bool Rti.Dds.Core.Policy.DataWriterResourceLimits.AutoregisterInstances [get]
```

Whether or not to automatically register new instances

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_autoregister_instances

9.60.3.9 InitialVirtualWriters

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.InitialVirtualWriters [get]
```

The initial number of virtual writers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_initial_virtual_writers

9.60.3.10 MaxVirtualWriters

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.MaxVirtualWriters [get]
```

The maximum number of virtual writers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_↩ virtual_writers

9.60.3.11 MaxRemoteReaders

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.MaxRemoteReaders [get]
```

The maximum number of remote readers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_↩ remote_readers

9.60.3.12 MaxAppAckRemoteReaders

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.MaxAppAckRemoteReaders [get]
```

The maximum number of application-level acknowledging remote readers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_↩ app_ack_remote_readers

9.60.3.13 InitialActiveTopicQueries

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.InitialActiveTopicQueries [get]
```

Represents the initial number of active topic queries a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_↩ initial_active_topic_queries

9.60.3.14 MaxActiveTopicQueries

```
int Rti.Dds.Core.Policy.DataWriterResourceLimits.MaxActiveTopicQueries [get]
```

Represents the maximum number of active topic queries a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_↩ active_topic_queries

9.60.3.15 WriterLoanedSampleAllocation

AllocationSettings Rti.Dds.Core.Policy.DataWriterResourceLimits.WriterLoanedSampleAllocation [get]

Represents the allocation settings of loaned samples managed by a Publication.DataWriter<T> .

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_writer_loaned_sample_allocation

9.60.3.16 InitializeWriterLoanedSample

bool Rti.Dds.Core.Policy.DataWriterResourceLimits.InitializeWriterLoanedSample [get]

Whether or not to initialize loaned samples returned by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_initialize_writer_loaned_sample

9.60.3.17 InitialRemoteReaders

int Rti.Dds.Core.Policy.DataWriterResourceLimits.InitialRemoteReaders [get]

The initial number of remote readers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_initial_remote_readers

9.60.3.18 Default

DataWriterResourceLimits Rti.Dds.Core.Policy.DataWriterResourceLimits.Default [static], [get]

Singleton containing the default value of a **DataWriterResourceLimits** (p. 397)

9.61 Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder Class Reference

A modifiable type used to create an immutable **DataWriterResourceLimits** (p. 397)

Public Member Functions

- **DataWriterResourceLimitsBuilder** (**DataWriterResourceLimits** data)
  Creates a builder with the values of an existing immutable instance
- **DataWriterResourceLimits Build** ()
  *Creates a new **DataWriterResourceLimits** (p. 397) immutable object from this one.*

Properties

- int **InitialConcurrentBlockingThreads** [get, set]

  The initial number of threads that are allowed to concurrently block on write call on the same Publication.DataWriter<T> .
- int **MaxConcurrentBlockingThreads** [get, set]

  The maximum number of threads that are allowed to concurrently block on write call on the same Publication.DataWriter<T> .
- int **MaxRemoteReaderFilters** [get, set]

  The maximum number of remote DataReaders for which the Publication.DataWriter<T> will perform content-based filtering.
- int **InitialBatches** [get, set]

  Represents the initial number of batches a Publication.DataWriter<T> will manage.
- int **MaxBatches** [get, set]

  Represents the maximum number of batches a Publication.DataWriter<T> will manage.
- **InstanceReplacementKind InstanceReplacement** [get, set]

  Sets the kinds of instances allowed to be replaced when instance resource limits are reached.
- bool **ReplaceEmptyInstances** [get, set]

  Whether or not to replace empty instances during instance replacement
- bool **AutoregisterInstances** [get, set]

  Whether or not to automatically register new instances
- int **InitialVirtualWriters** [get, set]

  The initial number of virtual writers supported by a Publication.DataWriter<T>
- int **MaxVirtualWriters** [get, set]

  The maximum number of virtual writers supported by a Publication.DataWriter<T>
- int **MaxRemoteReaders** [get, set]

  The maximum number of remote readers supported by a Publication.DataWriter<T>
- int **MaxAppAckRemoteReaders** [get, set]

  The maximum number of application-level acknowledging remote readers supported by a Publication.DataWriter<T>
- int **InitialActiveTopicQueries** [get, set]

  Represents the initial number of active topic queries a Publication.DataWriter<T> will manage.
- int **MaxActiveTopicQueries** [get, set]

  Represents the maximum number of active topic queries a Publication.DataWriter<T> will manage.
- **AllocationSettings WriterLoanedSampleAllocation** [get, set]

  Represents the allocation settings of loaned samples managed by a Publication.DataWriter<T> .
- bool **InitializeWriterLoanedSample** [get, set]

  Whether or not to initialize loaned samples returned by a Publication.DataWriter<T>
- int **InitialRemoteReaders** [get, set]

  The initial number of remote readers supported by a Publication.DataWriter<T>

9.61.1 Detailed Description

A modifiable type used to create an immutable **DataWriterResourceLimits** (p. 397)

9.61.2 Constructor & Destructor Documentation

9.61.2.1 DataWriterResourceLimitsBuilder()

```
Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.DataWriterResourceLimitsBuilder (
            DataWriterResourceLimits data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.61.3 Member Function Documentation

9.61.3.1 Build()

```
DataWriterResourceLimits Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.Build ( )
```

Creates a new **DataWriterResourceLimits** (p. 397) immutable object from this one.

9.61.4 Property Documentation

9.61.4.1 InitialConcurrentBlockingThreads

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.InitialConcurrentBlockingThreads  [get],
[set]
```

The initial number of threads that are allowed to concurrently block on write call on the same Publication.DataWriter<T> .

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_↩ initial_concurrent_blocking_threads

9.61.4.2 MaxConcurrentBlockingThreads

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.MaxConcurrentBlockingThreads  [get], [set]
```

The maximum number of threads that are allowed to concurrently block on write call on the same Publication.Data↩ Writer<T> .

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_↩ concurrent_blocking_threads

9.61.4.3 MaxRemoteReaderFilters

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.MaxRemoteReaderFilters [get], [set]
```

The maximum number of remote DataReaders for which the Publication.DataWriter<T> will perform content-based filtering.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_remote_reader_filters

9.61.4.4 InitialBatches

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.InitialBatches [get], [set]
```

Represents the initial number of batches a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_initial_batches

9.61.4.5 MaxBatches

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.MaxBatches [get], [set]
```

Represents the maximum number of batches a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_batches

9.61.4.6 InstanceReplacement

InstanceReplacementKind Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.InstanceReplacement [get], [set]

Sets the kinds of instances allowed to be replaced when instance resource limits are reached.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_instance_replacement

9.61.4.7 ReplaceEmptyInstances

```
bool Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.ReplaceEmptyInstances [get], [set]
```

Whether or not to replace empty instances during instance replacement

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_replace_empty_instances

9.61.4.8 AutoregisterInstances

```
bool Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.AutoregisterInstances [get], [set]
```

Whether or not to automatically register new instances

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_autoregister_instances

9.61.4.9 InitialVirtualWriters

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.InitialVirtualWriters [get], [set]
```

The initial number of virtual writers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_initial_virtual_writers

9.61.4.10 MaxVirtualWriters

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.MaxVirtualWriters [get], [set]
```

The maximum number of virtual writers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_virtual_writers

9.61.4.11 MaxRemoteReaders

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.MaxRemoteReaders [get], [set]
```

The maximum number of remote readers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_remote_readers

9.61.4.12 MaxAppAckRemoteReaders

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.MaxAppAckRemoteReaders [get], [set]
```

The maximum number of application-level acknowledging remote readers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_app_ack_remote_readers

9.61.4.13 InitialActiveTopicQueries

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.InitialActiveTopicQueries [get], [set]
```

Represents the initial number of active topic queries a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_↩ initial_active_topic_queries

9.61.4.14 MaxActiveTopicQueries

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.MaxActiveTopicQueries [get], [set]
```

Represents the maximum number of active topic queries a Publication.DataWriter<T> will manage.

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_max_↩ active_topic_queries

9.61.4.15 WriterLoanedSampleAllocation

```
AllocationSettings Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.WriterLoanedSampleAllocation
[get], [set]
```

Represents the allocation settings of loaned samples managed by a Publication.DataWriter<T> .

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_↩ writer_loaned_sample_allocation

9.61.4.16 InitializeWriterLoanedSample

```
bool Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.InitializeWriterLoanedSample [get],
[set]
```

Whether or not to initialize loaned samples returned by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_↩ initialize_writer_loaned_sample

9.61.4.17 InitialRemoteReaders

```
int Rti.Dds.Core.Policy.DataWriterResourceLimitsBuilder.InitialRemoteReaders [get], [set]
```

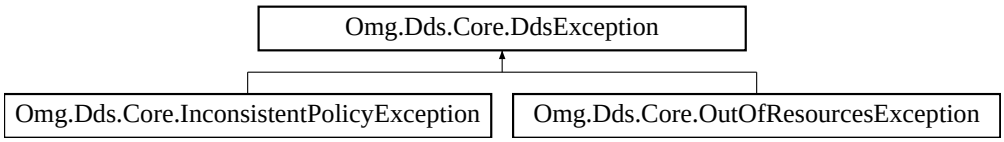
The initial number of remote readers supported by a Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DataWriterResourceLimitsQosPolicy_↩ initial_remote_readers

9.62 Omg.Dds.Core.DdsException Class Reference

Indicates a generic DDS error.

Inheritance diagram for Omg.Dds.Core.DdsException:



Public Member Functions

- **DdsException** ()
  Default constructor

9.62.1 Detailed Description

Indicates a generic DDS error.

9.62.2 Constructor & Destructor Documentation

9.62.2.1 DdsException()

```
Omg.Dds.Core.DdsException.DdsException ( )  [inline]
```

Default constructor

9.63 Rti.Dds.Core.Policy.Deadline Class Reference

Expresses the maximum duration (deadline) within which an

Inherits IEquatable< Deadline >.

Public Member Functions

- **Deadline** (**Duration** period)

  Creates a new instance
- **Deadline With** (Action< **DeadlineBuilder** > build)

  *Creates a new **Deadline** (p. 409) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Deadline** other)

  Compares for equality

Properties

- **Duration Period** [get]

  Duration of the deadline period.
- static **Deadline Default** [get]

  *Singleton containing the default value of a **Deadline** (p. 409)*

9.63.1 Detailed Description

Expresses the maximum duration (deadline) within which an

instance is expected to be updated.

9.63.2 Constructor & Destructor Documentation

9.63.2.1 Deadline()

```
Rti.Dds.Core.Policy.Deadline.Deadline (
            Duration period )
```

Creates a new instance

Parameters

period	The value for **Period** (p. 412)

9.63.3 Member Function Documentation

9.63.3.1 With()

```
Deadline Rti.Dds.Core.Policy.Deadline.With (
            Action< DeadlineBuilder > build )  [inline]
```

Creates a new **Deadline** (p. 409) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Deadline** (p. 409).

Returns

A new **Deadline** (p. 409) with the changes applied by the Action

9.63.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Deadline.GetHashCode ( )  [inline]
```

Gets the hash code

9.63.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Deadline.Equals (
            object other )
```

Compares for equality

9.63.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Deadline.Equals (
             Deadline other )  [inline]
```

Compares for equality

9.63.4 Property Documentation

9.63.4.1 Period

Duration Rti.Dds.Core.Policy.Deadline.Period [get]

Duration of the deadline period.

The full documentation is available in the C API: DDS_DeadlineQosPolicy_period

9.63.4.2 Default

Deadline Rti.Dds.Core.Policy.Deadline.Default [static], [get]

Singleton containing the default value of a **Deadline** (p. 409)

9.64 Rti.Dds.Core.Policy.DeadlineBuilder Class Reference

A modifiable type used to create an immutable **Deadline** (p. 409)

Public Member Functions

- **DeadlineBuilder** (**Deadline** data)
  Creates a builder with the values of an existing immutable instance
- **Deadline Build** ()
  *Creates a new **Deadline** (p. 409) immutable object from this one.*

Properties

- **Duration Period** [get, set]
  Duration of the deadline period.

9.64.1 Detailed Description

A modifiable type used to create an immutable **Deadline** (p. 409)

9.64.2 Constructor & Destructor Documentation

9.64.2.1 DeadlineBuilder()

```
Rti.Dds.Core.Policy.DeadlineBuilder.DeadlineBuilder (
            Deadline data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.64.3 Member Function Documentation

9.64.3.1 Build()

```
Deadline Rti.Dds.Core.Policy.DeadlineBuilder.Build ( )
```

Creates a new **Deadline** (p. 409) immutable object from this one.

9.64.4 Property Documentation

9.64.4.1 Period

```
Duration Rti.Dds.Core.Policy.DeadlineBuilder.Period  [get], [set]
```

Duration of the deadline period.

The full documentation is available in the C API: `DDS_DeadlineQosPolicy_period`

9.65 Rti.Dds.Core.Policy.DestinationOrder Class Reference

Controls how the middleware will deal with data sent by

Inherits IEquatable< DestinationOrder >.

Public Member Functions

- **DestinationOrder With** (Action< **DestinationOrderBuilder** > build)
  *Creates a new **DestinationOrder** (p. 413) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**DestinationOrder** other)
  Compares for equality

Properties

- **DestinationOrderKind Kind** [get]

  Specifies the desired kind of destination order.
- **DestinationOrderScopeKind Scope** [get]

  Specifies the desired scope of the source destination order.
- **Duration SourceTimestampTolerance** [get]

  Allowed tolerance between source timestamps of consecutive samples.
- static **DestinationOrder Default** [get]

  *Singleton containing the default value of a **DestinationOrder*** (p. *413*)

9.65.1 Detailed Description

Controls how the middleware will deal with data sent by

multiple Publication.DataWriter<T> entities for the same instance.

9.65.2 Member Function Documentation

9.65.2.1 With()

```
DestinationOrder Rti.Dds.Core.Policy.DestinationOrder.With (
            Action<  DestinationOrderBuilder > build )  [inline]
```

Creates a new **DestinationOrder** (p. 413) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DestinationOrder** (p. 413).

Returns

A new **DestinationOrder** (p. 413) with the changes applied by the Action

9.65.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DestinationOrder.GetHashCode ( )  [inline]
```

Gets the hash code

9.65.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DestinationOrder.Equals (
            object other )
```

Compares for equality

9.65.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DestinationOrder.Equals (
             DestinationOrder other )  [inline]
```

Compares for equality

9.65.3 Property Documentation

9.65.3.1 Kind

```
DestinationOrderKind Rti.Dds.Core.Policy.DestinationOrder.Kind  [get]
```

Specifies the desired kind of destination order.

The full documentation is available in the C API: DDS_DestinationOrderQosPolicy_kind

9.65.3.2 Scope

```
DestinationOrderScopeKind Rti.Dds.Core.Policy.DestinationOrder.Scope  [get]
```

Specifies the desired scope of the source destination order.

The full documentation is available in the C API: DDS_DestinationOrderQosPolicy_scope

9.65.3.3 SourceTimestampTolerance

```
Duration Rti.Dds.Core.Policy.DestinationOrder.SourceTimestampTolerance  [get]
```

Allowed tolerance between source timestamps of consecutive samples.

The full documentation is available in the C API: DDS_DestinationOrderQosPolicy_source_↩ timestamp_tolerance

9.65.3.4 Default

```
DestinationOrder Rti.Dds.Core.Policy.DestinationOrder.Default  [static], [get]
```

Singleton containing the default value of a **DestinationOrder** (p. 413)

9.66 Rti.Dds.Core.Policy.DestinationOrderBuilder Class Reference

A modifiable type used to create an immutable **DestinationOrder** (p. 413)

Public Member Functions

- **DestinationOrderBuilder** (**DestinationOrder** data)
  Creates a builder with the values of an existing immutable instance
- **DestinationOrder Build** ()
  *Creates a new **DestinationOrder** (p. 413) immutable object from this one.*

Properties

- **DestinationOrderKind Kind** [get, set]
  Specifies the desired kind of destination order.
- **DestinationOrderScopeKind Scope** [get, set]
  Specifies the desired scope of the source destination order.
- **Duration SourceTimestampTolerance** [get, set]
  Allowed tolerance between source timestamps of consecutive samples.

9.66.1 Detailed Description

A modifiable type used to create an immutable **DestinationOrder** (p. 413)

9.66.2 Constructor & Destructor Documentation

9.66.2.1 DestinationOrderBuilder()

```
Rti.Dds.Core.Policy.DestinationOrderBuilder.DestinationOrderBuilder (
            DestinationOrder data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.66.3 Member Function Documentation

9.66.3.1 Build()

```
DestinationOrder Rti.Dds.Core.Policy.DestinationOrderBuilder.Build ( )
```

Creates a new **DestinationOrder** (p. 413) immutable object from this one.

9.66.4 Property Documentation

9.66.4.1 Kind

```
DestinationOrderKind Rti.Dds.Core.Policy.DestinationOrderBuilder.Kind [get], [set]
```

Specifies the desired kind of destination order.

The full documentation is available in the C API: DDS_DestinationOrderQosPolicy_kind

9.66.4.2 Scope

```
DestinationOrderScopeKind Rti.Dds.Core.Policy.DestinationOrderBuilder.Scope [get], [set]
```

Specifies the desired scope of the source destination order.

The full documentation is available in the C API: DDS_DestinationOrderQosPolicy_scope

9.66.4.3 SourceTimestampTolerance

```
Duration Rti.Dds.Core.Policy.DestinationOrderBuilder.SourceTimestampTolerance [get], [set]
```

Allowed tolerance between source timestamps of consecutive samples.

The full documentation is available in the C API: DDS_DestinationOrderQosPolicy_source_↩
timestamp_tolerance

9.67 Rti.Dds.Core.Policy.Discovery Class Reference

Configures the mechanism used by the middleware to automatically discover and connect with new remote applications.

Inherits IEquatable< Discovery >.

Public Member Functions

- **Discovery With** (Action< **DiscoveryBuilder** > build)

  *Creates a new **Discovery** (p. 417) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Discovery** other)

  Compares for equality

Properties

- ImmutableList< string > **EnabledTransports** `[get]`

  *The transports available for use by the **Discovery** (p. 417) mechanism.*
- ImmutableList< string > **InitialPeers** `[get]`

  *Determines the initial list of peers that will be contacted by the **Discovery** (p. 417) mechanism to send announcements about the presence of this participant.*
- ImmutableList< string > **MulticastReceiveAddresses** `[get]`

  *Specifies the multicast group addresses on which discovery-related **meta-traffic** can be received by the Domain↩ Participant.*
- int **MetatrafficTransportPriority** `[get]`

  *The transport priority to use for the **Discovery** (p. 417) meta-traffic.*
- bool **AcceptUnknownPeers** `[get]`

  Whether to accept a new participant that is not in the initial peers list.
- bool **EnableEndpointDiscovery** `[get]`

  Whether to automatically enable endpoint discovery for all the remote participants.
- static **Discovery Default** = CreateDefault() `[get]`

  *Singleton containing the default value of a **Discovery** (p. 417)*

9.67.1 Detailed Description

Configures the mechanism used by the middleware to automatically discover and connect with new remote applications.

The full documentation is available in the C API: `DDS_DiscoveryQosPolicy`

9.67.2 Member Function Documentation

9.67.2.1 With()

```
Discovery Rti.Dds.Core.Policy.Discovery.With (
            Action< DiscoveryBuilder > build ) [inline]
```

Creates a new **Discovery** (p. 417) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Discovery** (p. 417).

Returns

A new **Discovery** (p. 417) with the changes applied by the Action

9.67.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Discovery.GetHashCode ( )  [inline]
```

Gets the hash code

9.67.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Discovery.Equals (
            object other )
```

Compares for equality

9.67.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Discovery.Equals (
             Discovery other )  [inline]
```

Compares for equality

9.67.3 Property Documentation

9.67.3.1 EnabledTransports

```
ImmutableList<string> Rti.Dds.Core.Policy.Discovery.EnabledTransports  [get]
```

The transports available for use by the **Discovery** (p. 417) mechanism.

The full documentation is available in the C API: DDS_DiscoveryQosPolicy_enabled_transports

9.67.3.2 InitialPeers

```
ImmutableList<string> Rti.Dds.Core.Policy.Discovery.InitialPeers [get]
```

Determines the initial list of peers that will be contacted by the **Discovery** (p. 417) mechanism to send announcements about the presence of this participant.

The full documentation is available in the C API: `DDS_DiscoveryQosPolicy_initial_peers`

9.67.3.3 MulticastReceiveAddresses

```
ImmutableList<string> Rti.Dds.Core.Policy.Discovery.MulticastReceiveAddresses [get]
```

Specifies the multicast group addresses on which discovery-related **meta-traffic** can be received by the DomainParticipant.

The full documentation is available in the C API: `DDS_DiscoveryQosPolicy_multicast_receive_addresses`

9.67.3.4 MetatrafficTransportPriority

```
int Rti.Dds.Core.Policy.Discovery.MetatrafficTransportPriority [get]
```

The transport priority to use for the **Discovery** (p. 417) meta-traffic.

The full documentation is available in the C API: `DDS_DiscoveryQosPolicy_metatraffic_transport_priority`

9.67.3.5 AcceptUnknownPeers

```
bool Rti.Dds.Core.Policy.Discovery.AcceptUnknownPeers [get]
```

Whether to accept a new participant that is not in the initial peers list.

The full documentation is available in the C API: `DDS_DiscoveryQosPolicy_accept_unknown_peers`

9.67.3.6 EnableEndpointDiscovery

```
bool Rti.Dds.Core.Policy.Discovery.EnableEndpointDiscovery [get]
```

Whether to automatically enable endpoint discovery for all the remote participants.

The full documentation is available in the C API: `DDS_DiscoveryQosPolicy_enable_endpoint_discovery`

9.67.3.7 Default

```
Discovery Rti.Dds.Core.Policy.Discovery.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **Discovery** (p. 417)

9.68 Rti.Dds.Core.Policy.DiscoveryBuilder Class Reference

A modifiable type used to create an immutable **Discovery** (p. 417)

Public Member Functions

- **DiscoveryBuilder** (**Discovery** data)

  Creates a builder with the values of an existing immutable instance
- **Discovery Build** ()

  *Creates a new **Discovery** (p. 417) immutable object from this one.*

Properties

- ImmutableList< string >.Builder **EnabledTransports** `[get, set]`

  *The transports available for use by the **Discovery** (p. 417) mechanism.*
- ImmutableList< string >.Builder **InitialPeers** `[get, set]`

  *Determines the initial list of peers that will be contacted by the **Discovery** (p. 417) mechanism to send announcements about the presence of this participant.*
- ImmutableList< string >.Builder **MulticastReceiveAddresses** `[get, set]`

  *Specifies the multicast group addresses on which discovery-related **meta-traffic** can be received by the Domain↩ Participant.*
- int **MetatrafficTransportPriority** `[get, set]`

  *The transport priority to use for the **Discovery** (p. 417) meta-traffic.*
- bool **AcceptUnknownPeers** `[get, set]`

  Whether to accept a new participant that is not in the initial peers list.
- bool **EnableEndpointDiscovery** `[get, set]`

  Whether to automatically enable endpoint discovery for all the remote participants.

9.68.1 Detailed Description

A modifiable type used to create an immutable **Discovery** (p. 417)

9.68.2 Constructor & Destructor Documentation

9.68.2.1 DiscoveryBuilder()

```
Rti.Dds.Core.Policy.DiscoveryBuilder.DiscoveryBuilder (
            Discovery data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.68.3 Member Function Documentation

9.68.3.1 Build()

```
Discovery Rti.Dds.Core.Policy.DiscoveryBuilder.Build ( )
```

Creates a new **Discovery** (p. 417) immutable object from this one.

9.68.4 Property Documentation

9.68.4.1 EnabledTransports

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.DiscoveryBuilder.EnabledTransports [get],
[set]
```

The transports available for use by the **Discovery** (p. 417) mechanism.

The full documentation is available in the C API: DDS_DiscoveryQosPolicy_enabled_transports

9.68.4.2 InitialPeers

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.DiscoveryBuilder.InitialPeers [get], [set]
```

Determines the initial list of peers that will be contacted by the **Discovery** (p. 417) mechanism to send announcements about the presence of this participant.

The full documentation is available in the C API: DDS_DiscoveryQosPolicy_initial_peers

9.68.4.3 MulticastReceiveAddresses

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.DiscoveryBuilder.MulticastReceiveAddresses
[get], [set]
```

Specifies the multicast group addresses on which discovery-related **meta-traffic** can be received by the Domain↩ Participant.

The full documentation is available in the C API: DDS_DiscoveryQosPolicy_multicast_receive_↩ addresses

9.68.4.4 MetatrafficTransportPriority

```
int Rti.Dds.Core.Policy.DiscoveryBuilder.MetatrafficTransportPriority [get], [set]
```

The transport priority to use for the **Discovery** (p. 417) meta-traffic.

The full documentation is available in the C API: DDS_DiscoveryQosPolicy_metatraffic_↩ transport_priority

9.68.4.5 AcceptUnknownPeers

```
bool Rti.Dds.Core.Policy.DiscoveryBuilder.AcceptUnknownPeers [get], [set]
```

Whether to accept a new participant that is not in the initial peers list.

*The full documentation is available in the C API:*DDS_DiscoveryQosPolicy_accept_unknown_peers

9.68.4.6 EnableEndpointDiscovery

```
bool Rti.Dds.Core.Policy.DiscoveryBuilder.EnableEndpointDiscovery [get], [set]
```

Whether to automatically enable endpoint discovery for all the remote participants.

The full documentation is available in the C API: DDS_DiscoveryQosPolicy_enable_endpoint_↩ discovery

9.69 Rti.Dds.Core.Policy.DiscoveryConfig Class Reference

Controls how often to send discovery packets, how to determine when participants are alive or dead, and resources used by the discovery mechanism.

Inherits IEquatable< DiscoveryConfig >.

Public Member Functions

- **DiscoveryConfig With** (Action< **DiscoveryConfigBuilder** > build)

  *Creates a new **DiscoveryConfig** (p. 423) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DiscoveryConfig** other)

  Compares for equality

Properties

- **Duration ParticipantLivelinessLeaseDuration** `[get]`

  The liveliness lease duration for the participant.
- **Duration ParticipantLivelinessAssertPeriod** `[get]`

  The period to assert liveliness for the participant.
- **Duration ParticipantAnnouncementPeriod** `[get]`

  *The period at which a participant announces itself to potential peers when using the Simple Participant **Discovery** (p. 417) Protocol 2.0 (SPDP2).*
- **RemoteParticipantPurgeKind RemoteParticipantPurgeKind** `[get]`

  The participant's behavior for maintaining knowledge of remote participants (and their contained entities) with which discovery communication has been lost.
- **Duration MaxLivelinessLossDetectionPeriod** `[get]`

  The maximum amount of time between when a remote entity stops maintaining its liveliness and when the matched local entity realizes that fact.
- int **InitialParticipantAnnouncements** `[get]`

  The number of initial announcements sent when a participant is first enabled.
- int **NewRemoteParticipantAnnouncements** `[get]`

  The number of announcements sent when a remote participant is newly discovered.
- **Duration MinInitialParticipantAnnouncementPeriod** `[get]`

  The minimum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.
- **Duration MaxInitialParticipantAnnouncementPeriod** `[get]`

  The maximum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.
- **BuiltinTopicReaderResourceLimits ParticipantReaderResourceLimits** `[get]`

  Resource limits.
- **RtpsReliableReaderProtocol PublicationReader** `[get]`

  RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in publication reader.
- **BuiltinTopicReaderResourceLimits PublicationReaderResourceLimits** `[get]`

  Resource limits.
- **RtpsReliableReaderProtocol SubscriptionReader** `[get]`

  RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in subscription reader.
- **BuiltinTopicReaderResourceLimits SubscriptionReaderResourceLimits** `[get]`

  Resource limits.
- **RtpsReliableWriterProtocol PublicationWriter** `[get]`

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in publication writer.

- **WriterDataLifecycle PublicationWriterDataLifecycle** [get]

  Writer data lifecycle settings for a built-in publication writer.
- **RtpsReliableWriterProtocol SubscriptionWriter** [get]

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in subscription writer.
- **WriterDataLifecycle SubscriptionWriterDataLifecycle** [get]

  Writer data lifecycle settings for a built-in subscription writer.
- **BuiltinPluginKind BuiltinDiscoveryPlugins** [get]

  The mask kind for built-in discovery plugins.
- **BuiltinChannelsKind EnabledBuiltinChannels** [get]

  The mask for enabled built-in channels.
- **ReliabilityKind ParticipantMessageReaderReliabilityKind** [get]

  Reliability (p. *940*) *policy for a built-in participant message reader.*
- **RtpsReliableReaderProtocol ParticipantMessageReader** [get]

  RTPS reliable reader protocol-related configuration settings for a built-in participant message reader. This parameter only has effect if ***ParticipantMessageReaderReliabilityKind*** (p. *431*) *is set to ReliabilityKind.ReliabilityKind.*
- **RtpsReliableWriterProtocol ParticipantMessageWriter** [get]

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in participant message writer. This parameter only has effect if the matching participant message reader is configured with ReliabilityKind.↩ *ReliabilityKind.*
- **PublishMode PublicationWriterPublishMode** [get]

  Publish mode policy for the built-in publication writer.
- **PublishMode SubscriptionWriterPublishMode** [get]

  Publish mode policy for the built-in subscription writer.
- **AsynchronousPublisher AsynchronousPublisher** [get]

  Asynchronous publishing settings for the discovery ***Publication.Publisher*** (p. *884*) *and all entities that are created by it.*
- **Duration DefaultDomainAnnouncementPeriod** [get]

  The period to announce a participant to the default domain 0.
- bool **IgnoreDefaultDomainAnnouncements** [get]

  Used to ignore the announcements received by a participant on the default domain 0 corresponding to participants running on domains IDs other than 0.
- **RtpsReliableWriterProtocol ServiceRequestWriter** [get]

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in ServiceRequest writer.
- **WriterDataLifecycle ServiceRequestWriterDataLifecycle** [get]

  Writer data lifecycle settings for a built-in ServiceRequest writer.
- **PublishMode ServiceRequestWriterPublishMode** [get]

  Publish mode policy for the built-in service request writer.
- **RtpsReliableReaderProtocol ServiceRequestReader** [get]

  RTPS reliable reader protocol-related configuration settings for a built-in ServiceRequest reader.
- **Duration LocatorReachabilityAssertPeriod** [get]

  Period at which this DomainParticipant will assert the locators discovered from other DomainParticipants.
- **Duration LocatorReachabilityLeaseDuration** [get]

  The time period after which other DomainParticipants can consider one of their locators as "unreachable" if they do not receive a REACHABILITY PING from this DomainParticipant.
- **Duration LocatorReachabilityChangeDetectionPeriod** [get]

  Period at which this DomainParticipant will check if its locators are reachable from other DomainParticipants.
- **RtpsReliableWriterProtocol SecureVolatileWriter** [get]

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in secure volatile writer.
- **PublishMode SecureVolatileWriterPublishMode** [get]

Publish mode policy for the built-in secure volatile writer.

- **RtpsReliableReaderProtocol SecureVolatileReader** [get]

  RTPS reliable reader protocol-related configuration settings for the built-in secure volatile reader.

- int **EndpointTypeObjectLbSerializationThreshold** [get]

  *Option to reduce the size required to propagate a TypeObject in Simple Endpoint **Discovery** (p. 417)*

- **Duration DnsTrackerPollingPeriod** [get]

  Duration that specifies the period used by the DNS tracker to poll the DNS service and check for changes in the hostnames.

- **RtpsReliableReaderProtocol ParticipantConfigurationReader** [get]

  RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in participant configuration reader.

- **BuiltinTopicReaderResourceLimits ParticipantConfigurationReaderResourceLimits** [get]

  Resource limits.

- **RtpsReliableWriterProtocol ParticipantConfigurationWriter** [get]

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in participant configuration writer.

- **WriterDataLifecycle ParticipantConfigurationWriterDataLifecycle** [get]

  Writer data lifecycle settings for a built-in participant configuration writer.

- **PublishMode ParticipantConfigurationWriterPublishMode** [get]

  Publish mode policy for the built-in participant configuration writer.

- String **RequestTypesFilter** [get]

  *Topic name pattern for requesting all types via Type Lookup **Service** (p. 1049).*

- static **DiscoveryConfig Default** = CreateDefault() [get]

  *Singleton containing the default value of a **DiscoveryConfig** (p. 423)*

9.69.1 Detailed Description

Controls how often to send discovery packets, how to determine when participants are alive or dead, and resources used by the discovery mechanism.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy

9.69.2 Member Function Documentation

9.69.2.1 With()

```
DiscoveryConfig Rti.Dds.Core.Policy.DiscoveryConfig.With (
            Action<  DiscoveryConfigBuilder > build )  [inline]
```

Creates a new **DiscoveryConfig** (p. 423) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DiscoveryConfig** (p. 423).

Returns

A new **DiscoveryConfig** (p. 423) with the changes applied by the Action

9.69.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DiscoveryConfig.GetHashCode ( )  [inline]
```

Gets the hash code

9.69.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DiscoveryConfig.Equals (
            object other )
```

Compares for equality

9.69.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DiscoveryConfig.Equals (
             DiscoveryConfig other )  [inline]
```

Compares for equality

9.69.3 Property Documentation

9.69.3.1 ParticipantLivelinessLeaseDuration

```
Duration Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantLivelinessLeaseDuration  [get]
```

The liveliness lease duration for the participant.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ liveliness_lease_duration

9.69.3.2 ParticipantLivelinessAssertPeriod

```
Duration Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantLivelinessAssertPeriod [get]
```

The period to assert liveliness for the participant.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_liveliness_assert_period

9.69.3.3 ParticipantAnnouncementPeriod

```
Duration Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantAnnouncementPeriod [get]
```

The period at which a participant announces itself to potential peers when using the Simple Participant **Discovery** (p. 417) Protocol 2.0 (SPDP2).

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_announcement_period

9.69.3.4 RemoteParticipantPurgeKind

```
RemoteParticipantPurgeKind Rti.Dds.Core.Policy.DiscoveryConfig.RemoteParticipantPurgeKind [get]
```

The participant's behavior for maintaining knowledge of remote participants (and their contained entities) with which discovery communication has been lost.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_remote_participant_purge_kind

9.69.3.5 MaxLivelinessLossDetectionPeriod

```
Duration Rti.Dds.Core.Policy.DiscoveryConfig.MaxLivelinessLossDetectionPeriod [get]
```

The maximum amount of time between when a remote entity stops maintaining its liveliness and when the matched local entity realizes that fact.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_max_liveliness_loss_detection_period

9.69.3.6 InitialParticipantAnnouncements

```
int Rti.Dds.Core.Policy.DiscoveryConfig.InitialParticipantAnnouncements [get]
```

The number of initial announcements sent when a participant is first enabled.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_initial_participant_announcements

9.69.3.7 NewRemoteParticipantAnnouncements

```
int Rti.Dds.Core.Policy.DiscoveryConfig.NewRemoteParticipantAnnouncements [get]
```

The number of announcements sent when a remote participant is newly discovered.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_new_remote_participant_announcements

9.69.3.8 MinInitialParticipantAnnouncementPeriod

```
Duration Rti.Dds.Core.Policy.DiscoveryConfig.MinInitialParticipantAnnouncementPeriod [get]
```

The minimum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_min_initial_participant_announcement_period

9.69.3.9 MaxInitialParticipantAnnouncementPeriod

```
Duration Rti.Dds.Core.Policy.DiscoveryConfig.MaxInitialParticipantAnnouncementPeriod [get]
```

The maximum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_max_initial_participant_announcement_period

9.69.3.10 ParticipantReaderResourceLimits

```
BuiltinTopicReaderResourceLimits Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantReaderResourceLimits [get]
```

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_reader_resource_limits

9.69.3.11 PublicationReader

```
RtpsReliableReaderProtocol Rti.Dds.Core.Policy.DiscoveryConfig.PublicationReader [get]
```

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in publication reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_reader

9.69.3.12 PublicationReaderResourceLimits

BuiltinTopicReaderResourceLimits Rti.Dds.Core.Policy.DiscoveryConfig.PublicationReaderResource↩
Limits [get]

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_↩
reader_resource_limits

9.69.3.13 SubscriptionReader

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.DiscoveryConfig.SubscriptionReader [get]

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in subscription reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_↩
reader

9.69.3.14 SubscriptionReaderResourceLimits

BuiltinTopicReaderResourceLimits Rti.Dds.Core.Policy.DiscoveryConfig.SubscriptionReaderResource↩
Limits [get]

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_↩
reader_resource_limits

9.69.3.15 PublicationWriter

RtpsReliableWriterProtocol Rti.Dds.Core.Policy.DiscoveryConfig.PublicationWriter [get]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_↩
writer

9.69.3.16 PublicationWriterDataLifecycle

WriterDataLifecycle Rti.Dds.Core.Policy.DiscoveryConfig.PublicationWriterDataLifecycle [get]

Writer data lifecycle settings for a built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_↩
writer_data_lifecycle

9.69.3.17 SubscriptionWriter

RtpsReliableWriterProtocol Rti.Dds.Core.Policy.DiscoveryConfig.SubscriptionWriter [get]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in subscription writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_writer

9.69.3.18 SubscriptionWriterDataLifecycle

WriterDataLifecycle Rti.Dds.Core.Policy.DiscoveryConfig.SubscriptionWriterDataLifecycle [get]

Writer data lifecycle settings for a built-in subscription writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_writer_data_lifecycle

9.69.3.19 BuiltinDiscoveryPlugins

BuiltinPluginKind Rti.Dds.Core.Policy.DiscoveryConfig.BuiltinDiscoveryPlugins [get]

The mask kind for built-in discovery plugins.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_builtin_discovery_plugins

9.69.3.20 EnabledBuiltinChannels

BuiltinChannelsKind Rti.Dds.Core.Policy.DiscoveryConfig.EnabledBuiltinChannels [get]

The mask for enabled built-in channels.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_enabled_builtin_channels

9.69.3.21 ParticipantMessageReaderReliabilityKind

ReliabilityKind Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantMessageReaderReliabilityKind [get]

Reliability (p. 940) policy for a built-in participant message reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_message_reader_reliability_kind

9.69.3.22 ParticipantMessageReader

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantMessageReader [get]

RTPS reliable reader protocol-related configuration settings for a built-in participant message reader. This parameter only has effect if **ParticipantMessageReaderReliabilityKind** (p. 431) is set to ReliabilityKind.ReliabilityKind.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ message_reader

9.69.3.23 ParticipantMessageWriter

RtpsReliableWriterProtocol Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantMessageWriter [get]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in participant message writer. This parameter only has effect if the matching participant message reader is configured with ReliabilityKind.↩ ReliabilityKind.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ message_writer

9.69.3.24 PublicationWriterPublishMode

PublishMode Rti.Dds.Core.Policy.DiscoveryConfig.PublicationWriterPublishMode [get]

Publish mode policy for the built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_↩ writer_publish_mode

9.69.3.25 SubscriptionWriterPublishMode

PublishMode Rti.Dds.Core.Policy.DiscoveryConfig.SubscriptionWriterPublishMode [get]

Publish mode policy for the built-in subscription writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_↩ writer_publish_mode

9.69.3.26 AsynchronousPublisher

AsynchronousPublisher Rti.Dds.Core.Policy.DiscoveryConfig.AsynchronousPublisher [get]

Asynchronous publishing settings for the discovery **Publication.Publisher** (p. 884) and all entities that are created by it.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_asynchronous_↩ publisher

9.69.3.27 DefaultDomainAnnouncementPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfig.DefaultDomainAnnouncementPeriod [get]

The period to announce a participant to the default domain 0.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_default_domain_announcement_period

9.69.3.28 IgnoreDefaultDomainAnnouncements

bool Rti.Dds.Core.Policy.DiscoveryConfig.IgnoreDefaultDomainAnnouncements [get]

Used to ignore the announcements received by a participant on the default domain 0 corresponding to participants running on domains IDs other than 0.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_ignore_default_domain_announcements

9.69.3.29 ServiceRequestWriter

RtpsReliableWriterProtocol Rti.Dds.Core.Policy.DiscoveryConfig.ServiceRequestWriter [get]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in ServiceRequest writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_request_writer

9.69.3.30 ServiceRequestWriterDataLifecycle

WriterDataLifecycle Rti.Dds.Core.Policy.DiscoveryConfig.ServiceRequestWriterDataLifecycle [get]

Writer data lifecycle settings for a built-in ServiceRequest writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_request_writer_data_lifecycle

9.69.3.31 ServiceRequestWriterPublishMode

PublishMode Rti.Dds.Core.Policy.DiscoveryConfig.ServiceRequestWriterPublishMode [get]

Publish mode policy for the built-in service request writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_request_writer_publish_mode

9.69.3.32 ServiceRequestReader

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.DiscoveryConfig.ServiceRequestReader [get]

RTPS reliable reader protocol-related configuration settings for a built-in ServiceRequest reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_↩request_reader

9.69.3.33 LocatorReachabilityAssertPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfig.LocatorReachabilityAssertPeriod [get]

Period at which this DomainParticipant will assert the locators discovered from other DomainParticipants.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_locator_↩reachability_assert_period

9.69.3.34 LocatorReachabilityLeaseDuration

Duration Rti.Dds.Core.Policy.DiscoveryConfig.LocatorReachabilityLeaseDuration [get]

The time period after which other DomainParticipants can consider one of their locators as "unreachable" if they do not receive a REACHABILITY PING from this DomainParticipant.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_locator_↩reachability_lease_duration

9.69.3.35 LocatorReachabilityChangeDetectionPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfig.LocatorReachabilityChangeDetectionPeriod [get]

Period at which this DomainParticipant will check if its locators are reachable from other DomainParticipants.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_locator_↩reachability_change_detection_period

9.69.3.36 SecureVolatileWriter

RtpsReliableWriterProtocol Rti.Dds.Core.Policy.DiscoveryConfig.SecureVolatileWriter [get]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in secure volatile writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_secure_↩volatile_writer

9.69.3.37 SecureVolatileWriterPublishMode

PublishMode Rti.Dds.Core.Policy.DiscoveryConfig.SecureVolatileWriterPublishMode [get]

Publish mode policy for the built-in secure volatile writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_secure_↩volatile_writer_publish_mode

9.69.3.38 SecureVolatileReader

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.DiscoveryConfig.SecureVolatileReader [get]

RTPS reliable reader protocol-related configuration settings for the built-in secure volatile reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_secure_↩volatile_reader

9.69.3.39 EndpointTypeObjectLbSerializationThreshold

int Rti.Dds.Core.Policy.DiscoveryConfig.EndpointTypeObjectLbSerializationThreshold [get]

Option to reduce the size required to propagate a TypeObject in Simple Endpoint **Discovery** (p. 417)

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_endpoint_type_↩object_lb_serialization_threshold

9.69.3.40 DnsTrackerPollingPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfig.DnsTrackerPollingPeriod [get]

Duration that specifies the period used by the DNS tracker to poll the DNS service and check for changes in the hostnames.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_dns_tracker_↩polling_period

9.69.3.41 ParticipantConfigurationReader

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantConfigurationReader [get]

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in participant configuration reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩configuration_reader

9.69.3.42 ParticipantConfigurationReaderResourceLimits

BuiltinTopicReaderResourceLimits Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantConfiguration↩
ReaderResourceLimits [get]

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩
configuration_reader_resource_limits

9.69.3.43 ParticipantConfigurationWriter

RtpsReliableWriterProtocol Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantConfigurationWriter
[get]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in participant configuration writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩
configuration_writer

9.69.3.44 ParticipantConfigurationWriterDataLifecycle

WriterDataLifecycle Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantConfigurationWriterData↩
Lifecycle [get]

Writer data lifecycle settings for a built-in participant configuration writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩
configuration_writer_data_lifecycle

9.69.3.45 ParticipantConfigurationWriterPublishMode

PublishMode Rti.Dds.Core.Policy.DiscoveryConfig.ParticipantConfigurationWriterPublishMode [get]

Publish mode policy for the built-in participant configuration writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩
configuration_writer_publish_mode

9.69.3.46 RequestTypesFilter

String Rti.Dds.Core.Policy.DiscoveryConfig.RequestTypesFilter [get]

Topic name pattern for requesting all types via Type Lookup **Service** (p. 1049).

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_request_types_↩
filter

9.69.3.47 Default

```
DiscoveryConfig Rti.Dds.Core.Policy.DiscoveryConfig.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **DiscoveryConfig** (p. 423)

9.70 Rti.Dds.Core.Policy.DiscoveryConfigBuilder Class Reference

A modifiable type used to create an immutable **DiscoveryConfig** (p. 423)

Public Member Functions

- **DiscoveryConfigBuilder** (**DiscoveryConfig** data)

  Creates a builder with the values of an existing immutable instance
- **DiscoveryConfig Build** ()

  *Creates a new **DiscoveryConfig** (p. 423) immutable object from this one.*

Properties

- **Duration ParticipantLivelinessLeaseDuration** [get, set]

  The liveliness lease duration for the participant.
- **Duration ParticipantLivelinessAssertPeriod** [get, set]

  The period to assert liveliness for the participant.
- **Duration ParticipantAnnouncementPeriod** [get, set]

  *The period at which a participant announces itself to potential peers when using the Simple Participant **Discovery** (p. 417) Protocol 2.0 (SPDP2).*
- **RemoteParticipantPurgeKind RemoteParticipantPurgeKind** [get, set]

  The participant's behavior for maintaining knowledge of remote participants (and their contained entities) with which discovery communication has been lost.
- **Duration MaxLivelinessLossDetectionPeriod** [get, set]

  The maximum amount of time between when a remote entity stops maintaining its liveliness and when the matched local entity realizes that fact.
- int **InitialParticipantAnnouncements** [get, set]

  The number of initial announcements sent when a participant is first enabled.
- int **NewRemoteParticipantAnnouncements** [get, set]

  The number of announcements sent when a remote participant is newly discovered.
- **Duration MinInitialParticipantAnnouncementPeriod** [get, set]

  The minimum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.
- **Duration MaxInitialParticipantAnnouncementPeriod** [get, set]

  The maximum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.
- **BuiltinTopicReaderResourceLimitsBuilder ParticipantReaderResourceLimits** [get, set]

  Resource limits.
- **RtpsReliableReaderProtocolBuilder PublicationReader** [get, set]

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in publication reader.

- **BuiltinTopicReaderResourceLimitsBuilder PublicationReaderResourceLimits** `[get, set]`

  Resource limits.
- **RtpsReliableReaderProtocolBuilder SubscriptionReader** `[get, set]`

  RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in subscription reader.
- **BuiltinTopicReaderResourceLimitsBuilder SubscriptionReaderResourceLimits** `[get, set]`

  Resource limits.
- **RtpsReliableWriterProtocolBuilder PublicationWriter** `[get, set]`

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in publication writer.
- **WriterDataLifecycleBuilder PublicationWriterDataLifecycle** `[get, set]`

  Writer data lifecycle settings for a built-in publication writer.
- **RtpsReliableWriterProtocolBuilder SubscriptionWriter** `[get, set]`

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in subscription writer.
- **WriterDataLifecycleBuilder SubscriptionWriterDataLifecycle** `[get, set]`

  Writer data lifecycle settings for a built-in subscription writer.
- **BuiltinPluginKind BuiltinDiscoveryPlugins** `[get, set]`

  The kind mask for built-in discovery plugins.
- **BuiltinChannelsKind EnabledBuiltinChannels** `[get, set]`

  The mask for enabled built-in channels.
- **ReliabilityKind ParticipantMessageReaderReliabilityKind** `[get, set]`

  Reliability (p. *940*) *policy for a built-in participant message reader.*
- **RtpsReliableReaderProtocolBuilder ParticipantMessageReader** `[get, set]`

  RTPS reliable reader protocol-related configuration settings for a built-in participant message reader. This parameter only has effect if ***ParticipantMessageReaderReliabilityKind*** (p. *444*) *is set to ReliabilityKind.ReliabilityKind.*
- **RtpsReliableWriterProtocolBuilder ParticipantMessageWriter** `[get, set]`

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in participant message writer. This parameter only has effect if the matching participant message reader is configured with ReliabilityKind.↩ ReliabilityKind.
- **PublishModeBuilder PublicationWriterPublishMode** `[get, set]`

  Publish mode policy for the built-in publication writer.
- **PublishModeBuilder SubscriptionWriterPublishMode** `[get, set]`

  Publish mode policy for the built-in subscription writer.
- **AsynchronousPublisherBuilder AsynchronousPublisher** `[get, set]`

  Asynchronous publishing settings for the discovery ***Publication.Publisher*** (p. *884*) *and all entities that are created by it.*
- **Duration DefaultDomainAnnouncementPeriod** `[get, set]`

  The period to announce a participant to the default domain 0.
- bool **IgnoreDefaultDomainAnnouncements** `[get, set]`

  Used to ignore the announcements received by a participant on the default domain 0 corresponding to participants running on domains IDs other than 0.
- **RtpsReliableWriterProtocolBuilder ServiceRequestWriter** `[get, set]`

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in ServiceRequest writer.
- **WriterDataLifecycleBuilder ServiceRequestWriterDataLifecycle** `[get, set]`

  Writer data lifecycle settings for a built-in ServiceRequest writer.
- **PublishModeBuilder ServiceRequestWriterPublishMode** `[get, set]`

  Publish mode policy for the built-in service request writer.
- **RtpsReliableReaderProtocolBuilder ServiceRequestReader** `[get, set]`

  RTPS reliable reader protocol-related configuration settings for a built-in ServiceRequest reader.
- **Duration LocatorReachabilityAssertPeriod** `[get, set]`

Period at which this DomainParticipant will assert the locators discovered from other DomainParticipants.

- **Duration LocatorReachabilityLeaseDuration** [get, set]

  The time period after which other DomainParticipants can consider one of their locators as "unreachable" if they do not receive a REACHABILITY PING from this DomainParticipant.

- **Duration LocatorReachabilityChangeDetectionPeriod** [get, set]

  Period at which this DomainParticipant will check if its locators are reachable from other DomainParticipants.

- **RtpsReliableWriterProtocolBuilder SecureVolatileWriter** [get, set]

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in secure volatile writer.

- **PublishModeBuilder SecureVolatileWriterPublishMode** [get, set]

  Publish mode policy for the built-in secure volatile writer.

- **RtpsReliableReaderProtocolBuilder SecureVolatileReader** [get, set]

  RTPS reliable reader protocol-related configuration settings for the built-in secure volatile reader.

- int **EndpointTypeObjectLbSerializationThreshold** [get, set]

  *Option to reduce the size required to propagate a TypeObject in Simple Endpoint **Discovery*** (p. *417)*

- **Duration DnsTrackerPollingPeriod** [get, set]

  Duration that specifies the period used by the DNS tracker to poll the DNS service and check for changes in the hostnames.

- **RtpsReliableReaderProtocolBuilder ParticipantConfigurationReader** [get, set]

  RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in publication reader.

- **BuiltinTopicReaderResourceLimitsBuilder ParticipantConfigurationReaderResourceLimits** [get, set]

  Resource limits.

- **RtpsReliableWriterProtocolBuilder ParticipantConfigurationWriter** [get, set]

  RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in publication writer.

- **WriterDataLifecycleBuilder ParticipantConfigurationWriterDataLifecycle** [get, set]

  Writer data lifecycle settings for a built-in publication writer.

- **PublishModeBuilder ParticipantConfigurationWriterPublishMode** [get, set]

  Publish mode policy for the built-in publication writer.

- String **RequestTypesFilter** [get, set]

  *Topic name pattern for requesting all types via Type Lookup **Service*** (p. *1049).*

9.70.1 Detailed Description

A modifiable type used to create an immutable **DiscoveryConfig** (p. 423)

9.70.2 Constructor & Destructor Documentation

9.70.2.1 DiscoveryConfigBuilder()

```
Rti.Dds.Core.Policy.DiscoveryConfigBuilder.DiscoveryConfigBuilder (
            DiscoveryConfig data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.70.3 Member Function Documentation

9.70.3.1 Build()

DiscoveryConfig Rti.Dds.Core.Policy.DiscoveryConfigBuilder.Build ( )

Creates a new **DiscoveryConfig** (p. 423) immutable object from this one.

9.70.4 Property Documentation

9.70.4.1 ParticipantLivelinessLeaseDuration

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantLivelinessLeaseDuration [get], [set]

The liveliness lease duration for the participant.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ liveliness_lease_duration

9.70.4.2 ParticipantLivelinessAssertPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantLivelinessAssertPeriod [get], [set]

The period to assert liveliness for the participant.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ liveliness_assert_period

9.70.4.3 ParticipantAnnouncementPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantAnnouncementPeriod [get], [set]

The period at which a participant announces itself to potential peers when using the Simple Participant **Discovery** (p. 417) Protocol 2.0 (SPDP2).

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ announcement_period

9.70.4.4 RemoteParticipantPurgeKind

RemoteParticipantPurgeKind Rti.Dds.Core.Policy.DiscoveryConfigBuilder.RemoteParticipantPurgeKind [get], [set]

The participant's behavior for maintaining knowledge of remote participants (and their contained entities) with which discovery communication has been lost.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_remote_participant_purge_kind

9.70.4.5 MaxLivelinessLossDetectionPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.MaxLivelinessLossDetectionPeriod [get], [set]

The maximum amount of time between when a remote entity stops maintaining its liveliness and when the matched local entity realizes that fact.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_max_liveliness_loss_detection_period

9.70.4.6 InitialParticipantAnnouncements

int Rti.Dds.Core.Policy.DiscoveryConfigBuilder.InitialParticipantAnnouncements [get], [set]

The number of initial announcements sent when a participant is first enabled.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_initial_participant_announcements

9.70.4.7 NewRemoteParticipantAnnouncements

int Rti.Dds.Core.Policy.DiscoveryConfigBuilder.NewRemoteParticipantAnnouncements [get], [set]

The number of announcements sent when a remote participant is newly discovered.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_new_remote_participant_announcements

9.70.4.8 MinInitialParticipantAnnouncementPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.MinInitialParticipantAnnouncementPeriod [get], [set]

The minimum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_min_initial_participant_announcement_period

9.70.4.9 MaxInitialParticipantAnnouncementPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.MaxInitialParticipantAnnouncementPeriod [get], [set]

The maximum period between initial announcements when a participant is first enabled or when a remote participant is newly discovered.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_max_initial_↩ participant_announcement_period

9.70.4.10 ParticipantReaderResourceLimits

BuiltinTopicReaderResourceLimitsBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.Participant↩ ReaderResourceLimits [get], [set]

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ reader_resource_limits

9.70.4.11 PublicationReader

RtpsReliableReaderProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.PublicationReader [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in publication reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_↩ reader

9.70.4.12 PublicationReaderResourceLimits

BuiltinTopicReaderResourceLimitsBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.Publication↩ ReaderResourceLimits [get], [set]

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_↩ reader_resource_limits

9.70.4.13 SubscriptionReader

RtpsReliableReaderProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SubscriptionReader [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in subscription reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_↩ reader

9.70.4.14 SubscriptionReaderResourceLimits

BuiltinTopicReaderResourceLimitsBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SubscriptionReaderResourceLimits [get], [set]

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_reader_resource_limits

9.70.4.15 PublicationWriter

RtpsReliableWriterProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.PublicationWriter [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_writer

9.70.4.16 PublicationWriterDataLifecycle

WriterDataLifecycleBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.PublicationWriterDataLifecycle [get], [set]

Writer data lifecycle settings for a built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_writer_data_lifecycle

9.70.4.17 SubscriptionWriter

RtpsReliableWriterProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SubscriptionWriter [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in subscription writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_writer

9.70.4.18 SubscriptionWriterDataLifecycle

WriterDataLifecycleBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SubscriptionWriterDataLifecycle [get], [set]

Writer data lifecycle settings for a built-in subscription writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_writer_data_lifecycle

9.70.4.19 BuiltinDiscoveryPlugins

BuiltinPluginKind Rti.Dds.Core.Policy.DiscoveryConfigBuilder.BuiltinDiscoveryPlugins [get], [set]

The kind mask for built-in discovery plugins.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_builtin_↩ discovery_plugins

9.70.4.20 EnabledBuiltinChannels

BuiltinChannelsKind Rti.Dds.Core.Policy.DiscoveryConfigBuilder.EnabledBuiltinChannels [get], [set]

The mask for enabled built-in channels.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_enabled_↩ builtin_channels

9.70.4.21 ParticipantMessageReaderReliabilityKind

ReliabilityKind Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantMessageReaderReliability↩ Kind [get], [set]

Reliability (p. 940) policy for a built-in participant message reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ message_reader_reliability_kind

9.70.4.22 ParticipantMessageReader

RtpsReliableReaderProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantMessage↩ Reader [get], [set]

RTPS reliable reader protocol-related configuration settings for a built-in participant message reader. This parameter only has effect if **ParticipantMessageReaderReliabilityKind** (p. 444) is set to ReliabilityKind.ReliabilityKind.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ message_reader

9.70.4.23 ParticipantMessageWriter

RtpsReliableWriterProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantMessage↩ Writer [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in participant message writer. This parameter only has effect if the matching participant message reader is configured with ReliabilityKind.↩ ReliabilityKind.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩ message_writer

9.70.4.24 PublicationWriterPublishMode

PublishModeBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.PublicationWriterPublishMode [get], [set]

Publish mode policy for the built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_publication_writer_publish_mode

9.70.4.25 SubscriptionWriterPublishMode

PublishModeBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SubscriptionWriterPublishMode [get], [set]

Publish mode policy for the built-in subscription writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_subscription_writer_publish_mode

9.70.4.26 AsynchronousPublisher

AsynchronousPublisherBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.AsynchronousPublisher [get], [set]

Asynchronous publishing settings for the discovery **Publication.Publisher** (p. 884) and all entities that are created by it.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_asynchronous_publisher

9.70.4.27 DefaultDomainAnnouncementPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.DefaultDomainAnnouncementPeriod [get], [set]

The period to announce a participant to the default domain 0.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_default_domain_announcement_period

9.70.4.28 IgnoreDefaultDomainAnnouncements

bool Rti.Dds.Core.Policy.DiscoveryConfigBuilder.IgnoreDefaultDomainAnnouncements [get], [set]

Used to ignore the announcements received by a participant on the default domain 0 corresponding to participants running on domains IDs other than 0.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_ignore_default_domain_announcements

9.70.4.29 ServiceRequestWriter

RtpsReliableWriterProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ServiceRequestWriter [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in ServiceRequest writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_request_writer

9.70.4.30 ServiceRequestWriterDataLifecycle

WriterDataLifecycleBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ServiceRequestWriterDataLifecycle [get], [set]

Writer data lifecycle settings for a built-in ServiceRequest writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_request_writer_data_lifecycle

9.70.4.31 ServiceRequestWriterPublishMode

PublishModeBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ServiceRequestWriterPublishMode [get], [set]

Publish mode policy for the built-in service request writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_request_writer_publish_mode

9.70.4.32 ServiceRequestReader

RtpsReliableReaderProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ServiceRequestReader [get], [set]

RTPS reliable reader protocol-related configuration settings for a built-in ServiceRequest reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_service_request_reader

9.70.4.33 LocatorReachabilityAssertPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.LocatorReachabilityAssertPeriod [get], [set]

Period at which this DomainParticipant will assert the locators discovered from other DomainParticipants.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_locator_reachability_assert_period

9.70.4.34 LocatorReachabilityLeaseDuration

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.LocatorReachabilityLeaseDuration [get], [set]

The time period after which other DomainParticipants can consider one of their locators as "unreachable" if they do not receive a REACHABILITY PING from this DomainParticipant.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_locator_↩ reachability_lease_duration

9.70.4.35 LocatorReachabilityChangeDetectionPeriod

Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.LocatorReachabilityChangeDetectionPeriod [get], [set]

Period at which this DomainParticipant will check if its locators are reachable from other DomainParticipants.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_locator_↩ reachability_change_detection_period

9.70.4.36 SecureVolatileWriter

RtpsReliableWriterProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SecureVolatileWriter [get], [set]

RTPS protocol-related configuration settings for the RTPS reliable writer associated with the built-in secure volatile writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_secure_↩ volatile_writer

9.70.4.37 SecureVolatileWriterPublishMode

PublishModeBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SecureVolatileWriterPublishMode [get], [set]

Publish mode policy for the built-in secure volatile writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_secure_↩ volatile_writer_publish_mode

9.70.4.38 SecureVolatileReader

RtpsReliableReaderProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.SecureVolatileReader [get], [set]

RTPS reliable reader protocol-related configuration settings for the built-in secure volatile reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_secure_↩ volatile_reader

9.70.4.39 EndpointTypeObjectLbSerializationThreshold

```
int Rti.Dds.Core.Policy.DiscoveryConfigBuilder.EndpointTypeObjectLbSerializationThreshold [get],
[set]
```

Option to reduce the size required to propagate a TypeObject in Simple Endpoint **Discovery** (p. 417)

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_endpoint_type_object_lb_serialization_threshold

9.70.4.40 DnsTrackerPollingPeriod

```
Duration Rti.Dds.Core.Policy.DiscoveryConfigBuilder.DnsTrackerPollingPeriod [get], [set]
```

Duration that specifies the period used by the DNS tracker to poll the DNS service and check for changes in the hostnames.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_dns_tracker_polling_period

9.70.4.41 ParticipantConfigurationReader

```
RtpsReliableReaderProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantConfiguration
Reader [get], [set]
```

RTPS protocol-related configuration settings for the RTPS reliable reader associated with a built-in publication reader.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_configuration_reader

9.70.4.42 ParticipantConfigurationReaderResourceLimits

```
BuiltinTopicReaderResourceLimitsBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.Participant
ConfigurationReaderResourceLimits [get], [set]
```

Resource limits.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_configuration_reader_resource_limits

9.70.4.43 ParticipantConfigurationWriter

```
RtpsReliableWriterProtocolBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantConfiguration
Writer [get], [set]
```

RTPS protocol-related configuration settings for the RTPS reliable writer associated with a built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_configuration_writer

9.70.4.44 ParticipantConfigurationWriterDataLifecycle

WriterDataLifecycleBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantConfiguration↩
WriterDataLifecycle [get], [set]

Writer data lifecycle settings for a built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩
configuration_writer_data_lifecycle

9.70.4.45 ParticipantConfigurationWriterPublishMode

PublishModeBuilder Rti.Dds.Core.Policy.DiscoveryConfigBuilder.ParticipantConfigurationWriter↩
PublishMode [get], [set]

Publish mode policy for the built-in publication writer.

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_participant_↩
configuration_writer_publish_mode

9.70.4.46 RequestTypesFilter

String Rti.Dds.Core.Policy.DiscoveryConfigBuilder.RequestTypesFilter [get], [set]

Topic name pattern for requesting all types via Type Lookup **Service** (p. 1049).

The full documentation is available in the C API: DDS_DiscoveryConfigQosPolicy_request_types_↩
filter

9.71 Rti.Utility.DiscoverySnapshot Class Reference

Utility (p. 123) that takes discovery snapshot for DomainParticipant, DataWriter and DataReader entities.

Static Public Member Functions

- static void **TakeSnapshot** (**DomainParticipant** participant)

  Take a snapshot of the remote participants discovered by a local one.
- static void **TakeSnapshot** (**DomainParticipant** participant, string fileName)

  Take a snapshot of the remote participants discovered by a local one.
- static void **TakeSnapshot** (**AnyDataWriter** writer)

  Take a snapshot of the compatible and incompatible remote readers matched by a local writer.
- static void **TakeSnapshot** (**AnyDataWriter** writer, string fileName)

  Take a snapshot of the compatible and incompatible remote readers matched by a local writer.
- static void **TakeSnapshot** (**AnyDataReader** reader)

  Take a snapshot of the compatible and incompatible remote writers matched by a local reader.
- static void **TakeSnapshot** (**AnyDataReader** reader, string fileName)

  Take a snapshot of the compatible and incompatible remote writers matched by a local reader.

9.71.1 Detailed Description

Utility (p. 123) that takes discovery snapshot for DomainParticipant, DataWriter and DataReader entities.

9.71.2 Member Function Documentation

9.71.2.1 TakeSnapshot() [1/6]

```
static void Rti.Utility.DiscoverySnapshot.TakeSnapshot (
              DomainParticipant participant )  [inline], [static]
```

Take a snapshot of the remote participants discovered by a local one.

The full documentation is available in the C API: DDS_DomainParticipant_take_discovery_snapshot

9.71.2.2 TakeSnapshot() [2/6]

```
static void Rti.Utility.DiscoverySnapshot.TakeSnapshot (
              DomainParticipant participant,
             string fileName )  [inline], [static]
```

Take a snapshot of the remote participants discovered by a local one.

The full documentation is available in the C API: DDS_DomainParticipant_take_discovery_↩ snapshot_file

9.71.2.3 TakeSnapshot() [3/6]

```
static void Rti.Utility.DiscoverySnapshot.TakeSnapshot (
              AnyDataWriter writer )  [inline], [static]
```

Take a snapshot of the compatible and incompatible remote readers matched by a local writer.

The full documentation is available in the C API: DDS_DataWriter_take_discovery_snapshot

9.71.2.4 TakeSnapshot() [4/6]

```
static void Rti.Utility.DiscoverySnapshot.TakeSnapshot (
              AnyDataWriter writer,
             string fileName )  [inline], [static]
```

Take a snapshot of the compatible and incompatible remote readers matched by a local writer.

The full documentation is available in the C API: DDS_DataWriter_take_discovery_snapshot_file

9.71.2.5 TakeSnapshot() [5/6]

```
static void Rti.Utility.DiscoverySnapshot.TakeSnapshot (
              AnyDataReader reader )  [inline], [static]
```

Take a snapshot of the compatible and incompatible remote writers matched by a local reader.

The full documentation is available in the C API: `DDS_DataReader_take_discovery_snapshot`

9.71.2.6 TakeSnapshot() [6/6]

```
static void Rti.Utility.DiscoverySnapshot.TakeSnapshot (
              AnyDataReader reader,
             string fileName )  [inline], [static]
```

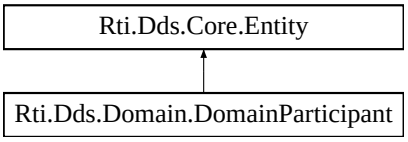
Take a snapshot of the compatible and incompatible remote writers matched by a local reader.

The full documentation is available in the C API: `DDS_DataReader_take_discovery_snapshot_file`

9.72 Rti.Dds.Domain.DomainParticipant Class Reference

Container for all other Entity objects.

Inheritance diagram for Rti.Dds.Domain.DomainParticipant:



Public Member Functions

- **Topic**< T > **CreateTopic**< **T** > (string name)
  Creates a Topic<T> with default Qos.
- **Topic**< T > **CreateTopic**< **T** > (string name, string typeName)
  Creates a Topic<T> with a different registered type name and default Qos.
- **Topic**< T > **CreateTopic**< **T** > (string name, **TopicQos** qos)
  Creates a Topic<T> with the given Qos.
- **Topic**< T > **CreateTopic**< **T** > (string name, string typeName, **TopicQos** qos)
  Creates a Topic<T> with a different registered type name and the given Qos.
- **Topics.IAnyTopic** **CreateTopic** (string name, Type topicType)
  Creates a Topic<T> specifying its type reflectively
- **Topic**< **DynamicData** > **CreateTopic** (string name, **DynamicType** type)
  Creates a dynamically-typed Topic with default qos

- **Topic**< **DynamicData** > **CreateTopic** (string name, **DynamicType** type, **TopicQos** qos)

  Creates a dynamically-typed Topic with default qos
- void **RegisterType** (string name, **DynamicType** type)

  Allows registering a dynamic type with a name different than DynamicType.Name
- void **RegisterType** (string name, **DynamicType** type, **TypeSerializationProperty** serializationProperty)

  Allows registering a dynamic type with a name different than DynamicType.Name and with additional serialization properties
- **ContentFilteredTopic**< T > **CreateContentFilteredTopic**< **T** > (string name, **Topic**< T > relatedTopic, **Filter** filter)

  Creates a ContentFilteredTopic<T> which can be used to do content-based subscriptions.
- **AnyContentFilteredTopic** **CreateContentFilteredTopic** (string name, **Topics.IAnyTopic** relatedTopic, **Filter** filter)

  Creates a ContentFilteredTopic<T> reflectively using the type of the relatedTopic.
- **ITopicDescription** **LookupTopicDescription** (string name)

  Looks up an existing, locally created TopicDescription, based on its name.
- **Publisher** **LookupPublisher** (string name)

  Looks up a Publisher by its PublisherQos.PublisherName within this ***DomainParticipant*** *(*p. *451).*
- **Subscriber** **LookupSubscriber** (string name)

  Looks up a Subscriber by its SubscriberQos.SubscriberName within this ***DomainParticipant*** *(*p. *451).*
- **DataReader**< T > **LookupDataReader**< **T** > (string name)

  Looks up a DataReader<T> by its DataReaderQos.SubscriptionName within this ***DomainParticipant*** *(*p. *451).*
- **AnyDataReader** **LookupDataReader** (string name)

  Looks up a AnyDataReader by its DataReaderQos.SubscriptionName within this ***DomainParticipant*** *(*p. *451).*
- **DataWriter**< T > **LookupDataWriter**< **T** > (string name)

  Looks up a DataWriter<T> by its DataWriterQos.PublicationName within this ***DomainParticipant*** *(*p. *451).*
- **AnyDataWriter** **LookupDataWriter** (string name)

  Looks up a AnyDataWriter by its DataWriterQos.PublicationName within this ***DomainParticipant*** *(*p. *451).*
- bool **IsTypeRegistered** (string typeName)

  Checks if the DynamicType associated with the provided typeName is registered with this ***DomainParticipant*** *(*p. *451).*
- **DynamicType** **GetDynamicType** (string typeName)

  Returns the DynamicType registered with the provided typeName.
- void **ResumeEndpointDiscovery** (**InstanceHandle** remoteParticipantHandle)

  Initiates endpoint discovery with the ***DomainParticipant*** *(*p. *451) identified by the provided* ***InstanceHandle*** *(*p. *598).*
- IEnumerable< **InstanceHandle** > **DiscoveredParticipantsFromSubjectName** (string subjectName)

  Retrieve all the ***DomainParticipant*** *(*p. *451) that have been discovered by this* ***DomainParticipant*** *(*p. *451) and that have the given subject name.*
- **TopicBuiltinTopicData** **GetDiscoveredTopicData** (in **InstanceHandle** topicHandle)

  Retrieves information on a Topic<T> that has been discovered.
- IEnumerable< **TopicBuiltinTopicData** > **GetDiscoveredTopicData** ()

  Retrieves the information on all Topic<T>s that have been discovered.
- **ParticipantBuiltinTopicData** **GetDiscoveredParticipantData** (in **InstanceHandle** participantHandle)

  Retrieves information on a ***DomainParticipant*** *(*p. *451) that has been discovered.*
- string **GetDiscoveredParticipantSubjectName** (in **InstanceHandle** participantHandle)

  Returns the EntityName policy for the specified ***DomainParticipant*** *(*p. *451).*
- IEnumerable< **ParticipantBuiltinTopicData** > **GetDiscoveredParticipantData** ()

  Retrieves the information on all ***DomainParticipant*** *(*p. *451)s that have been discovered.*
- **Publisher** **CreatePublisher** ()

  Creates a Publisher using the default PublisherQos that will be attached and belong to this ***DomainParticipant*** *(*p. *451).*

- **Publisher CreatePublisher** (**PublisherQos** qos)

  Creates a Publisher using the provided PublisherQos that will be attached and belong to this ***DomainParticipant*** *(*p. *451).*
- **Subscriber CreateSubscriber** ()

  Creates a Subscriber using the default SubscriberQos that will be attached and belong to this ***DomainParticipant*** *(*p. *451).*
- **Subscriber CreateSubscriber** (**SubscriberQos** qos)

  Creates a Subscriber using the provided SubscriberQos that will be attached and belong to this ***DomainParticipant*** *(*p. *451).*
- void **AssertLiveliness** ()

  Manually asserts liveliness on this ***DomainParticipant*** *(*p. *451).*
- void **AddPeer** (string peer)

  Add the peer, described by the provided string, to the list of peers that this ***DomainParticipant*** *(*p. *451) will try to contact.*
- void **RemovePeer** (string peer)

  Remove the peer, described by the provided string, from the list of peers that this ***DomainParticipant*** *(*p. *451) will try to contact.*
- void **IgnoreParticipant** (in **InstanceHandle** handle)

  Ignore the remote ***DomainParticipant*** *(*p. *451) corresponding to the provided* ***InstanceHandle*** *(*p. *598).*
- void **BanishIgnoredParticipants** ()

  Prevent ignored remote DomainParticipants from receiving traffic from the local ***DomainParticipant*** *(*p. *451).*
- void **IgnorePublication** (in **InstanceHandle** handle)

  Ignore the remote publication corresponding to the provided ***InstanceHandle*** *(*p. *598).*
- void **IgnoreSubscription** (in **InstanceHandle** handle)

  Ignore the remote subscription corresponding to the provided ***InstanceHandle*** *(*p. *598).*
- void **IgnoreTopic** (in **InstanceHandle** handle)

  Ignore the remote Topic<T> corresponding to the provided ***InstanceHandle*** *(*p. *598).*
- bool **ContainsEntity** (in **InstanceHandle** handle)

  Check if the Entity described by the provided ***InstanceHandle*** *(*p. *598) belongs to this* ***DomainParticipant*** *(*p. *451).*
- void **DisposeContainedEntities** ()

  Dispose all of the entities created by this ***DomainParticipant*** *(*p. *451).*
- override string **ToString** ()

  Provides a short string representation of the ***DomainParticipant*** *(*p. *451), including its domain ID and ParticipantName (if set).*
- override void **ResetEvents** (**StatusMask** eventsToRemove=StatusMask.All)

  Stop notifying of events and remove their event handlers
- delegate void **InvalidLocalAdvanceNoticeEventHandler** (**DomainParticipant** participant, **InvalidLocal↩ AdvanceNoticeStatus** status)

  Delegate type of the handler for the StatusMask.InvalidLocalAdvanceNotice status.

Properties

- WaitSetAsyncDispatcher **InternalTaskDispatcher** `[get]`

  For internal use only.
- **Subscriber ImplicitSubscriber** `[get]`

  Returns the implicit Subscriber. If an implicit Subscriber does not already exist, this creates one.
- **Publisher ImplicitPublisher** `[get]`

  Returns the implicit Publisher. If an implicit Publisher does not already exist, this creates one.
- **Subscriber BuiltinSubscriber** `[get]`

  Returns the built-in Subscriber.

- int **DomainId** [get]

  Gets this participant's domain id
- **DomainParticipantQos Qos** [get, set]

  *Get or change the QoS of this **DomainParticipant** (p. 451).*
- **PublisherQos DefaultPublisherQos** [get, set]

  Get or change the default PublisherQos.
- **SubscriberQos DefaultSubscriberQos** [get, set]

  Get or change the default SubscriberQos.
- **TopicQos DefaultTopicQos** [get, set]

  Get or change the default TopicQos.
- **DataReaderQos DefaultDataReaderQos** [get, set]

  Get or change the default DataReaderQos.
- **DataWriterQos DefaultDataWriterQos** [get, set]

  Get or change the default DataWriterQos.
- **Time CurrentTime** [get]

  *Returns the current time using this **DomainParticipant** (p. 451)'s clock*
- IEnumerable< **ITopicDescription** > **Topics** [get]

  *Retrieve all the **Topics** (p. 118) created from this **DomainParticipant** (p. 451)*
- IEnumerable< **AnyContentFilteredTopic** > **ContentFilteredTopics** [get]

  *Retrieve all the ContentFilteredTopics created from this **DomainParticipant** (p. 451)*
- IEnumerable< **Subscriber** > **Subscribers** [get]

  *Retrieve all the Subscriber created from this **DomainParticipant** (p. 451)*
- IEnumerable< **Publisher** > **Publishers** [get]

  *Retrieve all the Publisher created from this **DomainParticipant** (p. 451)*
- IEnumerable< **InstanceHandle** > **DiscoveredParticipants** [get]

  *Retrieve all the **DomainParticipant** (p. 451) that have been discovered by this **DomainParticipant** (p. 451)*
- IEnumerable< **InstanceHandle** > **DiscoveredTopics** [get]

  *Retrieve all the topics that have been discovered by this **DomainParticipant** (p. 451). The returned instance handles can be passed to **GetDiscoveredTopicData(in InstanceHandle)** (p. 461).*
- **DomainParticipantProtocolStatus DomainParticipantProtocolStatus** [get]

  *Returns the **DomainParticipantProtocolStatus** (p. 470).*
- **InvalidLocalAdvanceNoticeEventHandler InvalidLocalAdvanceNotice**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.InvalidLocalAdvanceNotice** (p. 109) status changes on the Participant.*
- InconsistentTopicEventHandler **InconsistentTopic**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.InconsistentTopic** (p. 108) status changes on any Topic<↩ T> created by this Participant for which this event is not being monitored.*
- LivelinessLostEventHandler **LivelinessLost**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessLost** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- OfferedIncompatibleQosEventHandler **OfferedIncompatibleQos**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedIncompatibleQos** (p. 108) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- OfferedDeadlineMissedEventHandler **OfferedDeadlineMissed**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedDeadlineMissed** (p. 108) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- PublicationMatchedEventHandler **PublicationMatched**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.PublicationMatched** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.*

- ReliableReaderActivityChangedEventHandler **ReliableReaderActivityChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableReaderActivityChanged** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- ReliableWriterCacheChangedEventHandler **ReliableWriterCacheChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableWriterCacheChanged** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- ServiceRequestAcceptedEventHandler **ServiceRequestAccepted**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ServiceRequestAccepted** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- ApplicationAcknowledgementReceivedEventHandler **ApplicationAcknowledgementReceived**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterApplicationAcknowledgementReceived** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- InstanceReplacedEventHandler **InstanceReplaced**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterInstanceReplaced** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- SampleRemovedEventHandler **SampleRemoved**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterSampleRemoved** (p. 110) status changes on any Publisher created by this Participant for which this event is not being monitored.*
- DataOnReadersEventHandler **DataOnReaders**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataOnReaders** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.*
- SubscriptionMatchedEventHandler **SubscriptionMatched**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SubscriptionMatched** (p. 109) status changes on any Subscriber created by this Participant for which this event is not being monitored.*
- DataAvailableEventHandler **DataAvailable**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataAvailable** (p. 109) status changes on any Subscriber created by this Participant for which this event is not being monitored.*
- LivelinessChangedEventHandler **LivelinessChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessChanged** (p. 109) status changes on any Subscriber created by this Participant for which this event is not being monitored.*
- RequestedDeadlineMissedEventHandler **RequestedDeadlineMissed**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedDeadlineMissed** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.*
- RequestedIncompatibleQosEventHandler **RequestedIncompatibleQos**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedIncompatibleQos** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.*
- SampleLostEventHandler **SampleLost**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleLost** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.*
- SampleRejectedEventHandler **SampleRejected**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleRejected** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.*

9.72.1 Detailed Description

Container for all other Entity objects.

The full documentation is available in the `C API:`DDS_DomainParticipant

9.72.2 Member Function Documentation

9.72.2.1 CreateTopic< T >() [1/4]

```
Topic< T > Rti.Dds.Domain.DomainParticipant.CreateTopic< T > (
            string name )
```

Creates a Topic<T> with default Qos.

The full documentation is available in the C API: DDS_DomainParticipant_create_topic

9.72.2.2 CreateTopic< T >() [2/4]

```
Topic< T > Rti.Dds.Domain.DomainParticipant.CreateTopic< T > (
            string name,
            string typeName )
```

Creates a Topic<T> with a different registered type name and default Qos.

The full documentation is available in the C API: DDS_DomainParticipant_create_topic

9.72.2.3 CreateTopic< T >() [3/4]

```
Topic< T > Rti.Dds.Domain.DomainParticipant.CreateTopic< T > (
            string name,
             TopicQos qos )
```

Creates a Topic<T> with the given Qos.

The full documentation is available in the C API: DDS_DomainParticipant_create_topic

9.72.2.4 CreateTopic< T >() [4/4]

```
Topic< T > Rti.Dds.Domain.DomainParticipant.CreateTopic< T > (
            string name,
            string typeName,
             TopicQos qos )
```

Creates a Topic<T> with a different registered type name and the given Qos.

The full documentation is available in the C API: DDS_DomainParticipant_create_topic

9.72.2.5 CreateTopic() [1/3]

```
Topics.IAnyTopic Rti.Dds.Domain.DomainParticipant.CreateTopic (
            string name,
            Type topicType )  [inline]
```

Creates a Topic<T> specifying its type reflectively

The full documentation is available in the C API: DDS_DomainParticipant_create_topic

9.72.2.6 CreateTopic() [2/3]

```
Topic< DynamicData > Rti.Dds.Domain.DomainParticipant.CreateTopic (
            string name,
             DynamicType type )  [inline]
```

Creates a dynamically-typed Topic with default qos

The full documentation is available in the C API: DDS_DomainParticipant_create_topic

9.72.2.7 CreateTopic() [3/3]

```
Topic< DynamicData > Rti.Dds.Domain.DomainParticipant.CreateTopic (
            string name,
             DynamicType type,
             TopicQos qos )  [inline]
```

Creates a dynamically-typed Topic with default qos

The full documentation is available in the C API: DDS_DomainParticipant_create_topic

9.72.2.8 RegisterType() [1/2]

```
void Rti.Dds.Domain.DomainParticipant.RegisterType (
            string name,
             DynamicType type )
```

Allows registering a dynamic type with a name different than DynamicType.Name

9.72.2.9 RegisterType() [2/2]

```
void Rti.Dds.Domain.DomainParticipant.RegisterType (
            string name,
             DynamicType type,
             TypeSerializationProperty serializationProperty )  [inline]
```

Allows registering a dynamic type with a name different than DynamicType.Name and with additional serialization properties

9.72.2.10 CreateContentFilteredTopic< T >()

```
ContentFilteredTopic< T >  Rti.Dds.Domain.DomainParticipant.CreateContentFilteredTopic< T > (
            string name,
             Topic< T > relatedTopic,
             Filter filter )
```

Creates a ContentFilteredTopic<T> which can be used to do content-based subscriptions.

The full documentation is available in the C API: DDS_DomainParticipant_create_contentfilteredtopic

9.72.2.11 CreateContentFilteredTopic()

```
AnyContentFilteredTopic Rti.Dds.Domain.DomainParticipant.CreateContentFilteredTopic (
            string name,
             Topics.IAnyTopic relatedTopic,
             Filter filter )  [inline]
```

Creates a ContentFilteredTopic<T> reflectively using the type of the relatedTopic.

The full documentation is available in the C API: DDS_DomainParticipant_create_contentfilteredtopic

9.72.2.12 LookupTopicDescription()

```
ITopicDescription Rti.Dds.Domain.DomainParticipant.LookupTopicDescription (
            string name )  [inline]
```

Looks up an existing, locally created TopicDescription, based on its name.

Returns

The topic description if it exists or null otherwise

The full documentation is available in the C API: DDS_DomainParticipant_lookup_topicdescription

9.72.2.13 LookupPublisher()

```
Publisher Rti.Dds.Domain.DomainParticipant.LookupPublisher (
            string name )  [inline]
```

Looks up a Publisher by its PublisherQos.PublisherName within this **DomainParticipant** (p. 451).

Returns

The publisher if it exists or null otherwise

The full documentation is available in the C API: DDS_DomainParticipant_lookup_publisher_by_↩ name

9.72.2.14 LookupSubscriber()

```
Subscriber Rti.Dds.Domain.DomainParticipant.LookupSubscriber (
            string name ) [inline]
```

Looks up a Subscriber by its SubscriberQos.SubscriberName within this **DomainParticipant** (p. 451).

Returns

The subscriber if it exists or null otherwise

The full documentation is available in the C API: DDS_DomainParticipant_lookup_subscriber_by_name

9.72.2.15 LookupDataReader< T >()

```
DataReader< T > Rti.Dds.Domain.DomainParticipant.LookupDataReader< T > (
            string name ) [inline]
```

Looks up a DataReader<T> by its DataReaderQos.SubscriptionName within this **DomainParticipant** (p. 451).

Returns

The DataReader if it exists or null otherwise

The full documentation is available in the C API: DDS_DomainParticipant_lookup_datareader_by_name

9.72.2.16 LookupDataReader()

```
AnyDataReader Rti.Dds.Domain.DomainParticipant.LookupDataReader (
            string name ) [inline]
```

Looks up a AnyDataReader by its DataReaderQos.SubscriptionName within this **DomainParticipant** (p. 451).

Returns

The DataReader if it exists or null otherwise

The full documentation is available in the C API: DDS_DomainParticipant_lookup_datareader_by_name

9.72.2.17 LookupDataWriter< T >()

```
DataWriter< T > Rti.Dds.Domain.DomainParticipant.LookupDataWriter< T > (
            string name ) [inline]
```

Looks up a DataWriter<T> by its DataWriterQos.PublicationName within this **DomainParticipant** (p. 451).

Returns

The DataWriter if it exists or null otherwise

The full documentation is available in the C API: DDS_DomainParticipant_lookup_datawriter_by_name

9.72.2.18 LookupDataWriter()

```
AnyDataWriter Rti.Dds.Domain.DomainParticipant.LookupDataWriter (
            string name ) [inline]
```

Looks up a AnyDataWriter by its DataWriterQos.PublicationName within this **DomainParticipant** (p. 451).

Returns

The DataWriter if it exists or null otherwise

The full documentation is available in the C API: DDS_DomainParticipant_lookup_datawriter_by_name

9.72.2.19 IsTypeRegistered()

```
bool Rti.Dds.Domain.DomainParticipant.IsTypeRegistered (
            string typeName )
```

Checks if the DynamicType associated with the provided typeName is registered with this **DomainParticipant** (p. 451).

Returns

True if the DynamicType is registered

9.72.2.20 GetDynamicType()

```
DynamicType Rti.Dds.Domain.DomainParticipant.GetDynamicType (
            string typeName )
```

Returns the DynamicType registered with the provided typeName.

Returns

The corresponding DynamicType, or null if no type with that typeName is registered.

The full documentation is available in the C API: DDS_DomainParticipant_get_typecode

9.72.2.21 ResumeEndpointDiscovery()

```
void Rti.Dds.Domain.DomainParticipant.ResumeEndpointDiscovery (
             InstanceHandle remoteParticipantHandle )
```

Initiates endpoint discovery with the **DomainParticipant** (p. 451) identified by the provided **InstanceHandle** (p. 598).

The full documentation is available in the C API: DDS_DomainParticipant_resume_endpoint_↩ discovery

9.72.2.22 DiscoveredParticipantsFromSubjectName()

```
IEnumerable< InstanceHandle > Rti.Dds.Domain.DomainParticipant.DiscoveredParticipantsFrom↩
SubjectName (
            string subjectName )
```

Retrieve all the **DomainParticipant** (p. 451) that have been discovered by this **DomainParticipant** (p. 451) and that have the given subject name.

Returns

An iterable list of all of the discovered DomainParticipants that have the given subject name

The full documentation is available in the C API: DDS_DomainParticipant_get_discovered_↩ participants_from_subject_name

9.72.2.23 GetDiscoveredTopicData() [1/2]

```
TopicBuiltinTopicData Rti.Dds.Domain.DomainParticipant.GetDiscoveredTopicData (
            in InstanceHandle topicHandle )
```

Retrieves information on a Topic<T> that has been discovered.

The full documentation is available in the C API: DDS_DomainParticipant_get_discovered_topic_↩ data

9.72.2.24 GetDiscoveredTopicData() [2/2]

```
IEnumerable< TopicBuiltinTopicData > Rti.Dds.Domain.DomainParticipant.GetDiscoveredTopicData ( )
[inline]
```

Retrieves the information on all Topic<T>s that have been discovered.

9.72.2.25 GetDiscoveredParticipantData() [1/2]

```
ParticipantBuiltinTopicData Rti.Dds.Domain.DomainParticipant.GetDiscoveredParticipantData (
            in InstanceHandle participantHandle )
```

Retrieves information on a **DomainParticipant** (p. 451) that has been discovered.

The full documentation is available in the C API: DDS_DomainParticipant_get_discovered_participant_data

9.72.2.26 GetDiscoveredParticipantSubjectName()

```
string Rti.Dds.Domain.DomainParticipant.GetDiscoveredParticipantSubjectName (
            in InstanceHandle participantHandle )
```

Returns the EntityName policy for the specified **DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_DomainParticipant_get_discovered_participant_subject_name

9.72.2.27 GetDiscoveredParticipantData() [2/2]

```
IEnumerable< ParticipantBuiltinTopicData > Rti.Dds.Domain.DomainParticipant.GetDiscovered↩
ParticipantData ( ) [inline]
```

Retrieves the information on all **DomainParticipant** (p. 451)s that have been discovered.

9.72.2.28 CreatePublisher() [1/2]

```
Publisher Rti.Dds.Domain.DomainParticipant.CreatePublisher ( )
```

Creates a Publisher using the default PublisherQos that will be attached and belong to this **DomainParticipant** (p. 451).

Returns

The created Publisher.

*The full documentation is available in the C API:*DDS_DomainParticipant_create_publisher

9.72.2.29 CreatePublisher() [2/2]

```
Publisher Rti.Dds.Domain.DomainParticipant.CreatePublisher (
            PublisherQos qos )
```

Creates a Publisher using the provided PublisherQos that will be attached and belong to this **DomainParticipant** (p. 451).

Returns

The created Publisher.

The full documentation is available in the C API: DDS_DomainParticipant_create_publisher

9.72.2.30 CreateSubscriber() [1/2]

```
Subscriber Rti.Dds.Domain.DomainParticipant.CreateSubscriber ( )
```

Creates a Subscriber using the default SubscriberQos that will be attached and belong to this **DomainParticipant** (p. 451).

Returns

The created Subscriber.

The full documentation is available in the C API: DDS_DomainParticipant_create_subscriber

9.72.2.31 CreateSubscriber() [2/2]

```
Subscriber Rti.Dds.Domain.DomainParticipant.CreateSubscriber (
            SubscriberQos qos )
```

Creates a Subscriber using the provided SubscriberQos that will be attached and belong to this **DomainParticipant** (p. 451).

Returns

The created Subscriber

.

The full documentation is available in the C API: DDS_DomainParticipant_create_subscriber

9.72.2.32 AssertLiveliness()

```
void Rti.Dds.Domain.DomainParticipant.AssertLiveliness ( )
```

Manually asserts liveliness on this **DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_DomainParticipant_assert_liveliness

9.72.2.33 AddPeer()

```
void Rti.Dds.Domain.DomainParticipant.AddPeer (
            string peer )
```

Add the peer, described by the provided string, to the list of peers that this **DomainParticipant** (p. 451) will try to contact.

The full documentation is available in the C API: DDS_DomainParticipant_add_peer

9.72.2.34 RemovePeer()

```
void Rti.Dds.Domain.DomainParticipant.RemovePeer (
            string peer )
```

Remove the peer, described by the provided string, from the list of peers that this **DomainParticipant** (p. 451) will try to contact.

The full documentation is available in the C API: DDS_DomainParticipant_remove_peer

9.72.2.35 IgnoreParticipant()

```
void Rti.Dds.Domain.DomainParticipant.IgnoreParticipant (
            in  InstanceHandle handle )
```

Ignore the remote **DomainParticipant** (p. 451) corresponding to the provided **InstanceHandle** (p. 598).

The full documentation is available in the C API: DDS_DomainParticipant_ignore_participant

9.72.2.36 BanishIgnoredParticipants()

```
void Rti.Dds.Domain.DomainParticipant.BanishIgnoredParticipants ( )
```

Prevent ignored remote DomainParticipants from receiving traffic from the local **DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_DomainParticipant_banish_ignored_↩ participants

9.72.2.37 IgnorePublication()

```
void Rti.Dds.Domain.DomainParticipant.IgnorePublication (
            in  InstanceHandle handle )
```

Ignore the remote publication corresponding to the provided **InstanceHandle** (p. 598).

The full documentation is available in the C API: DDS_DomainParticipant_ignore_publication

9.72.2.38 IgnoreSubscription()

```
void Rti.Dds.Domain.DomainParticipant.IgnoreSubscription (
            in  InstanceHandle handle )
```

Ignore the remote subscription corresponding to the provided **InstanceHandle** (p. 598).

The full documentation is available in the C API: DDS_DomainParticipant_ignore_subscription

9.72.2.39 IgnoreTopic()

```
void Rti.Dds.Domain.DomainParticipant.IgnoreTopic (
            in  InstanceHandle handle )
```

Ignore the remote Topic<T> corresponding to the provided **InstanceHandle** (p. 598).

The full documentation is available in the C API: DDS_DomainParticipant_ignore_topic

9.72.2.40 ContainsEntity()

```
bool Rti.Dds.Domain.DomainParticipant.ContainsEntity (
            in  InstanceHandle handle )
```

Check if the Entity described by the provided **InstanceHandle** (p. 598) belongs to this **DomainParticipant** (p. 451).

Returns

True if the Entity was created by this **DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_DomainParticipant_contains_entity

9.72.2.41 DisposeContainedEntities()

```
void Rti.Dds.Domain.DomainParticipant.DisposeContainedEntities ( )  [inline]
```

Dispose all of the entities created by this **DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_DomainParticipant_delete_contained_↩ entities

9.72.2.42 ToString()

```
override string Rti.Dds.Domain.DomainParticipant.ToString ( )  [inline]
```

Provides a short string representation of the **DomainParticipant** (p. 451), including its domain ID and ParticipantName (if set).

9.72.2.43 ResetEvents()

```
override void Rti.Dds.Domain.DomainParticipant.ResetEvents (
            StatusMask eventsToRemove = StatusMask.All )  [inline], [virtual]
```

Stop notifying of events and remove their event handlers

Parameters

eventsToRemove	Selects which events will stop receiving notifications. Use StatusMask.All to remove all event handlers.

Implements **Rti.Dds.Core.Entity** (p. 597).

9.72.2.44 InvalidLocalAdvanceNoticeEventHandler()

```
delegate void Rti.Dds.Domain.DomainParticipant.InvalidLocalAdvanceNoticeEventHandler (
            DomainParticipant participant,
            InvalidLocalAdvanceNoticeStatus status )
```

Delegate type of the handler for the StatusMask.InvalidLocalAdvanceNotice status.

The full documentation is available in the C API: DDS_DomainParticipantListener_on_invalid_↩ local_status_advance_notice

9.72.3 Property Documentation

9.72.3.1 InternalTaskDispatcher

```
WaitSetAsyncDispatcher Rti.Dds.Domain.DomainParticipant.InternalTaskDispatcher  [get]
```

For internal use only.

9.72.3.2 ImplicitSubscriber

Subscriber Rti.Dds.Domain.DomainParticipant.ImplicitSubscriber [get]

Returns the implicit Subscriber. If an implicit Subscriber does not already exist, this creates one.

The full documentation is available in the C API: DDS_DomainParticipant_get_implicit_subscriber

9.72.3.3 ImplicitPublisher

Publisher Rti.Dds.Domain.DomainParticipant.ImplicitPublisher [get]

Returns the implicit Publisher. If an implicit Publisher does not already exist, this creates one.

The full documentation is available in the C API: DDS_DomainParticipant_get_implicit_publisher

9.72.3.4 BuiltinSubscriber

Subscriber Rti.Dds.Domain.DomainParticipant.BuiltinSubscriber [get]

Returns the built-in Subscriber.

The built-in Subscriber contains the following DataReaders used for discovery:

- DataReader<**Rti.Dds.Topics.SubscriptionBuiltinTopicData** (p. 1110)> (topic name: **Rti.Dds.Subscription.Subscriber.SubscriptionBuiltinTopicName** (p. 1099))
- DataReader<**Rti.Dds.Topics.PublicationBuiltinTopicData** (p. 872)> (topic name: **Rti.Dds.Subscription.Subscriber.PublicationBuiltinTopicName** (p. 1099))
- DataReader<**Rti.Dds.Topics.TopicBuiltinTopicData** (p. 1148)> (topic name: **Rti.Dds.Subscription.Subscriber.TopicBuiltinTopicName** (p. 1099))
- DataReader<**Rti.Dds.Topics.ParticipantBuiltinTopicData** (p. 832)> (topic name: **Rti.Dds.Subscription.Subscriber.ParticipantBuiltinTopicName** (p. 1099))

Use **Rti.Dds.Subscription.Subscriber.LookupDataReader(string)** (p. 1097) to get access to these readers.

See **Accessing Information on Entity Discovery** (p. 40)

The full documentation is available in the C API: DDS_DomainParticipant_get_builtin_subscriber

9.72.3.5 DomainId

int Rti.Dds.Domain.DomainParticipant.DomainId [get]

Gets this participant's domain id

9.72.3.6 Qos

DomainParticipantQos Rti.Dds.Domain.DomainParticipant.Qos [get], [set]

Get or change the QoS of this **DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_DomainParticipant_set_qos

9.72.3.7 DefaultPublisherQos

PublisherQos Rti.Dds.Domain.DomainParticipant.DefaultPublisherQos [get], [set]

Get or change the default PublisherQos.

The full documentation is available in the C API: DDS_DomainParticipant_get_default_publisher_qos

9.72.3.8 DefaultSubscriberQos

SubscriberQos Rti.Dds.Domain.DomainParticipant.DefaultSubscriberQos [get], [set]

Get or change the default SubscriberQos.

The full documentation is available in the C API: DDS_DomainParticipant_get_default_subscriber_qos

9.72.3.9 DefaultTopicQos

TopicQos Rti.Dds.Domain.DomainParticipant.DefaultTopicQos [get], [set]

Get or change the default TopicQos.

The full documentation is available in the C API: DDS_DomainParticipant_get_default_topic_qos

9.72.3.10 DefaultDataReaderQos

DataReaderQos Rti.Dds.Domain.DomainParticipant.DefaultDataReaderQos [get], [set]

Get or change the default DataReaderQos.

The full documentation is available in the C API: DDS_DomainParticipant_get_default_datareader_qos

9.72.3.11 DefaultDataWriterQos

DataWriterQos Rti.Dds.Domain.DomainParticipant.DefaultDataWriterQos [get], [set]

Get or change the default DataWriterQos.

*The full documentation is available in the C API:*DDS_DomainParticipant_get_default_datawriter_qos

9.72.3.12 CurrentTime

Time Rti.Dds.Domain.DomainParticipant.CurrentTime [get]

Returns the current time using this **DomainParticipant** (p. 451)'s clock

*The full documentation is available in the C API:*DDS_DomainParticipant_get_current_time

9.72.3.13 Topics

IEnumerable< **ITopicDescription**> Rti.Dds.Domain.DomainParticipant.Topics [get]

Retrieve all the **Topics** (p. 118) created from this **DomainParticipant** (p. 451)

9.72.3.14 ContentFilteredTopics

IEnumerable< **AnyContentFilteredTopic**> Rti.Dds.Domain.DomainParticipant.ContentFilteredTopics [get]

Retrieve all the ContentFilteredTopics created from this **DomainParticipant** (p. 451)

9.72.3.15 Subscribers

IEnumerable< **Subscriber**> Rti.Dds.Domain.DomainParticipant.Subscribers [get]

Retrieve all the Subscriber created from this **DomainParticipant** (p. 451)

Returns

An iterable list of all of the Subscribers created from the **DomainParticipant** (p. 451)

*The full documentation is available in the C API:*DDS_DomainParticipant_get_subscribers

9.72.3.16 Publishers

```
IEnumerable< Publisher> Rti.Dds.Domain.DomainParticipant.Publishers [get]
```

Retrieve all the Publisher created from this **DomainParticipant** (p. 451)

Returns

An iterable list of all of the Publishers created from the **DomainParticipant** (p. 451)

The full documentation is available in the C API: `DDS_DomainParticipant_get_publishers`

9.72.3.17 DiscoveredParticipants

```
IEnumerable< InstanceHandle> Rti.Dds.Domain.DomainParticipant.DiscoveredParticipants [get]
```

Retrieve all the **DomainParticipant** (p. 451) that have been discovered by this **DomainParticipant** (p. 451)

Returns

An iterable list of all of the discovered DomainParticipants

The full documentation is available in the C API: `DDS_DomainParticipant_get_discovered_participants`

9.72.3.18 DiscoveredTopics

```
IEnumerable< InstanceHandle> Rti.Dds.Domain.DomainParticipant.DiscoveredTopics [get]
```

Retrieve all the topics that have been discovered by this **DomainParticipant** (p. 451). The returned instance handles can be passed to **GetDiscoveredTopicData(in InstanceHandle)** (p. 461).

Returns

The instance handles identifying the discovered topics.

The full documentation is available in the C API: `DDS_DomainParticipant_get_discovered_topics`

9.72.3.19 DomainParticipantProtocolStatus

```
DomainParticipantProtocolStatus Rti.Dds.Domain.DomainParticipant.DomainParticipantProtocolStatus
[get]
```

Returns the **DomainParticipantProtocolStatus** (p. 470).

Returns

The **DomainParticipantProtocolStatus** (p. 470) of this **DomainParticipant** (p. 451).

The full documentation is available in the C API: `DDS_DomainParticipant_get_participant_protocol_status`

9.72.3.20 InvalidLocalAdvanceNotice

InvalidLocalAdvanceNoticeEventHandler Rti.Dds.Domain.DomainParticipant.InvalidLocalAdvanceNotice [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.InvalidLocalAdvanceNotice** (p. 109) status changes on the Participant.

9.72.3.21 InconsistentTopic

InconsistentTopicEventHandler Rti.Dds.Domain.DomainParticipant.InconsistentTopic [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.InconsistentTopic** (p. 108) status changes on any Topic<T> created by this Participant for which this event is not being monitored.

9.72.3.22 LivelinessLost

LivelinessLostEventHandler Rti.Dds.Domain.DomainParticipant.LivelinessLost [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessLost** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.23 OfferedIncompatibleQos

OfferedIncompatibleQosEventHandler Rti.Dds.Domain.DomainParticipant.OfferedIncompatibleQos [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedIncompatibleQos** (p. 108) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.24 OfferedDeadlineMissed

OfferedDeadlineMissedEventHandler Rti.Dds.Domain.DomainParticipant.OfferedDeadlineMissed [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedDeadlineMissed** (p. 108) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.25 PublicationMatched

```
PublicationMatchedEventHandler Rti.Dds.Domain.DomainParticipant.PublicationMatched  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.PublicationMatched** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.26 ReliableReaderActivityChanged

```
ReliableReaderActivityChangedEventHandler Rti.Dds.Domain.DomainParticipant.ReliableReaderActivity↩
Changed  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableReaderActivityChanged** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.27 ReliableWriterCacheChanged

```
ReliableWriterCacheChangedEventHandler Rti.Dds.Domain.DomainParticipant.ReliableWriterCacheChanged
[add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableWriterCacheChanged** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.28 ServiceRequestAccepted

```
ServiceRequestAcceptedEventHandler Rti.Dds.Domain.DomainParticipant.ServiceRequestAccepted  [add],
[remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ServiceRequestAccepted** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.29 ApplicationAcknowledgementReceived

```
ApplicationAcknowledgementReceivedEventHandler Rti.Dds.Domain.DomainParticipant.Application↩
AcknowledgementReceived  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterApplicationAcknowledgementReceived** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.30 InstanceReplaced

```
InstanceReplacedEventHandler Rti.Dds.Domain.DomainParticipant.InstanceReplaced  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterInstanceReplaced** (p. 109) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.31 SampleRemoved

```
SampleRemovedEventHandler Rti.Dds.Domain.DomainParticipant.SampleRemoved  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterSampleRemoved** (p. 110) status changes on any Publisher created by this Participant for which this event is not being monitored.

9.72.3.32 DataOnReaders

```
DataOnReadersEventHandler Rti.Dds.Domain.DomainParticipant.DataOnReaders  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataOnReaders** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.72.3.33 SubscriptionMatched

```
SubscriptionMatchedEventHandler Rti.Dds.Domain.DomainParticipant.SubscriptionMatched  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SubscriptionMatched** (p. 109) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.72.3.34 DataAvailable

```
DataAvailableEventHandler Rti.Dds.Domain.DomainParticipant.DataAvailable  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataAvailable** (p. 109) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.72.3.35 LivelinessChanged

```
LivelinessChangedEventHandler Rti.Dds.Domain.DomainParticipant.LivelinessChanged  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessChanged** (p. 109) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.72.3.36 RequestedDeadlineMissed

```
RequestedDeadlineMissedEventHandler Rti.Dds.Domain.DomainParticipant.RequestedDeadlineMissed  [add],
[remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedDeadlineMissed** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.72.3.37 RequestedIncompatibleQos

```
RequestedIncompatibleQosEventHandler Rti.Dds.Domain.DomainParticipant.RequestedIncompatibleQos
[add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedIncompatibleQos** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.72.3.38 SampleLost

```
SampleLostEventHandler Rti.Dds.Domain.DomainParticipant.SampleLost  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleLost** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.72.3.39 SampleRejected

```
SampleRejectedEventHandler Rti.Dds.Domain.DomainParticipant.SampleRejected  [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleRejected** (p. 108) status changes on any Subscriber created by this Participant for which this event is not being monitored.

9.73 Rti.Dds.Domain.DomainParticipantConfigParams Class Reference

Allows configuring QosProvider.CreateParticipantFromConfig(string, DomainParticipantConfigParams).

Inherits IEquatable< DomainParticipantConfigParams >.

Public Member Functions

- **DomainParticipantConfigParams** ()

  Creates a new instance with the default configuration.
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DomainParticipantConfigParams** other)

  Compares for equality

Properties

- int **DomainId** `[get, set]`

  Domain *(*p. *110) ID from which the* ***DomainParticipant*** *(*p. *451) is created.*
- string **ParticipantName** `[get, set]`

  Name assigned to the ***DomainParticipant*** *(*p. *451)*
- string **ParticipantQosLibraryName** `[get, set]`

  QoS library name containing the QoS profile from which the ***DomainParticipant*** *(*p. *451) is created.*
- string **ParticipantQosProfileName** `[get, set]`

  QoS profile name from which the ***DomainParticipant*** *(*p. *451) is created.*
- string **DomainEntityQosLibraryName** `[get, set]`

  QoS library name containing the QoS profile from which the all the entities defined under the participant configuration are created.
- string **DomainEntityQosProfileName** `[get, set]`

  QoS profile name from which the all the entities defined under the participant configuration are created.

9.73.1 Detailed Description

Allows configuring QosProvider.CreateParticipantFromConfig(string, DomainParticipantConfigParams).

The full documentation is available in the `C API:` `DDSDomainParticipantConfigParams_t`

9.73.2 Constructor & Destructor Documentation

9.73.2.1 DomainParticipantConfigParams()

```
Rti.Dds.Domain.DomainParticipantConfigParams.DomainParticipantConfigParams ( )  [inline]
```

Creates a new instance with the default configuration.

The full documentation is available in the C API: DDSDomainParticipantConfigParams_t_↩ INITIALIZER

9.73.3 Member Function Documentation

9.73.3.1 GetHashCode()

```
override int Rti.Dds.Domain.DomainParticipantConfigParams.GetHashCode ( )  [inline]
```

Gets the hash code

9.73.3.2 Equals() [1/2]

```
override bool Rti.Dds.Domain.DomainParticipantConfigParams.Equals (
            object other )
```

Compares for equality

9.73.3.3 Equals() [2/2]

```
bool Rti.Dds.Domain.DomainParticipantConfigParams.Equals (
             DomainParticipantConfigParams other )  [inline]
```

Compares for equality

9.73.4 Property Documentation

9.73.4.1 DomainId

```
int Rti.Dds.Domain.DomainParticipantConfigParams.DomainId [get], [set]
```

Domain (p. 110) ID from which the **DomainParticipant** (p. 451) is created.

The full documentation is available in the C API: DDSDomainParticipantConfigParams_t_domain_id

9.73.4.2 ParticipantName

```
string Rti.Dds.Domain.DomainParticipantConfigParams.ParticipantName [get], [set]
```

Name assigned to the **DomainParticipant** (p. 451)

The full documentation is available in the C API: DDSDomainParticipantConfigParams_t_↩participant_name

9.73.4.3 ParticipantQosLibraryName

```
string Rti.Dds.Domain.DomainParticipantConfigParams.ParticipantQosLibraryName [get], [set]
```

QoS library name containing the QoS profile from which the **DomainParticipant** (p. 451) is created.

The full documentation is available in the C API: DDSDomainParticipantConfigParams_t_↩participant_qos_library_name

9.73.4.4 ParticipantQosProfileName

```
string Rti.Dds.Domain.DomainParticipantConfigParams.ParticipantQosProfileName [get], [set]
```

QoS profile name from which the **DomainParticipant** (p. 451) is created.

The full documentation is available in the C API: DDSDomainParticipantConfigParams_t_↩participant_qos_profile_name

9.73.4.5 DomainEntityQosLibraryName

```
string Rti.Dds.Domain.DomainParticipantConfigParams.DomainEntityQosLibraryName [get], [set]
```

QoS library name containing the QoS profile from which the all the entities defined under the participant configuration are created.

The full documentation is available in the C API: DDSDomainParticipantConfigParams_t_domain_↩entity_qos_library_name

9.73.4.6 DomainEntityQosProfileName

```
string Rti.Dds.Domain.DomainParticipantConfigParams.DomainEntityQosProfileName [get], [set]
```

QoS profile name from which the all the entities defined under the participant configuration are created.

The full documentation is available in the C API: DDSDomainParticipantConfigParams_t_domain_↩ entity_qos_profile_name

9.74 Rti.Dds.Domain.DomainParticipantFactory Class Reference

Singleton that manages the creation of **DomainParticipant** (p. 451) objects.

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()

  Releases global resources used by the middleware.
- **DomainParticipant CreateParticipant** (int domainId)

  *Creates a new **DomainParticipant** (p. 451) with default QoS.*
- **DomainParticipant CreateParticipant** (int domainId, **DomainParticipantQos** qos)

  *Creates a new **DomainParticipant** (p. 451) with the given QoS.*
- **DomainParticipant CreateParticipant** (int domainId, **DomainParticipantQos** qos, Action< **Domain**↩ **Participant** > preEnableAction)

  *Creates a new **DomainParticipant** (p. 451) with the given QoS.*
- **DomainParticipant LookupParticipant** (int domainId)

  *Looks up a **DomainParticipant** (p. 451) by domain ID*
- **DomainParticipant LookupParticipant** (string name)

  *Looks up a **DomainParticipant** (p. 451) by its **DomainParticipantQos.ParticipantName** (p. 508)*
- void **RegisterTypeSupport**< **T** > ()

  Provides the name that an XML application can use to refer to a C# type
- void **RegisterTypeSupport**< **T** > (string name)

  Provides the name that an XML application can use to refer to a C# type
- void **RegisterNamespace** (System.Reflection.Assembly assembly, string @namespace)

  Specifies a namespace where QosProvider.CreateParticipantFromConfig(string) can look for the definition of C# types referenced from XML-defined applications.

Properties

- static **DomainParticipantFactory Instance** [get]

  Gets the singleton instance of this class.
- **DomainParticipantFactoryQos Qos** [get, set]

  Get or set the QoS.
- **DomainParticipantQos DefaultParticipantQos** [get, set]

  *Gets or sets the default **DomainParticipantQos** (p. 490)*
- IEnumerable< **DomainParticipant** > **Participants** [get]

  *Returns all the participants the **DomainParticipantFactory** (p. 478) has.*
- bool **Disposed** [get]

  Indicates whether this object has been disposed

9.74.1 Detailed Description

Singleton that manages the creation of **DomainParticipant** (p. 451) objects.

The full documentation is available in the C API: DDS_DomainParticipantFactory

9.74.2 Member Function Documentation

9.74.2.1 Dispose()

```
void Rti.Dds.Domain.DomainParticipantFactory.Dispose ( )  [inline]
```

Releases global resources used by the middleware.

In most cases calling this function is not necessary. However, some memory-check tools may flag this native heap memory as unreclaimed. So this method provides a way to clean up that memory at the end of the application.

Precondition

All participants created from the factory have been deleted.

Postcondition

All resources belonging to the factory have been reclaimed. A new call to **Instance** (p. 482) will return a new lifecycle of the singleton.

9.74.2.2 CreateParticipant() [1/3]

```
DomainParticipant Rti.Dds.Domain.DomainParticipantFactory.CreateParticipant (
            int domainId )
```

Creates a new **DomainParticipant** (p. 451) with default QoS.

Parameters

domainId	The domain id to join

The full documentation is available in the C API: DDS_DomainParticipantFactory_create_participant

9.74.2.3 CreateParticipant() [2/3]

```
DomainParticipant Rti.Dds.Domain.DomainParticipantFactory.CreateParticipant (
            int domainId,
             DomainParticipantQos qos )
```

Creates a new **DomainParticipant** (p. 451) with the given QoS.

Parameters

domain↩ Id	The domain id to join
qos	The QoS to configure the **DomainParticipant** (p. 451)

The full documentation is available in the C API: DDS_DomainParticipantFactory_create_↩ participant

9.74.2.4 CreateParticipant() [3/3]

```
DomainParticipant Rti.Dds.Domain.DomainParticipantFactory.CreateParticipant (
            int domainId,
             DomainParticipantQos qos,
            Action< DomainParticipant > preEnableAction ) [inline]
```

Creates a new **DomainParticipant** (p. 451) with the given QoS.

Parameters

domainId	The domain id to join
qos	The QoS to configure the **DomainParticipant** (p. 451)
preEnableAction	An action that allows performing operations on the **DomainParticipant** (p. 451) right before it is enabled. For example, if the application needs to receive information about all discovered entities, looking up the readers for the built-in topics in **DomainParticipant.BuiltinSubscriber** (p. 467) should be done before the **DomainParticipant** (p. 451) is enabled.

The full documentation is available in the C API: DDS_DomainParticipantFactory_create_↩ participant

9.74.2.5 LookupParticipant() [1/2]

```
DomainParticipant Rti.Dds.Domain.DomainParticipantFactory.LookupParticipant (
            int domainId )
```

Looks up a **DomainParticipant** (p. 451) by domain ID

The full documentation is available in the C API: DDS_DomainParticipantFactory_lookup_↩ participant

9.74.2.6 LookupParticipant() [2/2]

```
DomainParticipant Rti.Dds.Domain.DomainParticipantFactory.LookupParticipant (
            string name )
```

Looks up a **DomainParticipant** (p. 451) by its **DomainParticipantQos.ParticipantName** (p. 508)

The full documentation is available in the C API: DDS_DomainParticipantFactory_lookup_↩ participant_by_name

9.74.2.7 RegisterTypeSupport< T >() [1/2]

```
void Rti.Dds.Domain.DomainParticipantFactory.RegisterTypeSupport< T > ( )
```

Provides the name that an XML application can use to refer to a C# type

Template Parameters

T	The type to register. The type is registered with the name typeof(T).Name

9.74.2.8 RegisterTypeSupport< T >() [2/2]

```
void Rti.Dds.Domain.DomainParticipantFactory.RegisterTypeSupport< T > (
            string name )  [inline]
```

Provides the name that an XML application can use to refer to a C# type

Parameters

name	The name to register this type with. It must be the same name used in the XML tag register_type

Template Parameters

T	The type to register

9.74.2.9 RegisterNamespace()

```
void Rti.Dds.Domain.DomainParticipantFactory.RegisterNamespace (
            System.Reflection.Assembly assembly,
            string @ namespace )
```

Specifies a namespace where QosProvider.CreateParticipantFromConfig(string) can look for the definition of C# types referenced from XML-defined applications.

Parameters

assembly	The assembly where the namespace is located
namespace	The namespace within the assembly where the QosProvider can look for types. Nested namespaces are also included.

9.74.3 Property Documentation

9.74.3.1 Instance

DomainParticipantFactory Rti.Dds.Domain.DomainParticipantFactory.Instance [static], [get]

Gets the singleton instance of this class.

The full documentation is available in the C API: DDS_DomainParticipantFactory_get_instance

9.74.3.2 Qos

DomainParticipantFactoryQos Rti.Dds.Domain.DomainParticipantFactory.Qos [get], [set]

Get or set the QoS.

The full documentation is available in the C API: DDS_DomainParticipantFactory_get_qos

9.74.3.3 DefaultParticipantQos

DomainParticipantQos Rti.Dds.Domain.DomainParticipantFactory.DefaultParticipantQos [get], [set]

Gets or sets the default **DomainParticipantQos** (p. 490)

The full documentation is available in the C API: DDS_DomainParticipantFactory_set_default_↩ participant_qos

9.74.3.4 Participants

IEnumerable< **DomainParticipant**> Rti.Dds.Domain.DomainParticipantFactory.Participants [get]

Returns all the participants the **DomainParticipantFactory** (p. 478) has.

The full documentation is available in the C API: DDS_DomainParticipantFactory_get_participants

9.74.3.5 Disposed

```
bool Rti.Dds.Domain.DomainParticipantFactory.Disposed  [get]
```

Indicates whether this object has been disposed

9.75 Rti.Dds.Domain.DomainParticipantFactoryQos Class Reference

QoS policies supported by the **DomainParticipantFactory** (p. 478).

Inherits IEquatable< DomainParticipantFactoryQos >.

Public Member Functions

- **DomainParticipantFactoryQos** **WithEntityFactory** (**EntityFactory** value)
  *Creates a copy of this **DomainParticipantFactoryQos** (p. 483) instance with a new value for EntityFactory*
- **DomainParticipantFactoryQos** **WithResourceLimits** (**SystemResourceLimits** policy)
  *Creates an instance with a new **ResourceLimits** (p. 488) policy.*
- **DomainParticipantFactoryQos** **WithResourceLimits** (Action< **SystemResourceLimitsBuilder** > build)
  *Creates a new instance with a new **ResourceLimits** (p. 488) policy as configured by a build action.*
- **DomainParticipantFactoryQos** **WithMonitoring** (**Monitoring** value)
  *Creates a copy of this **DomainParticipantFactoryQos** (p. 483) instance with a new value for Monitoring*
- **DomainParticipantFactoryQos** **WithMonitoring** (Action< **MonitoringBuilder** > build)
  *Creates a new instance with a new **Monitoring** (p. 488) policy as configured by a build action.*
- override bool **Equals** (object other)
  Compares all the policies for equality
- override int **GetHashCode** ()
  Returns the hash code by combining that of each policy
- bool **Equals** (**DomainParticipantFactoryQos** other)
  Compares all the policies for equality
- override string **ToString** ()
  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintFormat** format)
  Returns an XML representation of the QoS object.
- string **ToString** (**DomainParticipantFactoryQos** baseQos, **QosPrintFormat** format=null)
  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintAll** baseQos, **QosPrintFormat** format=null)
  Returns an XML representation of the QoS object.

Properties

- **EntityFactory** **EntityFactory** [get]
  Gets the value of EntityFactory
- **SystemResourceLimits** **ResourceLimits** [get]
  Gets the value of ResourceLimits
- **Monitoring** **Monitoring** [get]
  Gets the value of Monitoring
- static **DomainParticipantFactoryQos** **Default** = CreateDefault() [get]
  *Singleton containing the default value of a **DomainParticipantFactoryQos** (p. 483)*

9.75.1 Detailed Description

QoS policies supported by the **DomainParticipantFactory** (p. 478).

The full documentation is available in the `C API:` `DDS_DomainParticipantFactoryQos`

9.75.2 Member Function Documentation

9.75.2.1 WithEntityFactory()

```
DomainParticipantFactoryQos Rti.Dds.Domain.DomainParticipantFactoryQos.WithEntityFactory (
            EntityFactory value ) [inline]
```

Creates a copy of this **DomainParticipantFactoryQos** (p. 483) instance with a new value for EntityFactory

Parameters

value	The new value for EntityFactory

Returns

A copy with a new value for EntityFactory

9.75.2.2 WithResourceLimits() [1/2]

```
DomainParticipantFactoryQos Rti.Dds.Domain.DomainParticipantFactoryQos.WithResourceLimits (
            SystemResourceLimits policy ) [inline]
```

Creates an instance with a new **ResourceLimits** (p. 488) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.75.2.3 WithResourceLimits() [2/2]

```
DomainParticipantFactoryQos Rti.Dds.Domain.DomainParticipantFactoryQos.WithResourceLimits (
            Action< SystemResourceLimitsBuilder > build )
```

Creates a new instance with a new **ResourceLimits** (p. 488) policy as configured by a build action.

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.75.2.4 WithMonitoring() [1/2]

```
DomainParticipantFactoryQos Rti.Dds.Domain.DomainParticipantFactoryQos.WithMonitoring (
             Monitoring value ) [inline]
```

Creates a copy of this **DomainParticipantFactoryQos** (p. 483) instance with a new value for Monitoring

Parameters

value	The new value for EntityFactory

Returns

A copy with a new value for EntityFactory

9.75.2.5 WithMonitoring() [2/2]

```
DomainParticipantFactoryQos Rti.Dds.Domain.DomainParticipantFactoryQos.WithMonitoring (
            Action< MonitoringBuilder > build )
```

Creates a new instance with a new **Monitoring** (p. 488) policy as configured by a build action.

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.75.2.6 Equals() [1/2]

```
override bool Rti.Dds.Domain.DomainParticipantFactoryQos.Equals (
            object other )
```

Compares all the policies for equality

9.75.2.7 GetHashCode()

```
override int Rti.Dds.Domain.DomainParticipantFactoryQos.GetHashCode ( )  [inline]
```

Returns the hash code by combining that of each policy

9.75.2.8 Equals() [2/2]

```
bool Rti.Dds.Domain.DomainParticipantFactoryQos.Equals (
              DomainParticipantFactoryQos other )  [inline]
```

Compares all the policies for equality

9.75.2.9 ToString() [1/4]

```
override string Rti.Dds.Domain.DomainParticipantFactoryQos.ToString ( )
```

Returns an XML representation of the QoS object.

The output is formatted using the default values for the QosPrintFormat and only QoS policies which differ from the documented default are included.

9.75.2.10 ToString() [2/4]

```
string Rti.Dds.Domain.DomainParticipantFactoryQos.ToString (
              QosPrintFormat format )
```

Returns an XML representation of the QoS object.

Parameters

format	The baseQos profile.

This overload accepts a value for the baseQos. Only the differences between the **DomainParticipantFactoryQos** (p. 483) object being printed and the baseQos are included in the output.

9.75.2.11 ToString() [3/4]

```
string Rti.Dds.Domain.DomainParticipantFactoryQos.ToString (
            DomainParticipantFactoryQos baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	The baseQos profile.
format	the format used to configure the output. If not supplied the output is formatted using the default format.

This overload accepts a value for the baseQos. Only the differences between the **DomainParticipantFactoryQos** (p. 483) object being printed and the baseQos are included in the output.

9.75.2.12 ToString() [4/4]

```
string Rti.Dds.Domain.DomainParticipantFactoryQos.ToString (
            QosPrintAll baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	Used to indicate that the entire QoS object should be included in the output. The only value which should be provided for this argument is QosPrintAll.Value
format	The format used to configure the output. If not supplied, the output is formatted using the default format.

This overload accepts a parameter of type QosPrintAll. Unlike the other ToString overloads, the entire QoS object will be included in the output.

9.75.3 Property Documentation

9.75.3.1 EntityFactory

EntityFactory Rti.Dds.Domain.DomainParticipantFactoryQos.EntityFactory [get]

Gets the value of EntityFactory

The full documentation is available in the C API: DDS_DomainParticipantFactoryQos_entity_↩ factory

9.75.3.2 ResourceLimits

SystemResourceLimits Rti.Dds.Domain.DomainParticipantFactoryQos.ResourceLimits [get]

Gets the value of ResourceLimits

The full documentation is available in the C API: DDS_DomainParticipantFactoryQos_resource_↩ limits

9.75.3.3 Monitoring

Monitoring Rti.Dds.Domain.DomainParticipantFactoryQos.Monitoring [get]

Gets the value of Monitoring

The full documentation is available in the C API: DDS_DomainParticipantFactoryQos_monitoring

9.75.3.4 Default

DomainParticipantFactoryQos Rti.Dds.Domain.DomainParticipantFactoryQos.Default = CreateDefault() [static], [get]

Singleton containing the default value of a **DomainParticipantFactoryQos** (p. 483)

9.76 Rti.Dds.Core.Status.DomainParticipantProtocolStatus Class Reference

The status of a participant's protocol related metrics, like the number of corrupted messages, change in corrupted messages and timestamp of the last corrupted message.

Public Member Functions

- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Gets the hash code.
- bool **Equals** (**DomainParticipantProtocolStatus** other)

  Compares for equality.
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< long > **CorruptedRtpsMessageCount** `[get]`

  The number of corrupted RTPS messages detected by the domain participant.
- **Time LastCorruptedMessageTimestamp** `[get]`

  The timestamp when the last corrupted RTPS message was detected by the domain participant.

9.76.1 Detailed Description

The status of a participant's protocol related metrics, like the number of corrupted messages, change in corrupted messages and timestamp of the last corrupted message.

The full documentation is available in the C API:`DDS_DomainParticipantProtocolStatus`

9.76.2 Member Function Documentation

9.76.2.1 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.DomainParticipantProtocolStatus.Equals (
            object other )
```

Compares for equality.

9.76.2.2 GetHashCode()

```
override int Rti.Dds.Core.Status.DomainParticipantProtocolStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.76.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.DomainParticipantProtocolStatus.Equals (
            DomainParticipantProtocolStatus other ) [inline]
```

Compares for equality.

9.76.2.4 ToString()

```
override string Rti.Dds.Core.Status.DomainParticipantProtocolStatus.ToString ( )
```

Returns a readable summary of the status

9.76.3 Property Documentation

9.76.3.1 CorruptedRtpsMessageCount

EventCount<long> Rti.Dds.Core.Status.DomainParticipantProtocolStatus.CorruptedRtpsMessageCount [get]

The number of corrupted RTPS messages detected by the domain participant.

The full documentation is available in the C API: DDS_DomainParticipantProtocolStatus_↩corrupted_rtps_message_count

9.76.3.2 LastCorruptedMessageTimestamp

Time Rti.Dds.Core.Status.DomainParticipantProtocolStatus.LastCorruptedMessageTimestamp [get]

The timestamp when the last corrupted RTPS message was detected by the domain participant.

The full documentation is available in the C API: DDS_DomainParticipantProtocolStatus_last_↩corrupted_message_timestamp

9.77 Rti.Dds.Domain.DomainParticipantQos Class Reference

QoS policies supported by a **DomainParticipant** (p. 451).

Inherits IEquatable< DomainParticipantQos >.

Public Member Functions

- **DomainParticipantQos WithEntityFactory** (**EntityFactory** policy)

  *Creates an instance with a new **EntityFactory*** (p. *506*) *policy.*
- **DomainParticipantQos WithUserData** (**UserData** policy)

  *Creates an instance with a new **UserData*** (p. *506*) *policy.*
- **DomainParticipantQos WithWireProtocol** (**WireProtocol** policy)

  *Creates an instance with a new **WireProtocol*** (p. *506*) *policy.*
- **DomainParticipantQos WithWireProtocol** (Action< **WireProtocolBuilder** > build)

  *Creates a new instance with a new **WireProtocol*** (p. *506*) *policy as configured by a build action*
- **DomainParticipantQos WithTransportBuiltin** (**TransportBuiltin** policy)

  *Creates an instance with a new **TransportBuiltin*** (p. *506*) *policy.*
- **DomainParticipantQos WithTransportBuiltin** (Action< **TransportBuiltinBuilder** > build)

  *Creates a new instance with a new **TransportBuiltin*** (p. *506*) *policy as configured by a build action*
- **DomainParticipantQos WithTransportUnicast** (**TransportUnicast** policy)

  *Creates an instance with a new **TransportUnicast*** (p. *507*) *policy.*
- **DomainParticipantQos WithTransportUnicast** (Action< ImmutableList< **TransportUnicastSettings** >.Builder > build)

  *Creates a new instance with a new **TransportUnicast*** (p. *507*) *policy as configured by a build action*
- **DomainParticipantQos WithDiscovery** (**Discovery** policy)

  *Creates an instance with a new **Discovery*** (p. *507*) *policy.*
- **DomainParticipantQos WithDiscovery** (Action< **DiscoveryBuilder** > build)

  *Creates a new instance with a new **Discovery*** (p. *507*) *policy as configured by a build action*
- **DomainParticipantQos WithDatabase** (**Database** policy)

  *Creates an instance with a new **Database*** (p. *507*) *policy.*
- **DomainParticipantQos WithDatabase** (Action< **DatabaseBuilder** > build)

  *Creates a new instance with a new **Database*** (p. *507*) *policy as configured by a build action*
- **DomainParticipantQos WithDiscoveryConfig** (**DiscoveryConfig** policy)

  *Creates an instance with a new **DiscoveryConfig*** (p. *508*) *policy.*
- **DomainParticipantQos WithDiscoveryConfig** (Action< **DiscoveryConfigBuilder** > build)

  *Creates a new instance with a new **DiscoveryConfig*** (p. *508*) *policy as configured by a build action*
- **DomainParticipantQos WithResourceLimits** (**DomainParticipantResourceLimits** policy)

  *Creates an instance with a new **ResourceLimits*** (p. *507*) *policy.*
- **DomainParticipantQos WithResourceLimits** (Action< **DomainParticipantResourceLimitsBuilder** > build)

  *Creates a new instance with a new **ResourceLimits*** (p. *507*) *policy as configured by a build action*
- **DomainParticipantQos WithEvent** (**Event** policy)

  *Creates an instance with a new **Event*** (p. *507*) *policy.*
- **DomainParticipantQos WithEvent** (Action< **EventBuilder** > build)

  *Creates a new instance with a new **Event*** (p. *507*) *policy as configured by a build action*
- **DomainParticipantQos WithReceiverPool** (**ReceiverPool** policy)

  *Creates an instance with a new **ReceiverPool*** (p. *507*) *policy.*
- **DomainParticipantQos WithReceiverPool** (Action< **ReceiverPoolBuilder** > build)

  *Creates a new instance with a new **ReceiverPool*** (p. *507*) *policy as configured by a build action*
- **DomainParticipantQos WithParticipantName** (**EntityName** policy)

  *Creates an instance with a new **ParticipantName*** (p. *508*) *policy.*
- **DomainParticipantQos WithParticipantName** (Action< **EntityNameBuilder** > build)

  *Creates a new instance with a new **ParticipantName*** (p. *508*) *policy as configured by a build action*

- **DomainParticipantQos WithProperty** (**Property** policy)

  *Creates an instance with a new **Property** (p. 508) policy.*
- **DomainParticipantQos WithProperty** (Action< ImmutableDictionary< string, **Property.Entry** >.Builder > build)

  *Creates a new instance with a new **Property** (p. 508) policy as configured by a build action*
- **DomainParticipantQos WithService** (**Service** policy)

  *Creates an instance with a new **Service** (p. 508) policy.*
- **DomainParticipantQos WithService** (Action< **ServiceBuilder** > build)

  *Creates a new instance with a new **Service** (p. 508) policy as configured by a build action*
- **DomainParticipantQos WithPartition** (**Partition** policy)

  *Creates an instance with a new **Partition** (p. 508) policy.*
- bool **Equals** (**DomainParticipantQos** other)

  Compares all the policies for equality
- override int **GetHashCode** ()

  Returns the hash code by combining that of each policy
- override string **ToString** ()

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintFormat** format)

  Returns an XML representation of the QoS object.
- string **ToString** (**DomainParticipantQos** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintAll** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.

Properties

- static **DomainParticipantQos Default** = new **DomainParticipantQos**() `[get]`

  *Singleton containing the documented default value of a **DomainParticipantQos** (p. 490)*
- **UserData UserData** `[get]`

  *Gets the **UserData** (p. 506) policy.*
- **EntityFactory EntityFactory** `[get]`

  *Gets the **EntityFactory** (p. 506) policy.*
- **WireProtocol WireProtocol** `[get]`

  *Gets the **WireProtocol** (p. 506) policy.*
- **TransportBuiltin TransportBuiltin** `[get]`

  *Gets the **TransportBuiltin** (p. 506) policy.*
- **TransportUnicast TransportUnicast** `[get]`

  *Gets the **TransportUnicast** (p. 507) policy.*
- **Discovery Discovery** `[get]`

  *Gets the **Discovery** (p. 507) policy.*
- **DomainParticipantResourceLimits ResourceLimits** `[get]`

  Gets the DomainParticipantResourceLimits policy.
- **Event Event** `[get]`

  *Gets the **Event** (p. 507) policy.*
- **ReceiverPool ReceiverPool** `[get]`

  *Gets the **ReceiverPool** (p. 507) policy.*

- **Database Database** [get]

  *Gets the **Database** (p. 507) policy.*
- **DiscoveryConfig DiscoveryConfig** [get]

  *Gets the **DiscoveryConfig** (p. 508) policy.*
- **Property Property** [get]

  *Gets the **Property** (p. 508) policy.*
- **EntityName ParticipantName** [get]

  *Gets the **ParticipantName** (p. 508) policy.*
- **Service Service** [get]

  *Gets the **Service** (p. 508) policy.*
- **Partition Partition** [get]

  *Gets the **Partition** (p. 508) policy.*

9.77.1 Detailed Description

QoS policies supported by a **DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_DomainParticipantQos

9.77.2 Member Function Documentation

9.77.2.1 WithEntityFactory()

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithEntityFactory (
            EntityFactory policy )  [inline]
```

Creates an instance with a new **EntityFactory** (p. 506) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.2 WithUserData()

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithUserData (
            UserData policy )  [inline]
```

Creates an instance with a new **UserData** (p. 506) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.3 WithWireProtocol() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithWireProtocol (
            WireProtocol policy )  [inline]
```

Creates an instance with a new **WireProtocol** (p. 506) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.4 WithWireProtocol() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithWireProtocol (
          Action<  WireProtocolBuilder > build )
```

Creates a new instance with a new **WireProtocol** (p. 506) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.5 WithTransportBuiltin() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithTransportBuiltin (
            TransportBuiltin policy ) [inline]
```

Creates an instance with a new **TransportBuiltin** (p. 506) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.6 WithTransportBuiltin() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithTransportBuiltin (
          Action< TransportBuiltinBuilder > build )
```

Creates a new instance with a new **TransportBuiltin** (p. 506) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.7 WithTransportUnicast() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithTransportUnicast (
            TransportUnicast policy ) [inline]
```

Creates an instance with a new **TransportUnicast** (p. 507) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.8 WithTransportUnicast() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithTransportUnicast (
            Action< ImmutableList<  TransportUnicastSettings >.Builder > build )
```

Creates a new instance with a new **TransportUnicast** (p. 507) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.9 WithDiscovery() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithDiscovery (
             Discovery policy )  [inline]
```

Creates an instance with a new **Discovery** (p. 507) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.10 WithDiscovery() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithDiscovery (
            Action<  DiscoveryBuilder > build )
```

Creates a new instance with a new **Discovery** (p. 507) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.11 WithDatabase() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithDatabase (
            Database policy )  [inline]
```

Creates an instance with a new **Database** (p. 507) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.12 WithDatabase() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithDatabase (
          Action<  DatabaseBuilder > build )
```

Creates a new instance with a new **Database** (p. 507) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.13 WithDiscoveryConfig() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithDiscoveryConfig (
            DiscoveryConfig policy )  [inline]
```

Creates an instance with a new **DiscoveryConfig** (p. 508) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.14 WithDiscoveryConfig() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithDiscoveryConfig (
          Action<  DiscoveryConfigBuilder > build )
```

Creates a new instance with a new **DiscoveryConfig** (p. 508) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.15 WithResourceLimits() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithResourceLimits (
            DomainParticipantResourceLimits policy )  [inline]
```

Creates an instance with a new **ResourceLimits** (p. 507) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.16 WithResourceLimits() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithResourceLimits (
            Action< DomainParticipantResourceLimitsBuilder > build )
```

Creates a new instance with a new **ResourceLimits** (p. 507) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.17 WithEvent() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithEvent (
             Event policy ) [inline]
```

Creates an instance with a new **Event** (p. 507) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.18 WithEvent() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithEvent (
            Action< EventBuilder > build )
```

Creates a new instance with a new **Event** (p. 507) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.19 WithReceiverPool() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithReceiverPool (
            ReceiverPool policy ) [inline]
```

Creates an instance with a new **ReceiverPool** (p. 507) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.20 WithReceiverPool() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithReceiverPool (
          Action< ReceiverPoolBuilder > build )
```

Creates a new instance with a new **ReceiverPool** (p. 507) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.21 WithParticipantName() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithParticipantName (
            EntityName policy )  [inline]
```

Creates an instance with a new **ParticipantName** (p. 508) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.22 WithParticipantName() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithParticipantName (
          Action<  EntityNameBuilder > build )
```

Creates a new instance with a new **ParticipantName** (p. 508) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.23 WithProperty() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithProperty (
            Property policy )  [inline]
```

Creates an instance with a new **Property** (p. 508) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.24 WithProperty() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithProperty (
            Action< ImmutableDictionary< string,  Property.Entry >.Builder > build )
```

Creates a new instance with a new **Property** (p. 508) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.25 WithService() [1/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithService (
             Service policy )  [inline]
```

Creates an instance with a new **Service** (p. 508) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.26 WithService() [2/2]

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithService (
            Action<  ServiceBuilder > build )
```

Creates a new instance with a new **Service** (p. 508) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.77.2.27 WithPartition()

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.WithPartition (
            Partition policy )  [inline]
```

Creates an instance with a new **Partition** (p. 508) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.77.2.28 Equals()

```
bool Rti.Dds.Domain.DomainParticipantQos.Equals (
            DomainParticipantQos other )  [inline]
```

Compares all the policies for equality

9.77.2.29 GetHashCode()

```
override int Rti.Dds.Domain.DomainParticipantQos.GetHashCode ( )  [inline]
```

Returns the hash code by combining that of each policy

9.77.2.30 ToString() [1/4]

```
override string Rti.Dds.Domain.DomainParticipantQos.ToString ( )
```

Returns an XML representation of the QoS object.

The output is formatted using the default values for the QosPrintFormat and only QoS policies which differ from the documented default are included.

9.77.2.31 ToString() [2/4]

```
string Rti.Dds.Domain.DomainParticipantQos.ToString (
            QosPrintFormat format )
```

Returns an XML representation of the QoS object.

Parameters

format	The baseQos profile.

This overload accepts a value for the baseQos. Only the differences between the **DomainParticipantQos** (p. 490) object being printed and the baseQos are included in the output.

9.77.2.32 ToString() [3/4]

```
string Rti.Dds.Domain.DomainParticipantQos.ToString (
            DomainParticipantQos baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	The baseQos profile.
format	the format used to configure the output. If not supplied the output is formatted using the default format.

This overload accepts a value for the baseQos. Only the differences between the **DomainParticipantQos** (p. 490) object being printed and the baseQos are included in the output.

9.77.2.33 ToString() [4/4]

```
string Rti.Dds.Domain.DomainParticipantQos.ToString (
            QosPrintAll baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	Used to indicate that the entire QoS object should be included in the output. The only value which should be provided for this argument is QosPrintAll.Value
format	The format used to configure the output. If not supplied, the output is formatted using the default format.

This overload accepts a parameter of type QosPrintAll. Unlike the other ToString overloads, the entire QoS object will be included in the output.

9.77.3 Property Documentation

9.77.3.1 Default

```
DomainParticipantQos Rti.Dds.Domain.DomainParticipantQos.Default = new DomainParticipantQos()
[static], [get]
```

Singleton containing the documented default value of a **DomainParticipantQos** (p. 490)

This is a static value containing the documented default values for each policy. In most cases, you should use **Domain↩ ParticipantFactory.DefaultParticipantQos** (p. 482), to get the runtime default value that takes into consideration the current configuration.

9.77.3.2 UserData

```
UserData Rti.Dds.Domain.DomainParticipantQos.UserData [get]
```

Gets the **UserData** (p. 506) policy.

9.77.3.3 EntityFactory

```
EntityFactory Rti.Dds.Domain.DomainParticipantQos.EntityFactory [get]
```

Gets the **EntityFactory** (p. 506) policy.

9.77.3.4 WireProtocol

```
WireProtocol Rti.Dds.Domain.DomainParticipantQos.WireProtocol [get]
```

Gets the **WireProtocol** (p. 506) policy.

9.77.3.5 TransportBuiltin

TransportBuiltin Rti.Dds.Domain.DomainParticipantQos.TransportBuiltin [get]

Gets the **TransportBuiltin** (p. 506) policy.

9.77.3.6 TransportUnicast

TransportUnicast Rti.Dds.Domain.DomainParticipantQos.TransportUnicast [get]

Gets the **TransportUnicast** (p. 507) policy.

9.77.3.7 Discovery

Discovery Rti.Dds.Domain.DomainParticipantQos.Discovery [get]

Gets the **Discovery** (p. 507) policy.

9.77.3.8 ResourceLimits

DomainParticipantResourceLimits Rti.Dds.Domain.DomainParticipantQos.ResourceLimits [get]

Gets the DomainParticipantResourceLimits policy.

9.77.3.9 Event

Event Rti.Dds.Domain.DomainParticipantQos.Event [get]

Gets the **Event** (p. 507) policy.

9.77.3.10 ReceiverPool

ReceiverPool Rti.Dds.Domain.DomainParticipantQos.ReceiverPool [get]

Gets the **ReceiverPool** (p. 507) policy.

9.77.3.11 Database

Database Rti.Dds.Domain.DomainParticipantQos.Database [get]

Gets the **Database** (p. 507) policy.

9.77.3.12 DiscoveryConfig

DiscoveryConfig Rti.Dds.Domain.DomainParticipantQos.DiscoveryConfig [get]

Gets the **DiscoveryConfig** (p. 508) policy.

9.77.3.13 Property

Property Rti.Dds.Domain.DomainParticipantQos.Property [get]

Gets the **Property** (p. 508) policy.

9.77.3.14 ParticipantName

EntityName Rti.Dds.Domain.DomainParticipantQos.ParticipantName [get]

Gets the **ParticipantName** (p. 508) policy.

9.77.3.15 Service

Service Rti.Dds.Domain.DomainParticipantQos.Service [get]

Gets the **Service** (p. 508) policy.

9.77.3.16 Partition

Partition Rti.Dds.Domain.DomainParticipantQos.Partition [get]

Gets the **Partition** (p. 508) policy.

9.78 Rti.RequestReply.DomainParticipantRequestReplyExtensions Class Reference

Provides Request-Reply extensions to **Rti.Dds.Domain.DomainParticipant** (p. 451).

Static Public Member Functions

- static **RequesterBuilder**< TRequest, TReply > **BuildRequester**< **TRequest, TReply** > (this **DomainParticipant** participant)

  *Returns a **RequesterBuilder** (p. 978) that allows configuring and creating a **Requester** (p. 971).*
- static **ReplierBuilder**< TRequest, TReply > **BuildReplier**< **TRequest, TReply** > (this **DomainParticipant** participant)

  *Returns a **ReplierBuilder** (p. 959) that allows configuring and creating a **Replier** (p. 951).*
- static **SimpleReplierBuilder**< TRequest, TReply > **BuildSimpleReplier**< **TRequest, TReply** > (this **DomainParticipant** participant)

  *Returns a **SimpleReplierBuilder** (p. 1062) that allows configuring and creating a **SimpleReplier** (p. 1061).*

9.78.1 Detailed Description

Provides Request-Reply extensions to **Rti.Dds.Domain.DomainParticipant** (p. 451).

9.78.2 Member Function Documentation

9.78.2.1 BuildRequester< TRequest, TReply >()

```
static RequesterBuilder< TRequest, TReply > Rti.RequestReply.DomainParticipantRequestReply↩
Extensions.BuildRequester< TRequest, TReply > (
            this DomainParticipant participant ) [static]
```

Returns a **RequesterBuilder** (p. 978) that allows configuring and creating a **Requester** (p. 971).

Returns

The new empty builder to create a new **Requester** (p. 971).

9.78.2.2 BuildReplier< TRequest, TReply >()

```
static ReplierBuilder< TRequest, TReply > Rti.RequestReply.DomainParticipantRequestReplyExtensions.↩
BuildReplier< TRequest, TReply > (
            this DomainParticipant participant ) [static]
```

Returns a **ReplierBuilder** (p. 959) that allows configuring and creating a **Replier** (p. 951).

Returns

The new empty builder to create a new **Replier** (p. 951).

9.78.2.3 BuildSimpleReplier< TRequest, TReply >()

```
static SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.DomainParticipantRequestReply↩
Extensions.BuildSimpleReplier< TRequest, TReply > (
            this DomainParticipant participant ) [static]
```

Returns a **SimpleReplierBuilder** (p. 1062) that allows configuring and creating a **SimpleReplier** (p. 1061).

Returns

The new empty builder to create a new **SimpleReplier** (p. 1061).

9.79 Rti.Dds.Core.Policy.DomainParticipantResourceLimits Class Reference

Various settings that configure how a **Rti.Dds.Domain.DomainParticipant** (p. 451) allocates and uses physical memory for internal resources, including the maximum sizes of various properties.

Inherits IEquatable< DomainParticipantResourceLimits >.

Public Member Functions

- **DomainParticipantResourceLimits With** (Action< **DomainParticipantResourceLimitsBuilder** > build)

  *Creates a new **DomainParticipantResourceLimits** (p. 510) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DomainParticipantResourceLimits** other)

  Compares for equality

Properties

- **AllocationSettings LocalWriterAllocation** [get]

  Allocation settings applied to local DataWriters.
- **AllocationSettings LocalReaderAllocation** [get]

  Allocation settings applied to local DataReaders.
- **AllocationSettings LocalPublisherAllocation** [get]

  Allocation settings applied to local Publisher.
- **AllocationSettings LocalSubscriberAllocation** [get]

  Allocation settings applied to local Subscriber.
- **AllocationSettings LocalTopicAllocation** [get]

  Allocation settings applied to local Topic.
- **AllocationSettings RemoteWriterAllocation** [get]

  Allocation settings applied to remote DataWriters.
- **AllocationSettings RemoteReaderAllocation** [get]

  Allocation settings applied to remote DataReaders.
- **AllocationSettings RemoteParticipantAllocation** [get]

  Allocation settings applied to remote DomainParticipants.
- **AllocationSettings MatchingWriterReaderPairAllocation** [get]

  Allocation settings applied to matching local writer and remote/local reader pairs.
- **AllocationSettings MatchingReaderWriterPairAllocation** [get]

  Allocation settings applied to matching local reader and remote/local writer pairs.
- **AllocationSettings IgnoredEntityAllocation** [get]

  Allocation settings applied to ignored entities.
- **AllocationSettings ContentFilteredTopicAllocation** [get]

  Allocation settings applied to content filtered topic.
- **AllocationSettings ContentFilterAllocation** [get]

  Allocation settings applied to content filter.
- **AllocationSettings ReadConditionAllocation** [get]

  Allocation settings applied to read condition pool.
- **AllocationSettings QueryConditionAllocation** [get]

  Allocation settings applied to query condition pool.
- **AllocationSettings OutstandingAsynchronousSampleAllocation** [get]

  Allocation settings applied to the maximum number of samples (from all DataWriter) waiting to be asynchronously written.
- **AllocationSettings FlowControllerAllocation** [get]

  Allocation settings applied to flow controllers.
- int **LocalWriterHashBuckets** [get]

  Hash_Buckets settings applied to local DataWriters.
- int **LocalReaderHashBuckets** [get]

  Number of hash buckets for local DataReaders.
- int **LocalPublisherHashBuckets** [get]

  Number of hash buckets for local Publisher.
- int **LocalSubscriberHashBuckets** [get]

  Number of hash buckets for local Subscriber.
- int **LocalTopicHashBuckets** [get]

  Number of hash buckets for local Topic.
- int **RemoteWriterHashBuckets** [get]

Number of hash buckets for remote DataWriters.

- int **RemoteReaderHashBuckets** [get]

  Number of hash buckets for remote DataReaders.

- int **RemoteParticipantHashBuckets** [get]

  Number of hash buckets for remote DomainParticipants.

- int **MatchingWriterReaderPairHashBuckets** [get]

  Number of hash buckets for matching local writer and remote/local reader pairs.

- int **MatchingReaderWriterPairHashBuckets** [get]

  Number of hash buckets for matching local reader and remote/local writer pairs.

- int **IgnoredEntityHashBuckets** [get]

  Number of hash buckets for ignored entities.

- int **ContentFilteredTopicHashBuckets** [get]

  Number of hash buckets for content filtered topics.

- int **ContentFilterHashBuckets** [get]

  Number of hash buckets for content filters.

- int **FlowControllerHashBuckets** [get]

  Number of hash buckets for flow controllers.

- int **MaxGatherDestinations** [get]

  Maximum number of destinations per send.

- int **ParticipantUserDataMaxLength** [get]

  Maximum length of user data in DomainParticipantQos and ParticipantBuiltinTopicData

- int **TopicDataMaxLength** [get]

  Maximum length of topic data in TopicQos, TopicBuiltinTopicData, PublicationBuiltinTopicData and SubscriptionBuiltin↩ TopicData

- int **PublisherGroupDataMaxLength** [get]

  Maximum length of group data in PublisherQos and PublicationBuiltinTopicData

- int **SubscriberGroupDataMaxLength** [get]

  Maximum length of group data in SubscriberQos and SubscriptionBuiltinTopicData

- int **WriterUserDataMaxLength** [get]

  Maximum length of user data in DataWriterQos and PublicationBuiltinTopicData

- int **ReaderUserDataMaxLength** [get]

  Maximum length of user data in DataReaderQos and SubscriptionBuiltinTopicData

- int **MaxPartitions** [get]

  *Maximum number of partition name strings allowable in a **Partition** (p. 838).*

- int **MaxPartitionCumulativeCharacters** [get]

  *Maximum number of combined characters allowable in all partition names in a **Partition** (p. 838).*

- int **TypeCodeMaxSerializedLength** [get]

  Maximum size of serialized string for type code.

- int **TypeObjectMaxSerializedLength** [get]

  The maximum length, in bytes, that the buffer to serialize a TypeObject can consume.

- int **SerializedTypeObjectDynamicAllocationThreshold** [get]

  A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.

- int **TypeObjectMaxDeserializedLength** [get]

  The maximum number of bytes that a deserialized TypeObject can consume.

- int **DeserializedTypeObjectDynamicAllocationThreshold** [get]

  A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.

- int **ContentfilterPropertyMaxLength** [get]

This field is the maximum length of all data related to a Content-filtered topic.

- int **ChannelSeqMaxLength** [get]

  *Maximum number of channels that can be specified in MultiChannelQosPolicy for **MultiChannel** (p. 796) DataWriters.*
- int **ChannelFilterExpressionMaxLength** [get]

  *Maximum length of a channel ChannelSettings_t filter_expression in a **MultiChannel** (p. 796) DataWriter.*
- int **ParticipantPropertyListMaxLength** [get]

  Maximum number of properties associated with the DomainParticipant.
- int **ParticipantPropertyStringMaxLength** [get]

  Maximum string length of the properties associated with the DomainParticipant.
- int **WriterPropertyListMaxLength** [get]

  Maximum number of properties associated with a DataWriter.
- int **WriterPropertyStringMaxLength** [get]

  Maximum string length of the properties associated with a DataWriter.
- int **ReaderPropertyListMaxLength** [get]

  Maximum number of properties associated with a DataReader.
- int **ReaderPropertyStringMaxLength** [get]

  Maximum string length of the properties associated with a DataReader.
- int **MaxEndpointGroups** [get]

  *Maximum number of **EndpointGroup** (p. 592) allowable in a **Availability** (p. 187).*
- int **MaxEndpointGroupCumulativeCharacters** [get]

  *Maximum number of combined role_name characters allowed in all **EndpointGroup** (p. 592) in a **Availability** (p. 187).*
- int **TransportInfoListMaxLength** [get]

  Maximum number of installed transports to send and receive information about in ParticipantBuiltinTopicData_transport↩ _info.
- **IgnoredEntityReplacementKind IgnoredEntityReplacement** [get]

  *Replacement policy for the ignored entities. It sets what entity can be replaced when resource limits set in **Ignored↩ EntityAllocation** (p. 517) are reached.*
- **AllocationSettings RemoteTopicQueryAllocation** [get]

  Allocation settings applied to remote TopicQueries.
- int **RemoteTopicQueryHashBuckets** [get]

  Number of hash buckets for remote TopicQueries.
- int **WriterDataTagListMaxLength** [get]

  Maximum number of data tags associated with a DataWriter.
- int **WriterDataTagStringMaxLength** [get]

  Maximum string length of the data tags associated with a DataWriter.
- int **ReaderDataTagListMaxLength** [get]

  Maximum number of data tags associated with a DataReader.
- int **ReaderDataTagStringMaxLength** [get]

  Maximum string length of the data tags associated with a DataReader.
- uint **ShmemRefTransferModeMaxSegments** [get]

  Maximum number of segments created by all DataWriters belonging to a DomainParticipant.
- static **DomainParticipantResourceLimits Default** = CreateDefault() [get]

  *Singleton containing the default value of a **DomainParticipantResourceLimits** (p. 510)*

9.79.1 Detailed Description

Various settings that configure how a **Rti.Dds.Domain.DomainParticipant** (p. 451) allocates and uses physical memory for internal resources, including the maximum sizes of various properties.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQosPolicy

9.79.2 Member Function Documentation

9.79.2.1 With()

```
DomainParticipantResourceLimits Rti.Dds.Core.Policy.DomainParticipantResourceLimits.With (
            Action< DomainParticipantResourceLimitsBuilder > build )  [inline]
```

Creates a new **DomainParticipantResourceLimits** (p. 510) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DomainParticipantResourceLimits** (p. 510).

Returns

A new **DomainParticipantResourceLimits** (p. 510) with the changes applied by the Action

9.79.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.GetHashCode ( )  [inline]
```

Gets the hash code

9.79.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DomainParticipantResourceLimits.Equals (
            object other )
```

Compares for equality

9.79.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DomainParticipantResourceLimits.Equals (
             DomainParticipantResourceLimits other )  [inline]
```

Compares for equality

9.79.3 Property Documentation

9.79.3.1 LocalWriterAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalWriterAllocation [get]

Allocation settings applied to local DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_local_writer_allocation

9.79.3.2 LocalReaderAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalReaderAllocation [get]

Allocation settings applied to local DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_local_reader_allocation

9.79.3.3 LocalPublisherAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalPublisherAllocation [get]

Allocation settings applied to local Publisher.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_local_publisher_allocation

9.79.3.4 LocalSubscriberAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalSubscriberAllocation [get]

Allocation settings applied to local Subscriber.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_local_subscriber_allocation

9.79.3.5 LocalTopicAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalTopicAllocation [get]

Allocation settings applied to local Topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_local_topic_allocation

9.79.3.6 RemoteWriterAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteWriterAllocation [get]

Allocation settings applied to remote DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_remote_writer_allocation

9.79.3.7 RemoteReaderAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteReaderAllocation [get]

Allocation settings applied to remote DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_remote_reader_allocation

9.79.3.8 RemoteParticipantAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteParticipantAllocation [get]

Allocation settings applied to remote DomainParticipants.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_remote_participant_allocation

9.79.3.9 MatchingWriterReaderPairAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MatchingWriterReaderPair↩ Allocation [get]

Allocation settings applied to matching local writer and remote/local reader pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_matching_writer_reader_pair_allocation

9.79.3.10 MatchingReaderWriterPairAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MatchingReaderWriterPair↩
Allocation [get]

Allocation settings applied to matching local reader and remote/local writer pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_matching_reader_writer_pair_allocation

9.79.3.11 IgnoredEntityAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.IgnoredEntityAllocation
[get]

Allocation settings applied to ignored entities.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_ignored_entity_allocation

9.79.3.12 ContentFilteredTopicAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ContentFilteredTopic↩
Allocation [get]

Allocation settings applied to content filtered topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_content_filtered_topic_allocation

9.79.3.13 ContentFilterAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ContentFilterAllocation
[get]

Allocation settings applied to content filter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_content_filter_allocation

9.79.3.14 ReadConditionAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ReadConditionAllocation
[get]

Allocation settings applied to read condition pool.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_read_condition_allocation

9.79.3.15 QueryConditionAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.QueryConditionAllocation [get]

Allocation settings applied to query condition pool.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_query_condition_allocation

9.79.3.16 OutstandingAsynchronousSampleAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.OutstandingAsynchronous↩SampleAllocation [get]

Allocation settings applied to the maximum number of samples (from all DataWriter) waiting to be asynchronously written.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_outstanding_asynchronous_sample_allocation

9.79.3.17 FlowControllerAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.FlowControllerAllocation [get]

Allocation settings applied to flow controllers.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_flow_controller_allocation

9.79.3.18 LocalWriterHashBuckets

int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalWriterHashBuckets [get]

Hash_Buckets settings applied to local DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_local_writer_hash_buckets

9.79.3.19 LocalReaderHashBuckets

int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalReaderHashBuckets [get]

Number of hash buckets for local DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩Policy_local_reader_hash_buckets

9.79.3.20 LocalPublisherHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalPublisherHashBuckets [get]
```

Number of hash buckets for local Publisher.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_publisher_hash_buckets

9.79.3.21 LocalSubscriberHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalSubscriberHashBuckets [get]
```

Number of hash buckets for local Subscriber.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_subscriber_hash_buckets

9.79.3.22 LocalTopicHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.LocalTopicHashBuckets [get]
```

Number of hash buckets for local Topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_topic_hash_buckets

9.79.3.23 RemoteWriterHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteWriterHashBuckets [get]
```

Number of hash buckets for remote DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_writer_hash_buckets

9.79.3.24 RemoteReaderHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteReaderHashBuckets [get]
```

Number of hash buckets for remote DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_reader_hash_buckets

9.79.3.25 RemoteParticipantHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteParticipantHashBuckets [get]
```

Number of hash buckets for remote DomainParticipants.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_remote_participant_hash_buckets

9.79.3.26 MatchingWriterReaderPairHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MatchingWriterReaderPairHashBuckets [get]
```

Number of hash buckets for matching local writer and remote/local reader pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_matching_writer_reader_pair_hash_buckets

9.79.3.27 MatchingReaderWriterPairHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MatchingReaderWriterPairHashBuckets [get]
```

Number of hash buckets for matching local reader and remote/local writer pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_matching_reader_writer_pair_hash_buckets

9.79.3.28 IgnoredEntityHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.IgnoredEntityHashBuckets [get]
```

Number of hash buckets for ignored entities.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_ignored_entity_hash_buckets

9.79.3.29 ContentFilteredTopicHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ContentFilteredTopicHashBuckets [get]
```

Number of hash buckets for content filtered topics.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_content_filtered_topic_hash_buckets

9.79.3.30 ContentFilterHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ContentFilterHashBuckets [get]
```

Number of hash buckets for content filters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_content_filter_hash_buckets

9.79.3.31 FlowControllerHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.FlowControllerHashBuckets [get]
```

Number of hash buckets for flow controllers.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_flow_controller_hash_buckets

9.79.3.32 MaxGatherDestinations

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MaxGatherDestinations [get]
```

Maximum number of destinations per send.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_gather_destinations

9.79.3.33 ParticipantUserDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ParticipantUserDataMaxLength [get]
```

Maximum length of user data in DomainParticipantQos and ParticipantBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_participant_user_data_max_length

9.79.3.34 TopicDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.TopicDataMaxLength [get]
```

Maximum length of topic data in TopicQos, TopicBuiltinTopicData, PublicationBuiltinTopicData and SubscriptionBuiltin↩ TopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_topic_data_max_length

9.79.3.35 PublisherGroupDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.PublisherGroupDataMaxLength [get]
```

Maximum length of group data in PublisherQos and PublicationBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_publisher_group_data_max_length

9.79.3.36 SubscriberGroupDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.SubscriberGroupDataMaxLength [get]
```

Maximum length of group data in SubscriberQos and SubscriptionBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_subscriber_group_data_max_length

9.79.3.37 WriterUserDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.WriterUserDataMaxLength [get]
```

Maximum length of user data in DataWriterQos and PublicationBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_writer_user_data_max_length

9.79.3.38 ReaderUserDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ReaderUserDataMaxLength [get]
```

Maximum length of user data in DataReaderQos and SubscriptionBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_reader_user_data_max_length

9.79.3.39 MaxPartitions

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MaxPartitions [get]
```

Maximum number of partition name strings allowable in a **Partition** (p. 838).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_partitions

9.79.3.40 MaxPartitionCumulativeCharacters

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MaxPartitionCumulativeCharacters [get]
```

Maximum number of combined characters allowable in all partition names in a **Partition** (p. 838).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_partition_cumulative_characters

9.79.3.41 TypeCodeMaxSerializedLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.TypeCodeMaxSerializedLength [get]
```

Maximum size of serialized string for type code.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_type_code_max_serialized_length

9.79.3.42 TypeObjectMaxSerializedLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.TypeObjectMaxSerializedLength [get]
```

The maximum length, in bytes, that the buffer to serialize a TypeObject can consume.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_type_object_max_serialized_length

9.79.3.43 SerializedTypeObjectDynamicAllocationThreshold

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.SerializedTypeObjectDynamicAllocation↩
Threshold [get]
```

A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_deserialized_type_object_dynamic_allocation_threshold

9.79.3.44 TypeObjectMaxDeserializedLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.TypeObjectMaxDeserializedLength [get]
```

The maximum number of bytes that a deserialized TypeObject can consume.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_type_object_max_deserialized_length

9.79.3.45 DeserializedTypeObjectDynamicAllocationThreshold

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.DeserializedTypeObjectDynamicAllocation↩
Threshold [get]
```

A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_deserialized_type_object_dynamic_allocation_threshold

9.79.3.46 ContentfilterPropertyMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ContentfilterPropertyMaxLength [get]
```

This field is the maximum length of all data related to a Content-filtered topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_contentfilter_property_max_length

9.79.3.47 ChannelSeqMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ChannelSeqMaxLength [get]
```

Maximum number of channels that can be specified in MultiChannelQosPolicy for **MultiChannel** (p. 796) DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_channel_seq_max_length

9.79.3.48 ChannelFilterExpressionMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ChannelFilterExpressionMaxLength [get]
```

Maximum length of a channel ChannelSettings_t_filter_expression in a **MultiChannel** (p. 796) DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_channel_filter_expression_max_length

9.79.3.49 ParticipantPropertyListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ParticipantPropertyListMaxLength [get]
```

Maximum number of properties associated with the DomainParticipant.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_participant_property_list_max_length

9.79.3.50 ParticipantPropertyStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ParticipantPropertyStringMaxLength [get]
```

Maximum string length of the properties associated with the DomainParticipant.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_participant_property_string_max_length

9.79.3.51 WriterPropertyListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.WriterPropertyListMaxLength [get]
```

Maximum number of properties associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_writer_property_list_max_length

9.79.3.52 WriterPropertyStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.WriterPropertyStringMaxLength [get]
```

Maximum string length of the properties associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_writer_property_string_max_length

9.79.3.53 ReaderPropertyListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ReaderPropertyListMaxLength [get]
```

Maximum number of properties associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_reader_property_list_max_length

9.79.3.54 ReaderPropertyStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ReaderPropertyStringMaxLength [get]
```

Maximum string length of the properties associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_reader_property_string_max_length

9.79.3.55 MaxEndpointGroups

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MaxEndpointGroups [get]
```

Maximum number of **EndpointGroup** (p. 592) allowable in a **Availability** (p. 187).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_endpoint_groups

9.79.3.56 MaxEndpointGroupCumulativeCharacters

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.MaxEndpointGroupCumulativeCharacters [get]
```

Maximum number of combined role_name characters allowed in all **EndpointGroup** (p. 592) in a **Availability** (p. 187).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_endpoint_group_cumulative_characters

9.79.3.57 TransportInfoListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.TransportInfoListMaxLength [get]
```

Maximum number of installed transports to send and receive information about in ParticipantBuiltinTopicData_↩ transport_info.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_transport_info_list_max_length

9.79.3.58 IgnoredEntityReplacement

IgnoredEntityReplacementKind Rti.Dds.Core.Policy.DomainParticipantResourceLimits.IgnoredEntity↩ Replacement [get]

Replacement policy for the ignored entities. It sets what entity can be replaced when resource limits set in **Ignored**↩ **EntityAllocation** (p. 517) are reached.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_ignored_entity_replacement_kind

9.79.3.59 RemoteTopicQueryAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteTopicQueryAllocation [get]

Allocation settings applied to remote TopicQueries.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_remote_topic_query_allocation

9.79.3.60 RemoteTopicQueryHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.RemoteTopicQueryHashBuckets [get]
```

Number of hash buckets for remote TopicQueries.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_topic_query_hash_buckets

9.79.3.61 WriterDataTagListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.WriterDataTagListMaxLength [get]
```

Maximum number of data tags associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_writer_data_tag_list_max_length

9.79.3.62 WriterDataTagStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.WriterDataTagStringMaxLength [get]
```

Maximum string length of the data tags associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_writer_data_tag_string_max_length

9.79.3.63 ReaderDataTagListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ReaderDataTagListMaxLength [get]
```

Maximum number of data tags associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_reader_data_tag_list_max_length

9.79.3.64 ReaderDataTagStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ReaderDataTagStringMaxLength [get]
```

Maximum string length of the data tags associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_reader_data_tag_string_max_length

9.79.3.65 ShmemRefTransferModeMaxSegments

```
uint Rti.Dds.Core.Policy.DomainParticipantResourceLimits.ShmemRefTransferModeMaxSegments [get]
```

Maximum number of segments created by all DataWriters belonging to a DomainParticipant.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_shmem_ref_transfer_mode_max_segments

9.79.3.66 Default

```
DomainParticipantResourceLimits Rti.Dds.Core.Policy.DomainParticipantResourceLimits.Default =
CreateDefault() [static], [get]
```

Singleton containing the default value of a **DomainParticipantResourceLimits** (p. 510)

9.80 Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder Class Reference

A modifiable type used to create an immutable **DomainParticipantResourceLimits** (p. 510)

Public Member Functions

- **DomainParticipantResourceLimitsBuilder** (**DomainParticipantResourceLimits** data)
  Creates a builder with the values of an existing immutable instance
- **DomainParticipantResourceLimits Build** ()
  *Creates a new **DomainParticipantResourceLimits** (p. 510) immutable object from this one.*

Properties

- **AllocationSettings LocalWriterAllocation** [get, set]
  Allocation settings applied to local DataWriters.
- **AllocationSettings LocalReaderAllocation** [get, set]
  Allocation settings applied to local DataReaders.
- **AllocationSettings LocalPublisherAllocation** [get, set]
  Allocation settings applied to local Publisher.
- **AllocationSettings LocalSubscriberAllocation** [get, set]
  Allocation settings applied to local Subscriber.
- **AllocationSettings LocalTopicAllocation** [get, set]
  Allocation settings applied to local Topic.
- **AllocationSettings RemoteWriterAllocation** [get, set]
  Allocation settings applied to remote DataWriters.
- **AllocationSettings RemoteReaderAllocation** [get, set]

Allocation settings applied to remote DataReaders.

- **AllocationSettings RemoteParticipantAllocation** [get, set]

  Allocation settings applied to remote DomainParticipants.
- **AllocationSettings MatchingWriterReaderPairAllocation** [get, set]

  Allocation settings applied to matching local writer and remote/local reader pairs.
- **AllocationSettings MatchingReaderWriterPairAllocation** [get, set]

  Allocation settings applied to matching local reader and remote/local writer pairs.
- **AllocationSettings IgnoredEntityAllocation** [get, set]

  Allocation settings applied to ignored entities.
- **AllocationSettings ContentFilteredTopicAllocation** [get, set]

  Allocation settings applied to content filtered topic.
- **AllocationSettings ContentFilterAllocation** [get, set]

  Allocation settings applied to content filter.
- **AllocationSettings ReadConditionAllocation** [get, set]

  Allocation settings applied to read condition pool.
- **AllocationSettings QueryConditionAllocation** [get, set]

  Allocation settings applied to query condition pool.
- **AllocationSettings OutstandingAsynchronousSampleAllocation** [get, set]

  Allocation settings applied to the maximum number of samples (from all DataWriter) waiting to be asynchronously written.
- **AllocationSettings FlowControllerAllocation** [get, set]

  Allocation settings applied to flow controllers.
- int **LocalWriterHashBuckets** [get, set]

  Hash_Buckets settings applied to local DataWriters.
- int **LocalReaderHashBuckets** [get, set]

  Number of hash buckets for local DataReaders.
- int **LocalPublisherHashBuckets** [get, set]

  Number of hash buckets for local Publisher.
- int **LocalSubscriberHashBuckets** [get, set]

  Number of hash buckets for local Subscriber.
- int **LocalTopicHashBuckets** [get, set]

  Number of hash buckets for local Topic.
- int **RemoteWriterHashBuckets** [get, set]

  Number of hash buckets for remote DataWriters.
- int **RemoteReaderHashBuckets** [get, set]

  Number of hash buckets for remote DataReaders.
- int **RemoteParticipantHashBuckets** [get, set]

  Number of hash buckets for remote DomainParticipants.
- int **MatchingWriterReaderPairHashBuckets** [get, set]

  Number of hash buckets for matching local writer and remote/local reader pairs.
- int **MatchingReaderWriterPairHashBuckets** [get, set]

  Number of hash buckets for matching local reader and remote/local writer pairs.
- int **IgnoredEntityHashBuckets** [get, set]

  Number of hash buckets for ignored entities.
- int **ContentFilteredTopicHashBuckets** [get, set]

  Number of hash buckets for content filtered topics.
- int **ContentFilterHashBuckets** [get, set]

  Number of hash buckets for content filters.

- int **FlowControllerHashBuckets** [get, set]

  Number of hash buckets for flow controllers.
- int **MaxGatherDestinations** [get, set]

  Maximum number of destinations per RTI Connext send.
- int **ParticipantUserDataMaxLength** [get, set]

  Maximum length of user data in DomainParticipantQos and ParticipantBuiltinTopicData
- int **TopicDataMaxLength** [get, set]

  Maximum length of topic data in TopicQos, TopicBuiltinTopicData, PublicationBuiltinTopicData and SubscriptionBuiltin↩ TopicData
- int **PublisherGroupDataMaxLength** [get, set]

  Maximum length of group data in PublisherQos and PublicationBuiltinTopicData
- int **SubscriberGroupDataMaxLength** [get, set]

  Maximum length of group data in SubscriberQos and SubscriptionBuiltinTopicData
- int **WriterUserDataMaxLength** [get, set]

  Maximum length of user data in DataWriterQos and PublicationBuiltinTopicData
- int **ReaderUserDataMaxLength** [get, set]

  Maximum length of user data in DataReaderQos and SubscriptionBuiltinTopicData
- int **MaxPartitions** [get, set]

  *Maximum number of partition name strings allowable in a **Partition** (p. 838).*
- int **MaxPartitionCumulativeCharacters** [get, set]

  *Maximum number of combined characters allowable in all partition names in a **Partition** (p. 838).*
- int **TypeCodeMaxSerializedLength** [get, set]

  Maximum size of serialized string for type code.
- int **TypeObjectMaxSerializedLength** [get, set]

  The maximum length, in bytes, that the buffer to serialize a TypeObject can consume.
- int **SerializedTypeObjectDynamicAllocationThreshold** [get, set]

  A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.
- int **TypeObjectMaxDeserializedLength** [get, set]

  The maximum number of bytes that a deserialized TypeObject can consume.
- int **DeserializedTypeObjectDynamicAllocationThreshold** [get, set]

  A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.
- int **ContentfilterPropertyMaxLength** [get, set]

  This field is the maximum length of all data related to a Content-filtered topic.
- int **ChannelSeqMaxLength** [get, set]

  *Maximum number of channels that can be specified in MultiChannelQosPolicy for **MultiChannel** (p. 796) DataWriters.*
- int **ChannelFilterExpressionMaxLength** [get, set]

  *Maximum length of a channel ChannelSettings_t filter_expression in a **MultiChannel** (p. 796) DataWriter.*
- int **ParticipantPropertyListMaxLength** [get, set]

  Maximum number of properties associated with the DomainParticipant.
- int **ParticipantPropertyStringMaxLength** [get, set]

  Maximum string length of the properties associated with the DomainParticipant.
- int **WriterPropertyListMaxLength** [get, set]

  Maximum number of properties associated with a DataWriter.
- int **WriterPropertyStringMaxLength** [get, set]

  Maximum string length of the properties associated with a DataWriter.
- int **ReaderPropertyListMaxLength** [get, set]

  Maximum number of properties associated with a DataReader.

- int **ReaderPropertyStringMaxLength** [get, set]

  Maximum string length of the properties associated with a DataReader.
- int **MaxEndpointGroups** [get, set]

  *Maximum number of **EndpointGroup** (p. 592) allowable in a **Availability** (p. 187).*
- int **MaxEndpointGroupCumulativeCharacters** [get, set]

  *Maximum number of combined role_name characters allowed in all **EndpointGroup** (p. 592) in a **Availability** (p. 187).*
- int **TransportInfoListMaxLength** [get, set]

  Maximum number of installed transports to send and receive information about in ParticipantBuiltinTopicData_transport_info.
- **IgnoredEntityReplacementKind IgnoredEntityReplacement** [get, set]

  Replacement policy for the ignored entities. It sets what entity can be replaced when resource limits set in DomainParticipantResourceLimitsQosPolicy_ignored_entity_allocation are reached.
- **AllocationSettings RemoteTopicQueryAllocation** [get, set]

  Allocation settings applied to remote TopicQueries.
- int **RemoteTopicQueryHashBuckets** [get, set]

  Number of hash buckets for remote TopicQueries.
- int **WriterDataTagListMaxLength** [get, set]

  Maximum number of data tags associated with a DataWriter.
- int **WriterDataTagStringMaxLength** [get, set]

  Maximum string length of the data tags associated with a DataWriter.
- int **ReaderDataTagListMaxLength** [get, set]

  Maximum number of data tags associated with a DataReader.
- int **ReaderDataTagStringMaxLength** [get, set]

  Maximum string length of the data tags associated with a DataReader.
- uint **ShmemRefTransferModeMaxSegments** [get, set]

  Maximum number of segments created by all DataWriters belonging to a DomainParticipant.

9.80.1 Detailed Description

A modifiable type used to create an immutable **DomainParticipantResourceLimits** (p. 510)

9.80.2 Constructor & Destructor Documentation

9.80.2.1 DomainParticipantResourceLimitsBuilder()

```
Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.DomainParticipantResourceLimitsBuilder
(
            DomainParticipantResourceLimits data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.80.3 Member Function Documentation

9.80.3.1 Build()

DomainParticipantResourceLimits Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.Build ( )

Creates a new **DomainParticipantResourceLimits** (p. 510) immutable object from this one.

9.80.4 Property Documentation

9.80.4.1 LocalWriterAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalWriterAllocation [get], [set]

Allocation settings applied to local DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_local_writer_allocation

9.80.4.2 LocalReaderAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalReaderAllocation [get], [set]

Allocation settings applied to local DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_local_reader_allocation

9.80.4.3 LocalPublisherAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalPublisher↩ Allocation [get], [set]

Allocation settings applied to local Publisher.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_local_publisher_allocation

9.80.4.4 LocalSubscriberAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalSubscriber↩
Allocation [get], [set]

Allocation settings applied to local Subscriber.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_subscriber_allocation

9.80.4.5 LocalTopicAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalTopicAllocation
[get], [set]

Allocation settings applied to local Topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_topic_allocation

9.80.4.6 RemoteWriterAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteWriter↩
Allocation [get], [set]

Allocation settings applied to remote DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_writer_allocation

9.80.4.7 RemoteReaderAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteReader↩
Allocation [get], [set]

Allocation settings applied to remote DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_reader_allocation

9.80.4.8 RemoteParticipantAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteParticipant↩
Allocation [get], [set]

Allocation settings applied to remote DomainParticipants.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_participant_allocation

9.80.4.9 MatchingWriterReaderPairAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MatchingWriter↩
ReaderPairAllocation [get], [set]

Allocation settings applied to matching local writer and remote/local reader pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_matching_writer_reader_pair_allocation

9.80.4.10 MatchingReaderWriterPairAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MatchingReader↩
WriterPairAllocation [get], [set]

Allocation settings applied to matching local reader and remote/local writer pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_matching_reader_writer_pair_allocation

9.80.4.11 IgnoredEntityAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.IgnoredEntity↩
Allocation [get], [set]

Allocation settings applied to ignored entities.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_ignored_entity_allocation

9.80.4.12 ContentFilteredTopicAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ContentFiltered↩
TopicAllocation [get], [set]

Allocation settings applied to content filtered topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_content_filtered_topic_allocation

9.80.4.13 ContentFilterAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ContentFilter↩
Allocation [get], [set]

Allocation settings applied to content filter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_content_filter_allocation

9.80.4.14 ReadConditionAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ReadCondition↩
Allocation [get], [set]

Allocation settings applied to read condition pool.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_read_condition_allocation

9.80.4.15 QueryConditionAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.QueryCondition↩
Allocation [get], [set]

Allocation settings applied to query condition pool.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_query_condition_allocation

9.80.4.16 OutstandingAsynchronousSampleAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.OutstandingAsynchronous↩
SampleAllocation [get], [set]

Allocation settings applied to the maximum number of samples (from all DataWriter) waiting to be asynchronously written.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_outstanding_asynchronous_sample_allocation

9.80.4.17 FlowControllerAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.FlowController↩
Allocation [get], [set]

Allocation settings applied to flow controllers.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_flow_controller_allocation

9.80.4.18 LocalWriterHashBuckets

int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalWriterHashBuckets [get],
[set]

Hash_Buckets settings applied to local DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_writer_hash_buckets

9.80.4.19 LocalReaderHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalReaderHashBuckets [get],
[set]
```

Number of hash buckets for local DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_reader_hash_buckets

9.80.4.20 LocalPublisherHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalPublisherHashBuckets [get],
[set]
```

Number of hash buckets for local Publisher.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_publisher_hash_buckets

9.80.4.21 LocalSubscriberHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalSubscriberHashBuckets [get],
[set]
```

Number of hash buckets for local Subscriber.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_subscriber_hash_buckets

9.80.4.22 LocalTopicHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.LocalTopicHashBuckets [get], [set]
```

Number of hash buckets for local Topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_local_topic_hash_buckets

9.80.4.23 RemoteWriterHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteWriterHashBuckets [get],
[set]
```

Number of hash buckets for remote DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_writer_hash_buckets

9.80.4.24 RemoteReaderHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteReaderHashBuckets [get],
[set]
```

Number of hash buckets for remote DataReaders.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_reader_hash_buckets

9.80.4.25 RemoteParticipantHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteParticipantHashBuckets [get],
[set]
```

Number of hash buckets for remote DomainParticipants.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_participant_hash_buckets

9.80.4.26 MatchingWriterReaderPairHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MatchingWriterReaderPairHashBuckets
[get], [set]
```

Number of hash buckets for matching local writer and remote/local reader pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_matching_writer_reader_pair_hash_buckets

9.80.4.27 MatchingReaderWriterPairHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MatchingReaderWriterPairHashBuckets
[get], [set]
```

Number of hash buckets for matching local reader and remote/local writer pairs.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_matching_reader_writer_pair_hash_buckets

9.80.4.28 IgnoredEntityHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.IgnoredEntityHashBuckets [get],
[set]
```

Number of hash buckets for ignored entities.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_ignored_entity_hash_buckets

9.80.4.29 ContentFilteredTopicHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ContentFilteredTopicHashBuckets
[get], [set]
```

Number of hash buckets for content filtered topics.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_content_filtered_topic_hash_buckets

9.80.4.30 ContentFilterHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ContentFilterHashBuckets [get],
[set]
```

Number of hash buckets for content filters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_content_filter_hash_buckets

9.80.4.31 FlowControllerHashBuckets

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.FlowControllerHashBuckets [get],
[set]
```

Number of hash buckets for flow controllers.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_flow_controller_hash_buckets

9.80.4.32 MaxGatherDestinations

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MaxGatherDestinations [get], [set]
```

Maximum number of destinations per RTI Connext send.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_max_gather_destinations

9.80.4.33 ParticipantUserDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ParticipantUserDataMaxLength [get],
[set]
```

Maximum length of user data in DomainParticipantQos and ParticipantBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_participant_user_data_max_length

9.80.4.34 TopicDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.TopicDataMaxLength [get], [set]
```

Maximum length of topic data in TopicQos, TopicBuiltinTopicData, PublicationBuiltinTopicData and SubscriptionBuiltin↩ TopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_topic_data_max_length

9.80.4.35 PublisherGroupDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.PublisherGroupDataMaxLength [get],
[set]
```

Maximum length of group data in PublisherQos and PublicationBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_publisher_group_data_max_length

9.80.4.36 SubscriberGroupDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.SubscriberGroupDataMaxLength [get],
[set]
```

Maximum length of group data in SubscriberQos and SubscriptionBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_subscriber_group_data_max_length

9.80.4.37 WriterUserDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.WriterUserDataMaxLength [get],
[set]
```

Maximum length of user data in DataWriterQos and PublicationBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_writer_user_data_max_length

9.80.4.38 ReaderUserDataMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ReaderUserDataMaxLength [get],
[set]
```

Maximum length of user data in DataReaderQos and SubscriptionBuiltinTopicData

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_reader_user_data_max_length

9.80.4.39 MaxPartitions

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MaxPartitions [get], [set]
```

Maximum number of partition name strings allowable in a **Partition** (p. 838).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_partitions

9.80.4.40 MaxPartitionCumulativeCharacters

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MaxPartitionCumulativeCharacters
[get], [set]
```

Maximum number of combined characters allowable in all partition names in a **Partition** (p. 838).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_partition_cumulative_characters

9.80.4.41 TypeCodeMaxSerializedLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.TypeCodeMaxSerializedLength [get],
[set]
```

Maximum size of serialized string for type code.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_type_code_max_serialized_length

9.80.4.42 TypeObjectMaxSerializedLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.TypeObjectMaxSerializedLength [get],
[set]
```

The maximum length, in bytes, that the buffer to serialize a TypeObject can consume.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_type_object_max_serialized_length

9.80.4.43 SerializedTypeObjectDynamicAllocationThreshold

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.SerializedTypeObjectDynamicAllocation↩
Threshold [get], [set]
```

A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_deserialized_type_object_dynamic_allocation_threshold

9.80.4.44 TypeObjectMaxDeserializedLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.TypeObjectMaxDeserializedLength
[get], [set]
```

The maximum number of bytes that a deserialized TypeObject can consume.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_type_object_max_deserialized_length

9.80.4.45 DeserializedTypeObjectDynamicAllocationThreshold

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.DeserializedTypeObjectDynamic↩
AllocationThreshold [get], [set]
```

A threshold, in bytes, for dynamic memory allocation for the deserialized TypeObject.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_deserialized_type_object_dynamic_allocation_threshold

9.80.4.46 ContentfilterPropertyMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ContentfilterPropertyMaxLength
[get], [set]
```

This field is the maximum length of all data related to a Content-filtered topic.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_contentfilter_property_max_length

9.80.4.47 ChannelSeqMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ChannelSeqMaxLength [get], [set]
```

Maximum number of channels that can be specified in MultiChannelQosPolicy for **MultiChannel** (p. 796) DataWriters.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_channel_seq_max_length

9.80.4.48 ChannelFilterExpressionMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ChannelFilterExpressionMaxLength
[get], [set]
```

Maximum length of a channel ChannelSettings_t filter_expression in a **MultiChannel** (p. 796) DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_channel_filter_expression_max_length

9.80.4.49 ParticipantPropertyListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ParticipantPropertyListMaxLength
[get], [set]
```

Maximum number of properties associated with the DomainParticipant.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_participant_property_list_max_length

9.80.4.50 ParticipantPropertyStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ParticipantPropertyStringMaxLength
[get], [set]
```

Maximum string length of the properties associated with the DomainParticipant.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_participant_property_string_max_length

9.80.4.51 WriterPropertyListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.WriterPropertyListMaxLength [get],
[set]
```

Maximum number of properties associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_writer_property_list_max_length

9.80.4.52 WriterPropertyStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.WriterPropertyStringMaxLength [get],
[set]
```

Maximum string length of the properties associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_writer_property_string_max_length

9.80.4.53 ReaderPropertyListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ReaderPropertyListMaxLength [get],
[set]
```

Maximum number of properties associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_reader_property_list_max_length

9.80.4.54 ReaderPropertyStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ReaderPropertyStringMaxLength [get],
[set]
```

Maximum string length of the properties associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_reader_property_string_max_length

9.80.4.55 MaxEndpointGroups

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MaxEndpointGroups [get], [set]
```

Maximum number of **EndpointGroup** (p. 592) allowable in a **Availability** (p. 187).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_endpoint_groups

9.80.4.56 MaxEndpointGroupCumulativeCharacters

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.MaxEndpointGroupCumulativeCharacters
[get], [set]
```

Maximum number of combined role_name characters allowed in all **EndpointGroup** (p. 592) in a **Availability** (p. 187).

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_max_endpoint_group_cumulative_characters

9.80.4.57 TransportInfoListMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.TransportInfoListMaxLength [get],
[set]
```

Maximum number of installed transports to send and receive information about in ParticipantBuiltinTopicData_↩ transport_info.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_transport_info_list_max_length

9.80.4.58 IgnoredEntityReplacement

IgnoredEntityReplacementKind Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.Ignored↩ EntityReplacement [get], [set]

Replacement policy for the ignored entities. It sets what entity can be replaced when resource limits set in Domain↩ ParticipantResourceLimitsQosPolicy_ignored_entity_allocation are reached.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_ignored_entity_replacement_kind

9.80.4.59 RemoteTopicQueryAllocation

AllocationSettings Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteTopicQuery↩
Allocation [get], [set]

Allocation settings applied to remote TopicQueries.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_topic_query_allocation

9.80.4.60 RemoteTopicQueryHashBuckets

int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.RemoteTopicQueryHashBuckets [get],
[set]

Number of hash buckets for remote TopicQueries.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_remote_topic_query_hash_buckets

9.80.4.61 WriterDataTagListMaxLength

int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.WriterDataTagListMaxLength [get],
[set]

Maximum number of data tags associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_writer_data_tag_list_max_length

9.80.4.62 WriterDataTagStringMaxLength

int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.WriterDataTagStringMaxLength [get],
[set]

Maximum string length of the data tags associated with a DataWriter.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_writer_data_tag_string_max_length

9.80.4.63 ReaderDataTagListMaxLength

int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ReaderDataTagListMaxLength [get],
[set]

Maximum number of data tags associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩
Policy_reader_data_tag_list_max_length

9.80.4.64 ReaderDataTagStringMaxLength

```
int Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ReaderDataTagStringMaxLength [get],
[set]
```

Maximum string length of the data tags associated with a DataReader.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_reader_data_tag_string_max_length

9.80.4.65 ShmemRefTransferModeMaxSegments

```
uint Rti.Dds.Core.Policy.DomainParticipantResourceLimitsBuilder.ShmemRefTransferModeMaxSegments
[get], [set]
```

Maximum number of segments created by all DataWriters belonging to a DomainParticipant.

The full documentation is available in the C API: DDS_DomainParticipantResourceLimitsQos↩ Policy_shmem_ref_transfer_mode_max_segments

9.81 Rti.Dds.Core.Policy.Durability Class Reference

This QoS policy specifies whether or not DDS will store and deliver previously published data samples to new Subscription.DataReader<T> entities that join the network later.

Inherits IEquatable< Durability >.

Public Member Functions

- **Durability With** (Action< **DurabilityBuilder** > build)

  *Creates a new **Durability** (p. 545) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Durability** other)

  Compares for equality

Static Public Attributes

- const int **AutoWriterDepth** = 0

  *A special value used as the default for **WriterDepth** (p. 548).*

Properties

- **DurabilityKind Kind** [get]

  The kind of durability.
- bool **DirectCommunication** [get]

  Indicates whether or not a TRANSIENT or PERSISTENT Subscription.DataReader<T> should receive samples directly from a TRANSIENT or PERSISTENT Publication.DataWriter<T>
- int **WriterDepth** [get]

  Indicates the number of samples a durable Publication.DataWriter<T> will send to a late joining Subscription.DataReader<T>.
- **PersistentStorageSettings StorageSettings** [get]

  Configures durable writer history and durable reader state
- static **Durability Default** [get]

  Singleton containing the default value of a ***Durability*** *(p. 545)*

9.81.1 Detailed Description

This QoS policy specifies whether or not DDS will store and deliver previously published data samples to new Subscription.DataReader<T> entities that join the network later.

9.81.2 Member Function Documentation

9.81.2.1 With()

```
Durability Rti.Dds.Core.Policy.Durability.With (
            Action<  DurabilityBuilder > build )  [inline]
```

Creates a new **Durability** (p. 545) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Durability** (p. 545).

Returns

A new **Durability** (p. 545) with the changes applied by the Action

9.81.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Durability.GetHashCode ( )  [inline]
```

Gets the hash code

9.81.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Durability.Equals (
            object other )
```

Compares for equality

9.81.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Durability.Equals (
             Durability other )  [inline]
```

Compares for equality

9.81.3 Field Documentation

9.81.3.1 AutoWriterDepth

```
const int Rti.Dds.Core.Policy.Durability.AutoWriterDepth = 0  [static]
```

A special value used as the default for **WriterDepth** (p. 548).

The full documentation is available in the C API: DDSDurabilityQosPolicyAUTO_WRITER_DEPTH

9.81.4 Property Documentation

9.81.4.1 Kind

DurabilityKind Rti.Dds.Core.Policy.Durability.Kind [get]

The kind of durability.

The full documentation is available in the C API: DDS_DurabilityQosPolicy_kind

9.81.4.2 DirectCommunication

bool Rti.Dds.Core.Policy.Durability.DirectCommunication [get]

Indicates whether or not a TRANSIENT or PERSISTENT Subscription.DataReader<T> should receive samples directly from a TRANSIENT or PERSISTENT Publication.DataWriter<T>

The full documentation is available in the C API: DDS_DurabilityQosPolicy_direct_communication

9.81.4.3 WriterDepth

int Rti.Dds.Core.Policy.Durability.WriterDepth [get]

Indicates the number of samples a durable Publication.DataWriter<T> will send to a late joining Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_DurabilityQosPolicy_writer_depth

9.81.4.4 StorageSettings

PersistentStorageSettings Rti.Dds.Core.Policy.Durability.StorageSettings [get]

Configures durable writer history and durable reader state

The full documentation is available in the C API: DDS_DurabilityQosPolicy_storage_settings

9.81.4.5 Default

Durability Rti.Dds.Core.Policy.Durability.Default [static], [get]

Singleton containing the default value of a **Durability** (p. 545)

9.82 Rti.Dds.Core.Policy.DurabilityBuilder Class Reference

A modifiable type used to create an immutable **Durability** (p. 545)

Public Member Functions

- **DurabilityBuilder** (**Durability** data)

  Creates a builder with the values of an existing immutable instance
- **Durability Build** ()

  *Creates a new **Durability** (p. 545) immutable object from this one.*

Properties

- **DurabilityKind Kind** `[get, set]`

  The kind of durability.
- bool **DirectCommunication** `[get, set]`

  *Read/write property for **Durability.DirectCommunication** (p. 548)*
- int **WriterDepth** `[get, set]`

  *Read/write property for **Durability.WriterDepth** (p. 548)*
- **PersistentStorageSettingsBuilder StorageSettings** `[get, set]`

  Configures durable writer history and durable reader

9.82.1 Detailed Description

A modifiable type used to create an immutable **Durability** (p. 545)

9.82.2 Constructor & Destructor Documentation

9.82.2.1 DurabilityBuilder()

```
Rti.Dds.Core.Policy.DurabilityBuilder.DurabilityBuilder (
            Durability data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.82.3 Member Function Documentation

9.82.3.1 Build()

```
Durability Rti.Dds.Core.Policy.DurabilityBuilder.Build ( )
```

Creates a new **Durability** (p. 545) immutable object from this one.

9.82.4 Property Documentation

9.82.4.1 Kind

DurabilityKind Rti.Dds.Core.Policy.DurabilityBuilder.Kind [get], [set]

The kind of durability.

The full documentation is available in the C API: DDS_DurabilityQosPolicy_kind

9.82.4.2 DirectCommunication

bool Rti.Dds.Core.Policy.DurabilityBuilder.DirectCommunication [get], [set]

Read/write property for **Durability.DirectCommunication** (p. 548)

9.82.4.3 WriterDepth

int Rti.Dds.Core.Policy.DurabilityBuilder.WriterDepth [get], [set]

Read/write property for **Durability.WriterDepth** (p. 548)

The full documentation is available in the C API: DDS_DurabilityQosPolicy_writer_depth

9.82.4.4 StorageSettings

PersistentStorageSettingsBuilder Rti.Dds.Core.Policy.DurabilityBuilder.StorageSettings [get], [set]

Configures durable writer history and durable reader

The full documentation is available in the C API: DDS_DurabilityQosPolicy_storage_settings

9.83 Rti.Dds.Core.Policy.DurabilityService Class Reference

Configures an external Persistence **Service** (p. 1049) used for Datawriters with a **Durability.Kind** (p. 547) of Durability↩ Kind.Persistent or DurabilityKind.Transient

Inherits IEquatable< DurabilityService >.

Public Member Functions

- **DurabilityService With** (Action< **DurabilityServiceBuilder** > build)

  *Creates a new **DurabilityService** (p. 550) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**DurabilityService** other)

  Compares for equality

Properties

- **Duration ServiceCleanupDelay** [get]

  Controls when the service is able to remove all information regarding a data instances.
- **HistoryKind HistoryKind** [get]

  The kind of history to apply in recouping durable data.
- int **HistoryDepth** [get]

  Part of history QoS policy to apply when feeding a late joiner.
- int **MaxSamples** [get]

  Part of resource limits QoS policy to apply when feeding a late joiner.
- int **MaxInstances** [get]

  Part of resource limits QoS policy to apply when feeding a late joiner.
- int **MaxSamplesPerInstance** [get]

  Part of resource limits QoS policy to apply when feeding a late joiner.
- static **DurabilityService Default** [get]

  *Singleton containing the default value of a **DurabilityService** (p. 550)*

9.83.1 Detailed Description

Configures an external Persistence **Service** (p. 1049) used for Datawriters with a **Durability.Kind** (p. 547) of Durability↩ Kind.Persistent or DurabilityKind.Transient

9.83.2 Member Function Documentation

9.83.2.1 With()

```
DurabilityService Rti.Dds.Core.Policy.DurabilityService.With (
            Action< DurabilityServiceBuilder > build ) [inline]
```

Creates a new **DurabilityService** (p. 550) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **DurabilityService** (p. 550).

Returns

A new **DurabilityService** (p. 550) with the changes applied by the Action

9.83.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.DurabilityService.GetHashCode ( )  [inline]
```

Gets the hash code

9.83.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.DurabilityService.Equals (
            object other )
```

Compares for equality

9.83.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.DurabilityService.Equals (
             DurabilityService other )  [inline]
```

Compares for equality

9.83.3 Property Documentation

9.83.3.1 ServiceCleanupDelay

```
Duration Rti.Dds.Core.Policy.DurabilityService.ServiceCleanupDelay  [get]
```

Controls when the service is able to remove all information regarding a data instances.

The full documentation is available in the C API: DDS_DurabilityServiceQosPolicy_service_↩cleanup_delay

9.83.3.2 HistoryKind

HistoryKind Rti.Dds.Core.Policy.DurabilityService.HistoryKind [get]

The kind of history to apply in recouping durable data.

The full documentation is available in the C API: DDS_DurabilityServiceQosPolicy_history_kind

9.83.3.3 HistoryDepth

int Rti.Dds.Core.Policy.DurabilityService.HistoryDepth [get]

Part of history QoS policy to apply when feeding a late joiner.

The full documentation is available in the C API: DDS_DurabilityServiceQosPolicy_history_depth

9.83.3.4 MaxSamples

int Rti.Dds.Core.Policy.DurabilityService.MaxSamples [get]

Part of resource limits QoS policy to apply when feeding a late joiner.

The full documentation is available in the C API: DDS_DurabilityServiceQosPolicy_max_samples

9.83.3.5 MaxInstances

int Rti.Dds.Core.Policy.DurabilityService.MaxInstances [get]

Part of resource limits QoS policy to apply when feeding a late joiner.

The full documentation is available in the C API: DDS_DurabilityServiceQosPolicy_max_instances

9.83.3.6 MaxSamplesPerInstance

int Rti.Dds.Core.Policy.DurabilityService.MaxSamplesPerInstance [get]

Part of resource limits QoS policy to apply when feeding a late joiner.

The full documentation is available in the C API: DDS_DurabilityServiceQosPolicy_max_samples_↩ per_instance

9.83.3.7 Default

```
DurabilityService Rti.Dds.Core.Policy.DurabilityService.Default  [static], [get]
```

Singleton containing the default value of a **DurabilityService** (p. 550)

9.84 Rti.Dds.Core.Policy.DurabilityServiceBuilder Class Reference

A modifiable type used to create an immutable **DurabilityService** (p. 550)

Public Member Functions

- **DurabilityServiceBuilder** (**DurabilityService** data)

  Creates a builder with the values of an existing immutable instance
- **DurabilityService Build** ()

  *Creates a new **DurabilityService** (p. 550) immutable object from this one.*

Properties

- **Duration ServiceCleanupDelay** `[get, set]`

  Controls when the service is able to remove all information regarding a data instances.
- **HistoryKind HistoryKind** `[get, set]`

  The kind of history to apply in recouping durable data.
- int **HistoryDepth** `[get, set]`

  Part of history QoS policy to apply when feeding a late joiner.
- int **MaxSamples** `[get, set]`

  Part of resource limits QoS policy to apply when feeding a late joiner.
- int **MaxInstances** `[get, set]`

  Part of resource limits QoS policy to apply when feeding a late joiner.
- int **MaxSamplesPerInstance** `[get, set]`

  Part of resource limits QoS policy to apply when feeding a late joiner.

9.84.1 Detailed Description

A modifiable type used to create an immutable **DurabilityService** (p. 550)

9.84.2 Constructor & Destructor Documentation

9.84.2.1 DurabilityServiceBuilder()

```
Rti.Dds.Core.Policy.DurabilityServiceBuilder.DurabilityServiceBuilder (
            DurabilityService data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.84.3 Member Function Documentation

9.84.3.1 Build()

```
DurabilityService Rti.Dds.Core.Policy.DurabilityServiceBuilder.Build ( )
```

Creates a new **DurabilityService** (p. 550) immutable object from this one.

9.84.4 Property Documentation

9.84.4.1 ServiceCleanupDelay

```
Duration Rti.Dds.Core.Policy.DurabilityServiceBuilder.ServiceCleanupDelay  [get], [set]
```

Controls when the service is able to remove all information regarding a data instances.

The full documentation is available in the C API: DDS_DurabilityServiceQosPolicy_service_↩cleanup_delay

9.84.4.2 HistoryKind

```
HistoryKind Rti.Dds.Core.Policy.DurabilityServiceBuilder.HistoryKind  [get], [set]
```

The kind of history to apply in recouping durable data.

*The full documentation is available in the C API:*DDS_DurabilityServiceQosPolicy_history_kind

9.84.4.3 HistoryDepth

```
int Rti.Dds.Core.Policy.DurabilityServiceBuilder.HistoryDepth  [get], [set]
```

Part of history QoS policy to apply when feeding a late joiner.

*The full documentation is available in the C API:*DDS_DurabilityServiceQosPolicy_history_depth

9.84.4.4 MaxSamples

```
int Rti.Dds.Core.Policy.DurabilityServiceBuilder.MaxSamples  [get], [set]
```

Part of resource limits QoS policy to apply when feeding a late joiner.

The full documentation is available in the C API: `DDS_DurabilityServiceQosPolicy_max_samples`

9.84.4.5 MaxInstances

```
int Rti.Dds.Core.Policy.DurabilityServiceBuilder.MaxInstances  [get], [set]
```

Part of resource limits QoS policy to apply when feeding a late joiner.

The full documentation is available in the C API: `DDS_DurabilityServiceQosPolicy_max_instances`

9.84.4.6 MaxSamplesPerInstance

```
int Rti.Dds.Core.Policy.DurabilityServiceBuilder.MaxSamplesPerInstance  [get], [set]
```

Part of resource limits QoS policy to apply when feeding a late joiner.

The full documentation is available in the C API: `DDS_DurabilityServiceQosPolicy_max_samples_per_instance`

9.85 Omg.Dds.Core.Duration Struct Reference

Represents a time duration.

Inherits IEquatable< Duration >, and IComparable< Duration >.

Public Member Functions

- **Duration** (int sec, uint nsec=0)

  Creates a new object with the specified absolute number of seconds and nanoseconds.
- int **CompareTo** (**Duration** other)

  Compares two durations.
- bool **Equals** (**Duration** other)

  Compares two durations for equality.
- override bool **Equals** (object obj)

  Compares two objects for equality.
- override int **GetHashCode** ()

  Gets the hash code.
- override string **ToString** ()

  Converts this object to a string.

Static Public Member Functions

- static **Duration** **FromSeconds** (uint seconds)

  Creates a duration from the specified total number of seconds.
- static **Duration** **FromSeconds** (double seconds)

  Creates a duration from the specified total number of seconds.
- static **Duration** **FromMilliseconds** (ulong ms)

  Creates a duration from the specified total number of milliseconds.
- static bool **operator==** (in **Duration** a, in **Duration** b)

  Compares for equality.
- static bool **operator!=** (in **Duration** a, in **Duration** b)

  Compares for inequality.
- static bool **operator**< (in **Duration** a, in **Duration** b)

  Determines if one duration is smaller than another duration.
- static bool **operator**> (in **Duration** a, in **Duration** b)

  Determines if one duration is greater than another duration.
- static bool **operator<=** (in **Duration** a, in **Duration** b)

  Determines if one duration is smaller or equal than another duration.
- static bool **operator>=** (in **Duration** a, in **Duration** b)

  Determines if one duration is larger or equal than another duration.
- static **Duration** **operator-** (in **Duration** a, in **Duration** b)

  Substracts two durations.
- static **Duration** **operator+** (in **Duration** a, in **Duration** b)

  Adds two durations.
- static **operator TimeSpan** (**Duration** d)

  *Explicit conversion from **Duration** (p. 556) to TimeSpan. Loss of precision is possible, since a TimeSpan has a smaller resolution.*
- static **operator Duration** (TimeSpan t)

  *Explicit conversion from TimeSpan to **Duration** (p. 556).*

Static Public Attributes

- const uint **NanosecondsPerSecond** = 1_000_000_000

  Constant defining how many nanoseconds are in a second
- const uint **NanosecondsPerMillisecond** = 1_000_000

  Constant defining how many nanoseconds are in a millisecond
- const uint **MillisecondsPerSecond** = 1_000

  Constant defining how many milliseconds are in a second

Properties

- static **Duration Zero** = new **Duration**(0, 0) [get]

  Object representing a zero duration.
- static **Duration Infinite** [get]

  Object representing an Infinite duration
- static **Duration Auto** = new **Duration**(-1, 0) [get]

  Object indicating that the duration should be automatically determined.
- int **Seconds** [get]

  Gets the second component of this object.
- uint **Nanoseconds** [get]

  Gets the nanosecond component of this object.
- ulong **TotalMilliseconds** [get]

  Gets the total number of milliseconds

9.85.1 Detailed Description

Represents a time duration.

9.85.2 Constructor & Destructor Documentation

9.85.2.1 Duration()

```
Omg.Dds.Core.Duration.Duration (
            int sec,
            uint nsec = 0 )
```

Creates a new object with the specified absolute number of seconds and nanoseconds.

9.85.3 Member Function Documentation

9.85.3.1 FromSeconds() [1/2]

```
static  Duration Omg.Dds.Core.Duration.FromSeconds (
            uint seconds )  [static]
```

Creates a duration from the specified total number of seconds.

9.85.3.2 FromSeconds() [2/2]

```
static Duration Omg.Dds.Core.Duration.FromSeconds (
            double seconds ) [static]
```

Creates a duration from the specified total number of seconds.

9.85.3.3 FromMilliseconds()

```
static Duration Omg.Dds.Core.Duration.FromMilliseconds (
            ulong ms ) [static]
```

Creates a duration from the specified total number of milliseconds.

9.85.3.4 CompareTo()

```
int Omg.Dds.Core.Duration.CompareTo (
            Duration other )
```

Compares two durations.

9.85.3.5 Equals() [1/2]

```
bool Omg.Dds.Core.Duration.Equals (
            Duration other )
```

Compares two durations for equality.

9.85.3.6 Equals() [2/2]

```
override bool Omg.Dds.Core.Duration.Equals (
            object obj )
```

Compares two objects for equality.

9.85.3.7 GetHashCode()

```
override int Omg.Dds.Core.Duration.GetHashCode ( )
```

Gets the hash code.

9.85.3.8 ToString()

```
override string Omg.Dds.Core.Duration.ToString ( )
```

Converts this object to a string.

9.85.3.9 operator==()

```
static bool Omg.Dds.Core.Duration.operator== (
            in  Duration a,
            in  Duration b )  [static]
```

Compares for equality.

9.85.3.10 operator"!=()

```
static bool Omg.Dds.Core.Duration.operator!= (
            in  Duration a,
            in  Duration b )  [static]
```

Compares for inequality.

9.85.3.11 operator<()

```
static bool Omg.Dds.Core.Duration.operator< (
            in  Duration a,
            in  Duration b )  [static]
```

Determines if one duration is smaller than another duration.

9.85.3.12 operator>()

```
static bool Omg.Dds.Core.Duration.operator> (
            in  Duration a,
            in  Duration b )  [static]
```

Determines if one duration is greater than another duration.

9.85.3.13 operator<=()

```
static bool Omg.Dds.Core.Duration.operator<= (
            in  Duration a,
            in  Duration b )  [static]
```

Determines if one duration is smaller or equal than another duration.

9.85.3.14 operator>=()

```
static bool Omg.Dds.Core.Duration.operator>= (
            in  Duration a,
            in  Duration b )  [static]
```

Determines if one duration is larger or equal than another duration.

9.85.3.15 operator-()

```
static  Duration Omg.Dds.Core.Duration.operator- (
            in  Duration a,
            in  Duration b )  [inline], [static]
```

Substracts two durations.

9.85.3.16 operator+()

```
static  Duration Omg.Dds.Core.Duration.operator+ (
            in  Duration a,
            in  Duration b )  [inline], [static]
```

Adds two durations.

9.85.3.17 operator TimeSpan()

```
static Omg.Dds.Core.Duration.operator TimeSpan (
              Duration d )  [explicit], [static]
```

Explicit conversion from **Duration** (p. 556) to TimeSpan. Loss of precision is possible, since a TimeSpan has a smaller resolution.

9.85.3.18 operator Duration()

```
static Omg.Dds.Core.Duration.operator  Duration (
             TimeSpan t )  [explicit], [static]
```

Explicit conversion from TimeSpan to **Duration** (p. 556).

9.85.4 Field Documentation

9.85.4.1 NanosecondsPerSecond

```
const uint Omg.Dds.Core.Duration.NanosecondsPerSecond = 1_000_000_000  [static]
```

Constant defining how many nanoseconds are in a second

9.85.4.2 NanosecondsPerMillisecond

```
const uint Omg.Dds.Core.Duration.NanosecondsPerMillisecond = 1_000_000  [static]
```

Constant defining how many nanoseconds are in a millisecond

9.85.4.3 MillisecondsPerSecond

```
const uint Omg.Dds.Core.Duration.MillisecondsPerSecond = 1_000  [static]
```

Constant defining how many milliseconds are in a second

9.85.5 Property Documentation

9.85.5.1 Zero

```
Duration Omg.Dds.Core.Duration.Zero = new Duration(0, 0) [static], [get]
```

Object representing a zero duration.

9.85.5.2 Infinite

```
Duration Omg.Dds.Core.Duration.Infinite [static], [get]
```

Initial value:

```
= new Duration(
                0x7fffffff,
                0x7fffffff)
```

Object representing an Infinite duration

9.85.5.3 Auto

```
Duration Omg.Dds.Core.Duration.Auto = new Duration(-1, 0) [static], [get]
```

Object indicating that the duration should be automatically determined.

9.85.5.4 Seconds

```
int Omg.Dds.Core.Duration.Seconds [get]
```

Gets the second component of this object.

9.85.5.5 Nanoseconds

```
uint Omg.Dds.Core.Duration.Nanoseconds [get]
```

Gets the nanosecond component of this object.

9.85.5.6 TotalMilliseconds

```
ulong Omg.Dds.Core.Duration.TotalMilliseconds  [get]
```

Gets the total number of milliseconds

9.86 Rti.Types.Dynamic.DynamicData Class Reference

A data sample of any complex data type, which can be inspected and manipulated reflectively.

Inherits IDisposable, and IEquatable< DynamicData >.

Public Member Functions

- **DynamicData** (**DynamicType** type)
  *Create a new **DynamicData** (p. 564) object for a given type*
- **DynamicData** (**DynamicType** type, **DynamicDataProperty** property)
  *Create a new **DynamicData** (p. 564) object for a given type and custom configuration*
- **DynamicData Clone** ()
  Creates a deep copy of this object
- void **CopyFrom** (**DynamicData** source)
  Copies the sample into this one, overwritting it. Both samples must have the same type.
- T **GetValue**< **T** > (string memberName)
  Gets value of type T using the name of the member.
- T **GetValue**< **T** > (int memberId)
  Gets value of type T using the id of the member.
- **DynamicData SetValue**< **T** > (string memberName, T value)
  Sets value of type T using the name of the member.
- **DynamicData SetValue**< **T** > (int memberId, T value)
  Sets value of type T using the id of the member.
- **DynamicData SetAnyValue** (string memberName, object value)
  Sets a member value from any object
- **DynamicData SetAnyValue** (int memberId, object value)
  Sets a member value from an object
- object **GetAnyValue** (string memberName)
  Gets a member value without specifying its expected type at compilation time
- object **GetAnyValue** (int memberId)
  Gets a member value without specifying its expected type at compilation time
- int **GetDiscriminatorValue** ()
  *Deprecated. Use **GetDiscriminator()** (p. 574) instead. Obtains the value of the union discriminator (only for unions)*
- **LoanedDynamicData LoanValue** (string memberName)
  *Returns a loaned object to provide access to a complex field of this **DynamicData** (p. 564) object.*
- **LoanedDynamicData LoanValue** (int memberId)
  *Returns a loaned object to provide access to a complex field of this **DynamicData** (p. 564) object.*
- void **ClearAllMembers** ()

Clear the contents of all data members of this object.

- void **ClearMember** (string memberName)

  Clear the contents of a single data member of this object.
- void **ClearMember** (int memberId)

  Clear the contents of a single data member of this object.
- void **ClearOptionalMember** (string memberName)

  Clear the contents of a single optional data member of this object.
- void **ClearOptionalMember** (int memberId)

  Clear the contents of a single optional data member of this object.
- bool **MemberExists** (string memberName)

  Indicates whether a member exists in this sample
- bool **MemberExists** (int memberId)

  Indicates whether a member exists in this sample
- bool **MemberExistsInType** (string memberName)

  Indicates whether a member is defined in this data sample's type.
- bool **MemberExistsInType** (int memberId)

  Indicates whether a member is defined in this data sample's type.
- bool **IsMemberKey** (string memberName)

  Indicates whether a given member forms part of the key of this sample's data type.
- bool **IsMemberKey** (int memberId)

  Indicates whether a given member forms part of the key of this sample's data type.
- **DynamicType GetMemberType** (string memberName)

  Returns the type of a member
- **DynamicType GetMemberType** (int memberId)

  Returns the type of a member
- **MemberInfo GetMemberInfo** (string memberName)

  *Gets information about a member of this **DynamicData** (p. 564) sample.*
- **MemberInfo GetMemberInfo** (int memberId)

  *Gets information about a member of this **DynamicData** (p. 564) sample.*
- **MemberInfo GetMemberInfoByIndex** (uint index)

  *Gets information about a member (identified by its position) of this **DynamicData** (p. 564) sample.*
- int **GetDiscriminator** ()

  Obtains the value of the union discriminator (only for unions)
- void **SetDiscriminator** (int discriminator)

  Sets the value of the union discriminator (only for unions)
- void **Dispose** ()

  Releases the native resources (a finalizer is provided as well)
- byte[ ] **ToCdrBuffer** ()

  *Serializes a **DynamicData** (p. 564) as a CDR buffer of octets into a new array.*
- int **ToCdrBuffer** (byte[ ] buffer)

  *Serializes a **DynamicData** (p. 564) as a CDR buffer of octets into an existing array*
- void **FromCdrBuffer** (byte[ ] buffer)

  *Populates this **DynamicData** (p. 564) object from the serialized CDR data in a buffer*
- override int **GetHashCode** ()

  Returns a simple hash code.
- string **ToString** (**PrintFormatProperty** format)

  *Get a string representation of this **DynamicData** (p. 564) object.*

- override string **ToString** ()

  *Get a string representation of this **DynamicData** (p. 564) object with the default format*
- void **FromString** (string str, **PrintFormatKind** formatKind=PrintFormatKind.Json)

  *Populates this **DynamicData** (p. 564) object from a JSON string representation*
- override bool **Equals** (object other)

  Indicate whether two data samples are equal
- bool **Equals** (**DynamicData** other)

  Indicate whether two data samples are equal

Properties

- bool **Disposed** `[get]`

  Indicates whether this object has been disposed
- **DynamicType Type** `[get]`

  *Get the data type, of which this **DynamicData** (p. 564) represents an instance.*
- **TypeKind TypeKind** `[get]`

  Get the kind of this object's data type.
- uint **MemberCount** `[get]`

  *The number of data members in this **DynamicData** (p. 564) sample.*
- **DynamicDataInfo Info** `[get]`

  *Gets information about this **DynamicData** (p. 564) sample.*

9.86.1 Detailed Description

A data sample of any complex data type, which can be inspected and manipulated reflectively.

9.86.2 Constructor & Destructor Documentation

9.86.2.1 DynamicData() [1/2]

```
Rti.Types.Dynamic.DynamicData.DynamicData (
            DynamicType type )
```

Create a new **DynamicData** (p. 564) object for a given type

Parameters

type	The type definition for this data sample

9.86.2.2 DynamicData() [2/2]

```
Rti.Types.Dynamic.DynamicData.DynamicData (
            DynamicType type,
            DynamicDataProperty property )
```

Create a new **DynamicData** (p. 564) object for a given type and custom configuration

Parameters

type	The type definition for this data sample
property	Configures this object's behavior

9.86.3 Member Function Documentation

9.86.3.1 Clone()

```
DynamicData Rti.Types.Dynamic.DynamicData.Clone ( )  [inline]
```

Creates a deep copy of this object

9.86.3.2 CopyFrom()

```
void Rti.Types.Dynamic.DynamicData.CopyFrom (
            DynamicData source )
```

Copies the sample into this one, overwritting it. Both samples must have the same type.

9.86.3.3 GetValue< T >() [1/2]

```
T Rti.Types.Dynamic.DynamicData.GetValue< T > (
            string memberName )
```

Gets value of type *T* using the name of the member.

Template Parameters

T	The type of the value to retrieve. Supported types are: byte, short, ushort, int, uint, float, double, **LongDouble** (p. 737), decimal, bool, char, long, ulong,string, **DynamicData** (p. 564), byte[], short[], ushort[], int[], uint[], float[], double[], **LongDouble** (p. 737)[], bool[], char[], long[], ulong[].

9.86.3.4 GetValue< T >() [2/2]

```
T Rti.Types.Dynamic.DynamicData.GetValue< T > (
            int memberId )
```

Gets value of type *T* using the id of the member.

Template Parameters

T	The type of the value to retrieve. Supported types are: byte, short, ushort, int, uint, float, double, **LongDouble** (p. 737), decimal, bool, char, long, ulong,string, **DynamicData** (p. 564), byte[], short[], ushort[], int[], uint[], float[], double[], **LongDouble** (p. 737)[], bool[], char[], long[], ulong[].

9.86.3.5 SetValue< T >() [1/2]

```
DynamicData Rti.Types.Dynamic.DynamicData.SetValue< T > (
            string memberName,
            T value )  [inline]
```

Sets value of type *T* using the name of the member.

Template Parameters

T	The type of the value to retrieve. Supported types are: byte, short, ushort, int, uint, float, double, **LongDouble** (p. 737), decimal, bool, char, long, ulong,string, **DynamicData** (p. 564), byte[], short[], ushort[], int[], uint[], float[], double[], **LongDouble** (p. 737)[], bool[], char[], long[], ulong[].

The type of the value, `T`, must coincide with the declared type of the member. `T` is `string` for both regular IDL string and IDL wstring. If the member is an aggregation or a collection, `T` is **DynamicData** (p. 564). **SetAnyValue(string, object)** (p. 569) can be used to perform conversion from `T` to the declared type of the member.

9.86.3.6 SetValue< T >() [2/2]

```
DynamicData Rti.Types.Dynamic.DynamicData.SetValue< T > (
            int memberId,
            T value )  [inline]
```

Sets value of type *T* using the id of the member.

Template Parameters

T	The type of the value to retrieve. Supported types are: byte, short, ushort, int, uint, float, double, **LongDouble** (p. 737), decimal, bool, char, long, ulong, string, **DynamicData** (p. 564), byte[], short[], ushort[], int[], uint[], float[], double[], **LongDouble** (p. 737)[], bool[], char[], long[], ulong[].

9.86.3.7 SetAnyValue() [1/2]

```
DynamicData Rti.Types.Dynamic.DynamicData.SetAnyValue (
            string memberName,
            object value )  [inline]
```

Sets a member value from any object

Parameters

memberName	The name of the member to set
value	The value to set. This method will try to convert it to the type of the member

This method allows setting a member value without knowing the type of the value at compilation time. If the runtime type of `value` doesn't coincide with the type of the member type, this method uses System.Convert to attempt to convert it. If the conversion is not possible, any of the exceptions thrown by System.Convert may be thrown by this method as well.

This method provides great flexibility, but is less efficient than the concrete setters.

The following example shows how to set an integer from a string:

```
sample.SetAnyValue("my_int", "45");
```

9.86.3.8 SetAnyValue() [2/2]

```
DynamicData Rti.Types.Dynamic.DynamicData.SetAnyValue (
            int memberId,
            object value )  [inline]
```

Sets a member value from an object

Parameters

memberId	The id of the member to set
value	The value to set. This method will try to convert it to the type of the member

9.86.3.9 GetAnyValue() [1/2]

```
object Rti.Types.Dynamic.DynamicData.GetAnyValue (
            string memberName )  [inline]
```

Gets a member value without specifying its expected type at compilation time

Parameters

memberName	The name of the member to set

Returns

The value of that member as an object

This function allows getting the value of member without knowing its type at compilation time. If the type is known, use the specific getter, such as GetValue<int> for ints.

9.86.3.10 GetAnyValue() [2/2]

```
object Rti.Types.Dynamic.DynamicData.GetAnyValue (
            int memberId )  [inline]
```

Gets a member value without specifying its expected type at compilation time

Parameters

memberId	The id of the member to set

Returns

The value of that member as an object

9.86.3.11 GetDiscriminatorValue()

```
int Rti.Types.Dynamic.DynamicData.GetDiscriminatorValue ( )  [inline]
```

Deprecated. Use **GetDiscriminator()** (p. 574) instead. Obtains the value of the union discriminator (only for unions)

Returns

The union discriminator. That is, the value that identifies which of the union members is valid

9.86.3.12 LoanValue() [1/2]

```
LoanedDynamicData Rti.Types.Dynamic.DynamicData.LoanValue (
            string memberName )
```

Returns a loaned object to provide access to a complex field of this **DynamicData** (p. 564) object.

The full documentation is available in the C API: `DDS_DynamicData_bind_complex_member`

9.86.3.13 LoanValue() [2/2]

```
LoanedDynamicData Rti.Types.Dynamic.DynamicData.LoanValue (
            int memberId )
```

Returns a loaned object to provide access to a complex field of this **DynamicData** (p. 564) object.

The full documentation is available in the C API: `DDS_DynamicData_bind_complex_member`

9.86.3.14 ClearAllMembers()

```
void Rti.Types.Dynamic.DynamicData.ClearAllMembers ( )
```

Clear the contents of all data members of this object.

The full documentation is available in the C API: `DDS_DynamicData_clear_all_members`

9.86.3.15 ClearMember() [1/2]

```
void Rti.Types.Dynamic.DynamicData.ClearMember (
            string memberName )
```

Clear the contents of a single data member of this object.

The full documentation is available in the C API: `DDS_DynamicData_clear_member`

9.86.3.16 ClearMember() [2/2]

```
void Rti.Types.Dynamic.DynamicData.ClearMember (
            int memberId )
```

Clear the contents of a single data member of this object.

The full documentation is available in the C API: `DDS_DynamicData_clear_member`

9.86.3.17 ClearOptionalMember() [1/2]

```
void Rti.Types.Dynamic.DynamicData.ClearOptionalMember (
            string memberName )
```

Clear the contents of a single optional data member of this object.

The full documentation is available in the C API: DDS_DynamicData_clear_optional_member

9.86.3.18 ClearOptionalMember() [2/2]

```
void Rti.Types.Dynamic.DynamicData.ClearOptionalMember (
            int memberId )
```

Clear the contents of a single optional data member of this object.

The full documentation is available in the C API: DDS_DynamicData_clear_optional_member

9.86.3.19 MemberExists() [1/2]

```
bool Rti.Types.Dynamic.DynamicData.MemberExists (
            string memberName )
```

Indicates whether a member exists in this sample

The full documentation is available in the C API: DDS_DynamicData_member_exists

9.86.3.20 MemberExists() [2/2]

```
bool Rti.Types.Dynamic.DynamicData.MemberExists (
            int memberId )
```

Indicates whether a member exists in this sample

The full documentation is available in the C API: DDS_DynamicData_member_exists

9.86.3.21 MemberExistsInType() [1/2]

```
bool Rti.Types.Dynamic.DynamicData.MemberExistsInType (
            string memberName )
```

Indicates whether a member is defined in this data sample's type.

The full documentation is available in the C API: DDS_DynamicData_member_exists_in_type

9.86.3.22 MemberExistsInType() [2/2]

```
bool Rti.Types.Dynamic.DynamicData.MemberExistsInType (
            int memberId )
```

Indicates whether a member is defined in this data sample's type.

The full documentation is available in the C API: `DDS_DynamicData_member_exists_in_type`

9.86.3.23 IsMemberKey() [1/2]

```
bool Rti.Types.Dynamic.DynamicData.IsMemberKey (
            string memberName )
```

Indicates whether a given member forms part of the key of this sample's data type.

The full documentation is available in the C API: `DDS_DynamicData_is_member_key`

9.86.3.24 IsMemberKey() [2/2]

```
bool Rti.Types.Dynamic.DynamicData.IsMemberKey (
            int memberId )
```

Indicates whether a given member forms part of the key of this sample's data type.

The full documentation is available in the C API: `DDS_DynamicData_is_member_key`

9.86.3.25 GetMemberType() [1/2]

```
DynamicType Rti.Types.Dynamic.DynamicData.GetMemberType (
            string memberName )
```

Returns the type of a member

Parameters

memberName	The member name

Returns

The type of the member

9.86.3.26 GetMemberType() [2/2]

```
DynamicType Rti.Types.Dynamic.DynamicData.GetMemberType (
            int memberId )
```

Returns the type of a member

Parameters

memberId	The member ID

Returns

The type of the member

9.86.3.27 GetMemberInfo() [1/2]

```
MemberInfo Rti.Types.Dynamic.DynamicData.GetMemberInfo (
           string memberName )
```

Gets information about a member of this **DynamicData** (p. 564) sample.

The full documentation is available in the C API: DDS_DynamicData_get_member_info

9.86.3.28 GetMemberInfo() [2/2]

```
MemberInfo Rti.Types.Dynamic.DynamicData.GetMemberInfo (
           int memberId )
```

Gets information about a member of this **DynamicData** (p. 564) sample.

The full documentation is available in the C API: DDS_DynamicData_get_member_info

9.86.3.29 GetMemberInfoByIndex()

```
MemberInfo Rti.Types.Dynamic.DynamicData.GetMemberInfoByIndex (
           uint index )
```

Gets information about a member (identified by its position) of this **DynamicData** (p. 564) sample.

The full documentation is available in the C API: DDS_DynamicData_get_member_info

9.86.3.30 GetDiscriminator()

```
int Rti.Types.Dynamic.DynamicData.GetDiscriminator ( )
```

Obtains the value of the union discriminator (only for unions)

The full documentation is available in the C API: `DDS_DynamicData_get_discriminator`

9.86.3.31 SetDiscriminator()

```
void Rti.Types.Dynamic.DynamicData.SetDiscriminator (
            int discriminator )
```

Sets the value of the union discriminator (only for unions)

The full documentation is available in the C API: `DDS_DynamicData_set_discriminator`

9.86.3.32 Dispose()

```
void Rti.Types.Dynamic.DynamicData.Dispose ( )  [inline]
```

Releases the native resources (a finalizer is provided as well)

9.86.3.33 ToCdrBuffer() [1/2]

```
byte[] Rti.Types.Dynamic.DynamicData.ToCdrBuffer ( )
```

Serializes a **DynamicData** (p. 564) as a CDR buffer of octets into a new array.

Returns

A new array with the serialized data

The full documentation is available in the C API: `DDS_DynamicData_to_cdr_buffer`

9.86.3.34 ToCdrBuffer() [2/2]

```
int Rti.Types.Dynamic.DynamicData.ToCdrBuffer (
            byte[] buffer )
```

Serializes a **DynamicData** (p. 564) as a CDR buffer of octets into an existing array

Parameters

buffer	An existing buffer where to write the serialized data. It needs to have enough space to include the data or the operation will fail. You can use **StructType.GetCdrSerializedSampleMaxSize** (p. 1088) to get the max possible size

Returns

The number of bytes that were written into the buffer

The full documentation is available in the C API: `DDS_DynamicData_to_cdr_buffer`

9.86.3.35 FromCdrBuffer()

```
void Rti.Types.Dynamic.DynamicData.FromCdrBuffer (
            byte[] buffer )
```

Populates this **DynamicData** (p. 564) object from the serialized CDR data in a buffer

Parameters

buffer	Contains the serialized data

The full documentation is available in the C API: `DDS_DynamicData_from_cdr_buffer`

9.86.3.36 GetHashCode()

```
override int Rti.Types.Dynamic.DynamicData.GetHashCode ( )
```

Returns a simple hash code.

Warning

This method currently returns 0 always. If you need an efficient hash, implement one for each specific data type

9.86.3.37 ToString() [1/2]

```
string Rti.Types.Dynamic.DynamicData.ToString (
             PrintFormatProperty format )
```

Get a string representation of this **DynamicData** (p. 564) object.

Parameters

format	Allows changing the print format

9.86.3.38 ToString() [2/2]

```
override string Rti.Types.Dynamic.DynamicData.ToString ( )
```

Get a string representation of this **DynamicData** (p. 564) object with the default format

9.86.3.39 FromString()

```
void Rti.Types.Dynamic.DynamicData.FromString (
            string str,
             PrintFormatKind formatKind = PrintFormatKind.Json )
```

Populates this **DynamicData** (p. 564) object from a JSON string representation

9.86.3.40 Equals() [1/2]

```
override bool Rti.Types.Dynamic.DynamicData.Equals (
            object other )
```

Indicate whether two data samples are equal

9.86.3.41 Equals() [2/2]

```
bool Rti.Types.Dynamic.DynamicData.Equals (
             DynamicData other )  [inline]
```

Indicate whether two data samples are equal

9.86.4 Property Documentation

9.86.4.1 Disposed

```
bool Rti.Types.Dynamic.DynamicData.Disposed [get]
```

Indicates whether this object has been disposed

9.86.4.2 Type

```
DynamicType Rti.Types.Dynamic.DynamicData.Type [get]
```

Get the data type, of which this **DynamicData** (p. 564) represents an instance.

The full documentation is available in the C API: `DDS_DynamicData_get_type`

9.86.4.3 TypeKind

```
TypeKind Rti.Types.Dynamic.DynamicData.TypeKind [get]
```

Get the kind of this object's data type.

The full documentation is available in the C API: `DDS_DynamicData_get_type_kind`

9.86.4.4 MemberCount

```
uint Rti.Types.Dynamic.DynamicData.MemberCount [get]
```

The number of data members in this **DynamicData** (p. 564) sample.

The full documentation is available in the C API: `DDS_DynamicDataInfo_member_count`

9.86.4.5 Info

```
DynamicDataInfo Rti.Types.Dynamic.DynamicData.Info [get]
```

Gets information about this **DynamicData** (p. 564) sample.

The full documentation is available in the C API: `DDS_DynamicData_get_info`

9.87 Rti.Types.Dynamic.DynamicDataInfo Struct Reference

A descriptor for a **DynamicData** (p. 564) object.

Inherits IEquatable< DynamicDataInfo >.

Public Member Functions

- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Gets the hashcode.
- bool **Equals** (**DynamicDataInfo** other)

  Compares for equality.

Properties

- int **MemberCount** `[get]`

  *The number of data members in this **DynamicData*** (p. *564) sample.*
- int **StoredSize** `[get]`

  *The number of bytes currently used to store the data of this **DynamicData*** (p. *564) sample.*

9.87.1 Detailed Description

A descriptor for a **DynamicData** (p. 564) object.

9.87.2 Member Function Documentation

9.87.2.1 Equals() [1/2]

```
override bool Rti.Types.Dynamic.DynamicDataInfo.Equals (
            object other )
```

Compares for equality.

9.87.2.2 GetHashCode()

```
override int Rti.Types.Dynamic.DynamicDataInfo.GetHashCode ( )  [inline]
```

Gets the hashcode.

9.87.2.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.DynamicDataInfo.Equals (
            DynamicDataInfo other )  [inline]
```

Compares for equality.

9.87.3 Property Documentation

9.87.3.1 MemberCount

```
int Rti.Types.Dynamic.DynamicDataInfo.MemberCount  [get]
```

The number of data members in this **DynamicData** (p. 564) sample.

The full documentation is available in the C API: `DDS_DynamicDataInfo_member_count`

9.87.3.2 StoredSize

```
int Rti.Types.Dynamic.DynamicDataInfo.StoredSize  [get]
```

The number of bytes currently used to store the data of this **DynamicData** (p. 564) sample.

The full documentation is available in the C API: `DDS_DynamicDataInfo_stored_size`

9.88 Rti.Types.Dynamic.DynamicDataProperty Class Reference

A collection of attributes used to optionally configure a **DynamicData** (p. 564) object in its constructor.

Inherits IEquatable< DynamicDataProperty >.

Public Member Functions

- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**DynamicDataProperty** other)
  Compares for equality

Properties

- int **BufferInitialSize** `[get, set]`

  *The initial amount of memory used by the underlying **DynamicData** (p. 564) buffer, in bytes.*

9.88.1 Detailed Description

A collection of attributes used to optionally configure a **DynamicData** (p. 564) object in its constructor.

9.88.2 Member Function Documentation

9.88.2.1 GetHashCode()

```
override int Rti.Types.Dynamic.DynamicDataProperty.GetHashCode ( )  [inline]
```

Gets the hash code

9.88.2.2 Equals() [1/2]

```
override bool Rti.Types.Dynamic.DynamicDataProperty.Equals (
            object other )
```

Compares for equality

9.88.2.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.DynamicDataProperty.Equals (
              DynamicDataProperty other )  [inline]
```

Compares for equality

9.88.3 Property Documentation

9.88.3.1 BufferInitialSize

```
int Rti.Types.Dynamic.DynamicDataProperty.BufferInitialSize [get], [set]
```

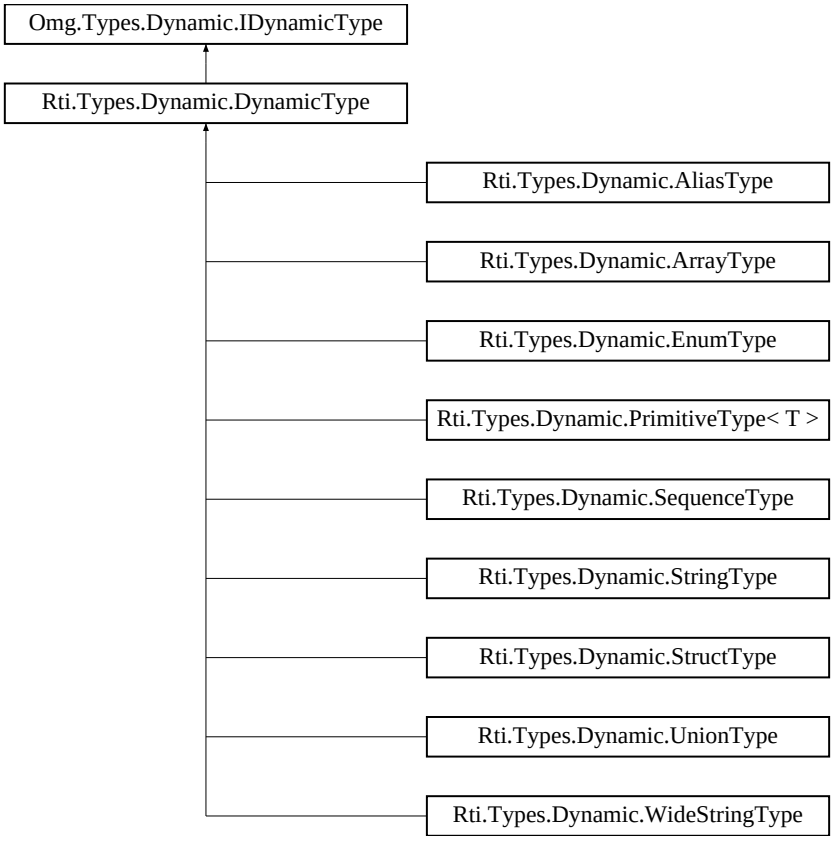
The initial amount of memory used by the underlying **DynamicData** (p. 564) buffer, in bytes.

The full documentation is available in the C API: `DDS_DynamicDataProperty_t_buffer_initial_size`

9.89 Rti.Types.Dynamic.DynamicType Class Reference

The definition of a data type, which can be used to inspect DDS types, and to dynamically create new types and **DynamicData** (p. 564) samples.

Inheritance diagram for Rti.Types.Dynamic.DynamicType:



Public Member Functions

- override bool **Equals** (object other)

  Checks if both types definitions are identical.
- override int **GetHashCode** ()

A simple hash code function.

- override string **ToString** ()

  Prints the IDL definition of this type

- bool **Equals** (**DynamicType** other)

  Checks if both types definitions are identical.

- bool **IsAssignableFrom** (**DynamicType** from)

  Checks if this type is assignable from another type.

- void **Dispose** ()

  *Deletes the native resources used by this object. Calling **Dispose()** (p. 584) for a **DynamicType** (p. 582) is optional.*

- void **SetAnnotations** (**Annotations** annotations)

  For internal use only.

- void **SetMemberAnnotations** (uint memberIndex, **Annotations** annotations)

  For internal use only.

Properties

- string **Name** `[get]`

  The type name.

- **TypeKind Kind** `[get]`

  The type kind.

9.89.1 Detailed Description

The definition of a data type, which can be used to inspect DDS types, and to dynamically create new types and **DynamicData** (p. 564) samples.

The **DynamicTypeFactory** (p. 586) allows creating **DynamicType** (p. 582) objects.

The full documentation is available in the C API: `DDS_TypeCode`

9.89.2 Member Function Documentation

9.89.2.1 Equals() [1/2]

```
override bool Rti.Types.Dynamic.DynamicType.Equals (
            object other )
```

Checks if both types definitions are identical.

9.89.2.2 GetHashCode()

```
override int Rti.Types.Dynamic.DynamicType.GetHashCode ( )  [inline]
```

A simple hash code function.

9.89.2.3 ToString()

```
override string Rti.Types.Dynamic.DynamicType.ToString ( )
```

Prints the IDL definition of this type

9.89.2.4 Equals() [2/2]

```
bool Rti.Types.Dynamic.DynamicType.Equals (
            DynamicType other )  [inline]
```

Checks if both types definitions are identical.

9.89.2.5 IsAssignableFrom()

```
bool Rti.Types.Dynamic.DynamicType.IsAssignableFrom (
            DynamicType from )  [inline]
```

Checks if this type is assignable from another type.

Parameters

from	The type to check assignability from.

Returns

True if this type is assignable from the given type, false otherwise.

9.89.2.6 Dispose()

```
void Rti.Types.Dynamic.DynamicType.Dispose ( )  [inline]
```

Deletes the native resources used by this object. Calling **Dispose()** (p. 584) for a **DynamicType** (p. 582) is optional.

9.89.2.7 SetAnnotations()

```
void Rti.Types.Dynamic.DynamicType.SetAnnotations (
              Annotations annotations )  [inline]
```

For internal use only.

9.89.2.8 SetMemberAnnotations()

```
void Rti.Types.Dynamic.DynamicType.SetMemberAnnotations (
             uint memberIndex,
              Annotations annotations )  [inline]
```

For internal use only.

9.89.3 Property Documentation

9.89.3.1 Name

```
string Rti.Types.Dynamic.DynamicType.Name  [get]
```

The type name.

Implements **Omg.Types.Dynamic.IDynamicType** (p. 655).

9.89.3.2 Kind

```
TypeKind Rti.Types.Dynamic.DynamicType.Kind  [get]
```

The type kind.

Implements **Omg.Types.Dynamic.IDynamicType** (p. 655).

9.90 Rti.Types.Dynamic.DynamicTypeFactory Class Reference

A factory for creating DynamicTypes.

Inherits IDisposable.

Inherited by Rti.Types.Dynamic.MonotonicDynamicTypeFactory.

Data Structures

- struct **WideCharType**

  *An empty struct used only as a type argument to **GetPrimitiveType<T>** (p. 587) to disambiguate between IDL `char` (UTF-8 character) and IDL `wchar` (UTF-16 character).*

Public Member Functions

- **PrimitiveType**< T > **GetPrimitiveType**< **T** > ()

  *Gets the **DynamicType** (p. 582) that represents a primitive type.*
- **DynamicType** **GetPrimitiveType** (**TypeKind** primitiveKind)

  *Gets the **DynamicType** (p. 582) that represents a primitive type.*
- **StructBuilder** **BuildStruct** ()

  *Returns a **StructBuilder** (p. 1077) that allows creating an **StructType** (p. 1086).*
- **StructBuilder** **BuildStruct** (**StructType** structType)

  *Returns a builder that allows creating a new **StructType** (p. 1086) from an existing **StructType** (p. 1086).*
- **UnionBuilder** **BuildUnion** ()

  *Returns a **UnionBuilder** (p. 1231) that allows creating an **UnionType** (p. 1239).*
- **UnionBuilder** **BuildUnion** (**UnionType** unionType)

  *Returns a builder that allows creating a new **UnionType** (p. 1239) from an existing **UnionType** (p. 1239).*
- **EnumBuilder** **BuildEnum** ()

  *Returns an **EnumBuilder** (p. 610) that allows creating an **EnumType** (p. 615).*
- **EnumBuilder** **BuildEnum** (**EnumType** enumType)

  *Returns a builder that allows creating a new **EnumType** (p. 615) from an existing **EnumType** (p. 615).*
- virtual **StringType** **CreateString** (uint bounds= **StringType.Unbounded**)

  *Creates a **StringType** (p. 1076) with the given bounds.*
- virtual **WideStringType** **CreateWideString** (uint bounds= **WideStringType.Unbounded**)

  *Creates a **WideStringType** (p. 1255) with the given bounds.*
- virtual **SequenceType** **CreateSequence** (**DynamicType** elementType, uint bounds=uint.MaxValue)

  *Creates a **SequenceType** (p. 1046) of a certain type and bounds.*
- **ArrayType** **CreateArray** (**DynamicType** elementType, uint singleDimension)

  *Creates a single-dimension **ArrayType** (p. 173) of a certain type and size.*
- virtual **ArrayType** **CreateArray** (**DynamicType** elementType, IEnumerable< uint > dimensions)

  *Creates an **ArrayType** (p. 173) of a certain type and specified dimensions.*
- virtual **AliasType** **CreateAlias** (string name, **DynamicType** relatedType, bool isExternal=false)

  *Creates an **AliasType** (p. 130).*
- virtual void **Dispose** ()

  *Disposes the **DynamicTypeFactory** (p. 586).*

Properties

- static **DynamicTypeFactory Instance** [get]

  A singleton for the factory.

9.90.1 Detailed Description

A factory for creating DynamicTypes.

The full documentation is available in the C API: DDS_TypeCodeFactory

9.90.2 Member Function Documentation

9.90.2.1 GetPrimitiveType< T >()

PrimitiveType< T > **Rti.Types.Dynamic.DynamicTypeFactory.GetPrimitiveType**< T > ( )

Gets the **DynamicType** (p. 582) that represents a primitive type.

Template Parameters

T	The primitive type to obtain, such as int

See also **GetPrimitiveType(TypeKind)** (p. 587)

Exceptions

ArgumentException	When T is not a valid primitive type.

9.90.2.2 GetPrimitiveType()

DynamicType Rti.Types.Dynamic.DynamicTypeFactory.GetPrimitiveType (
TypeKind *primitiveKind*) [inline]

Gets the **DynamicType** (p. 582) that represents a primitive type.

Parameters

primitiveKind	A type kind represneting a primitive type, such as TypeKind.Int32.

Exceptions

ArgumentException	When primitiveKind is not a primitive TypeKind

9.90.2.3 BuildStruct() [1/2]

```
StructBuilder Rti.Types.Dynamic.DynamicTypeFactory.BuildStruct ( )
```

Returns a **StructBuilder** (p. 1077) that allows creating an **StructType** (p. 1086).

Returns

A new empty builder to create a new **StructType** (p. 1086).

9.90.2.4 BuildStruct() [2/2]

```
StructBuilder Rti.Types.Dynamic.DynamicTypeFactory.BuildStruct (
            StructType structType )
```

Returns a builder that allows creating a new **StructType** (p. 1086) from an existing **StructType** (p. 1086).

Parameters

structType	The type to duplicate

Returns

A builder that contains the information about the input **StructType** (p. 1086). Use this builder to update its properties, add or remove members, etc.

9.90.2.5 BuildUnion() [1/2]

```
UnionBuilder Rti.Types.Dynamic.DynamicTypeFactory.BuildUnion ( )
```

Returns a **UnionBuilder** (p. 1231) that allows creating an **UnionType** (p. 1239).

Returns

A new empty builder to create a new **UnionType** (p. 1239).

9.90.2.6 BuildUnion() [2/2]

```
UnionBuilder Rti.Types.Dynamic.DynamicTypeFactory.BuildUnion (
            UnionType unionType )
```

Returns a builder that allows creating a new **UnionType** (p. 1239) from an existing **UnionType** (p. 1239).

Parameters

unionType	The type to duplicate

Returns

A builder that contains the information about the input **UnionType** (p. 1239). Use this builder to update its properties, add or remove members, etc.

9.90.2.7 BuildEnum() [1/2]

```
EnumBuilder Rti.Types.Dynamic.DynamicTypeFactory.BuildEnum ( )
```

Returns an **EnumBuilder** (p. 610) that allows creating an **EnumType** (p. 615).

Returns

A new empty builder to create a new **EnumType** (p. 615).

9.90.2.8 BuildEnum() [2/2]

```
EnumBuilder Rti.Types.Dynamic.DynamicTypeFactory.BuildEnum (
            EnumType enumType )
```

Returns a builder that allows creating a new **EnumType** (p. 615) from an existing **EnumType** (p. 615).

Parameters

enumType	The type to duplicate

Returns

A builder that contains the information about the input **EnumType** (p. 615). Use this builder to update its properties, add or remove members, etc.

9.90.2.9 CreateString()

```
virtual StringType Rti.Types.Dynamic.DynamicTypeFactory.CreateString (
            uint bounds = StringType.Unbounded ) [virtual]
```

Creates a **StringType** (p. 1076) with the given bounds.

Parameters

bounds	The bounds for a string **StringType.Bounds** (p. 1077). For unlimited bounds, use **StringType.Unbounded** (p. 1077).

9.90.2.10 CreateWideString()

```
virtual WideStringType Rti.Types.Dynamic.DynamicTypeFactory.CreateWideString (
            uint bounds = WideStringType.Unbounded ) [virtual]
```

Creates a **WideStringType** (p. 1255) with the given bounds.

Parameters

bounds	The bounds for a wide string **WideStringType.Bounds** (p. 1256). For unlimited bounds, use **WideStringType.Unbounded** (p. 1256).

9.90.2.11 CreateSequence()

```
virtual SequenceType Rti.Types.Dynamic.DynamicTypeFactory.CreateSequence (
             DynamicType elementType,
            uint bounds = uint.MaxValue ) [virtual]
```

Creates a **SequenceType** (p. 1046) of a certain type and bounds.

Parameters

elementType	The **DynamicType** (p. 582) of the elements contained in the sequence.
bounds	The bounds for a sequence **SequenceType.Bounds** (p. 1047). For unlimited bounds, use **SequenceType.Unbounded** (p. 1046).

9.90.2.12 CreateArray() [1/2]

```
ArrayType Rti.Types.Dynamic.DynamicTypeFactory.CreateArray (
            DynamicType elementType,
            uint singleDimension )
```

Creates a single-dimension **ArrayType** (p. 173) of a certain type and size.

Parameters

elementType	The **DynamicType** (p. 582) of the elements contained in the array.
singleDimension	The size of the array.

9.90.2.13 CreateArray() [2/2]

```
virtual ArrayType Rti.Types.Dynamic.DynamicTypeFactory.CreateArray (
            DynamicType elementType,
            IEnumerable< uint > dimensions ) [virtual]
```

Creates an **ArrayType** (p. 173) of a certain type and specified dimensions.

Parameters

elementType	The **DynamicType** (p. 582) of the elements contained in the array.
dimensions	Size for each of the dimensions in the array.

9.90.2.14 CreateAlias()

```
virtual AliasType Rti.Types.Dynamic.DynamicTypeFactory.CreateAlias (
            string name,
            DynamicType relatedType,
            bool isExternal = false ) [virtual]
```

Creates an **AliasType** (p. 130).

Parameters

name	The type name
relatedType	The aliased type
isExternal	Whether the aliased type is external

9.90.2.15 Dispose()

```
virtual void Rti.Types.Dynamic.DynamicTypeFactory.Dispose ( )  [inline], [virtual]
```

Disposes the **DynamicTypeFactory** (p. 586).

Note: it is not necessary to manually dispose this object.

9.90.3 Property Documentation

9.90.3.1 Instance

```
DynamicTypeFactory Rti.Types.Dynamic.DynamicTypeFactory.Instance  [static], [get]
```

Initial value:

```
=
            new DynamicTypeFactory()
```

A singleton for the factory.

9.91 Rti.Dds.Core.Policy.EndpointGroup Class Reference

Specifies a group of endpoints that can be collectively identified by a name and satisfied by a quorum.

Inherits IEquatable< EndpointGroup >.

Public Member Functions

- **EndpointGroup With** (Action< **EndpointGroupBuilder** > build)

  *Creates a new **EndpointGroup** (p. 592) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**EndpointGroup** other)

  Compares for equality

Properties

- string **RoleName** [get]

  Defines the role name of the endpoint group.
- int **QuorumCount** [get]

  Defines the minimum number of members that satisfies the endpoint group.
- static **EndpointGroup** **Default** = CreateDefault() [get]

  *Singleton containing the default value of a **EndpointGroup*** (p. *592*)

9.91.1 Detailed Description

Specifies a group of endpoints that can be collectively identified by a name and satisfied by a quorum.

The full documentation is available in the C API: DDS_EndpointGroup_t

9.91.2 Member Function Documentation

9.91.2.1 With()

```
EndpointGroup Rti.Dds.Core.Policy.EndpointGroup.With (
            Action< EndpointGroupBuilder > build ) [inline]
```

Creates a new **EndpointGroup** (p. 592) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **EndpointGroup** (p. 592).

Returns

A new **EndpointGroup** (p. 592) with the changes applied by the Action

9.91.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.EndpointGroup.GetHashCode ( ) [inline]
```

Gets the hash code

9.91.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.EndpointGroup.Equals (
            object other )
```

Compares for equality

9.91.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.EndpointGroup.Equals (
             EndpointGroup other )  [inline]
```

Compares for equality

9.91.3 Property Documentation

9.91.3.1 RoleName

```
string Rti.Dds.Core.Policy.EndpointGroup.RoleName  [get]
```

Defines the role name of the endpoint group.

The full documentation is available in the C API: DDS_EndpointGroup_t_role_name

9.91.3.2 QuorumCount

```
int Rti.Dds.Core.Policy.EndpointGroup.QuorumCount  [get]
```

Defines the minimum number of members that satisfies the endpoint group.

The full documentation is available in the C API: DDS_EndpointGroup_t_quorum_count

9.91.3.3 Default

```
EndpointGroup Rti.Dds.Core.Policy.EndpointGroup.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **EndpointGroup** (p. 592)

9.92 Rti.Dds.Core.Policy.EndpointGroupBuilder Class Reference

A modifiable type used to create an immutable **EndpointGroup** (p. 592)

Public Member Functions

- **EndpointGroupBuilder** (**EndpointGroup** data)
  Creates a builder with the values of an existing immutable instance
- **EndpointGroup Build** ()
  *Creates a new **EndpointGroup** (p. 592) immutable object from this one.*

Properties

- string **RoleName** `[get, set]`
  Defines the role name of the endpoint group.
- int **QuorumCount** `[get, set]`
  Defines the minimum number of members that satisfies the endpoint group.

9.92.1 Detailed Description

A modifiable type used to create an immutable **EndpointGroup** (p. 592)

9.92.2 Constructor & Destructor Documentation

9.92.2.1 EndpointGroupBuilder()

```
Rti.Dds.Core.Policy.EndpointGroupBuilder.EndpointGroupBuilder (
            EndpointGroup data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.92.3 Member Function Documentation

9.92.3.1 Build()

```
EndpointGroup Rti.Dds.Core.Policy.EndpointGroupBuilder.Build ( )
```

Creates a new **EndpointGroup** (p. 592) immutable object from this one.

9.92.4 Property Documentation

9.92.4.1 RoleName

```
string Rti.Dds.Core.Policy.EndpointGroupBuilder.RoleName  [get], [set]
```

Defines the role name of the endpoint group.

The full documentation is available in the C API: `DDS_EndpointGroup_t_role_name`

9.92.4.2 QuorumCount

```
int Rti.Dds.Core.Policy.EndpointGroupBuilder.QuorumCount  [get], [set]
```

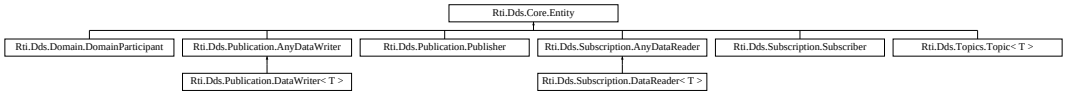
Defines the minimum number of members that satisfies the endpoint group.

The full documentation is available in the C API: `DDS_EndpointGroup_t_quorum_count`

9.93 Rti.Dds.Core.Entity Class Reference

Abstract base class for all the DDS objects that support QoS policies, status events, and a status condition.

Inheritance diagram for Rti.Dds.Core.Entity:



Public Member Functions

- void **Enable** ()

  *Enables this **Entity** (p. 596) (by default entities are automatically enabled after creation)*
- abstract void **ResetEvents** (**StatusMask** eventsToRemove=StatusMask.All)

  Stop notifying of events and remove their event handlers. The actual events are defined in each derived entity class.
- **EntityLock Lock** ()

  *Locks the **Entity** (p. 596) using its internal lock.*
- void **Dispose** ()

  *Releases the resources used by this **Entity** (p. 596) and disposes its contained entities as well (if any).*

Properties

- **InstanceHandle InstanceHandle** `[get]`

  *Gets the **InstanceHandle** (p. 661) that identifies this **Entity** (p. 596)*
- **StatusMask StatusChanges** `[get]`

  *Retrieves the list of communication statuses in this **Entity** (p. 596) that are triggered.*
- **StatusCondition StatusCondition** `[get]`

  *Gets the **StatusCondition** (p. 1071) associated with this **Entity** (p. 596).*
- bool **Enabled** `[get]`

  *Indicates whether this **Entity** (p. 596) is enabled.*
- bool **Disposed** `[get]`

  *Indicates whether this **Entity** (p. 596) has already been disposed.*

9.93.1 Detailed Description

Abstract base class for all the DDS objects that support QoS policies, status events, and a status condition.

The full documentation is available in the C API: `DDSEntity`

9.93.2 Member Function Documentation

9.93.2.1 Enable()

```
void Rti.Dds.Core.Entity.Enable ( )
```

Enables this **Entity** (p. 596) (by default entities are automatically enabled after creation)

The full documentation is available in the C API: `DDSEntity_enable`

9.93.2.2 ResetEvents()

```
abstract void Rti.Dds.Core.Entity.ResetEvents (
              StatusMask eventsToRemove = StatusMask.All )  [pure virtual]
```

Stop notifying of events and remove their event handlers. The actual events are defined in each derived entity class.

Parameters

eventsToRemove	Selects which events will stop receiving notifications. StatusMask.All (the default) removes all event handlers.

Implemented in **Rti.Dds.Domain.DomainParticipant** (p. 466), **Rti.Dds.Publication.AnyDataWriter** (p. 168), **Rti.Dds.Publication.Publisher** (p. 888), **Rti.Dds.Subscription.AnyDataReader** (p. 156), **Rti.Dds.Subscription.Subscriber** (p. 1098), and **Rti.Dds.Topics.Topic< T >** (p. 1146).

9.93.2.3 Lock()

```
EntityLock Rti.Dds.Core.Entity.Lock ( )
```

Locks the **Entity** (p. 596) using its internal lock.

The full documentation is available in the C API: `DDSEntity_lock`

9.93.2.4 Dispose()

```
void Rti.Dds.Core.Entity.Dispose ( )  [inline]
```

Releases the resources used by this **Entity** (p. 596) and disposes its contained entities as well (if any).

Exceptions

PreconditionNotMetException	When the entity cannot be disposed. For example, a topic cannot be disposed if a DataReader or a DataWriter is using it; a DataReader can't be disposed when a LoanedSamples returned by the DataReader is still in use.

9.93.3 Property Documentation

9.93.3.1 InstanceHandle

```
InstanceHandle Rti.Dds.Core.Entity.InstanceHandle  [get]
```

Gets the **InstanceHandle** (p. 661) that identifies this **Entity** (p. 596)

The full documentation is available in the C API: `DDSEntity_get_instance_handle`

9.93.3.2 StatusChanges

```
StatusMask Rti.Dds.Core.Entity.StatusChanges  [get]
```

Retrieves the list of communication statuses in this **Entity** (p. 596) that are triggered.

The full documentation is available in the C API: `DDSEntity_get_status_changes`

9.93.3.3 StatusCondition

StatusCondition Rti.Dds.Core.Entity.StatusCondition [get]

Gets the **StatusCondition** (p. 1071) associated with this **Entity** (p. 596).

The full documentation is available in the C API: DDSEntity_get_statuscondition

9.93.3.4 Enabled

bool Rti.Dds.Core.Entity.Enabled [get]

Indicates whether this **Entity** (p. 596) is enabled.

9.93.3.5 Disposed

bool Rti.Dds.Core.Entity.Disposed [get]

Indicates whether this **Entity** (p. 596) has already been disposed.

9.94 Rti.Dds.Core.Policy.EntityFactory Class Reference

Configures whether an **Entity** (p. 596) that acts as a factory automatically enables the entities it creates or not.

Public Member Functions

- **EntityFactory WithAutoEnableCreatedEntities** (bool autoEnable)

  *Returns **AutoEnable** (p. 600) if autoEnable is true, or else **ManuallyEnable** (p. 600)*
- override string **ToString** ()

  Returns a string representation

Properties

- static **EntityFactory AutoEnable** [get]

  Automatically enable
- static **EntityFactory ManuallyEnable** [get]

  Indicates that created entities will be enabled manually
- static **EntityFactory Default** [get]

  Default value for this policy
- bool **AutoEnableCreatedEntities** [get]

  Specifies whether the entity acting as a factory automatically enables the instances it creates.

9.94.1 Detailed Description

Configures whether an **Entity** (p. 596) that acts as a factory automatically enables the entities it creates or not.

9.94.2 Member Function Documentation

9.94.2.1 WithAutoEnableCreatedEntities()

```
EntityFactory Rti.Dds.Core.Policy.EntityFactory.WithAutoEnableCreatedEntities (
            bool autoEnable )
```

Returns **AutoEnable** (p. 600) if autoEnable is true, or else **ManuallyEnable** (p. 600)

9.94.2.2 ToString()

```
override string Rti.Dds.Core.Policy.EntityFactory.ToString ( )
```

Returns a string representation

9.94.3 Property Documentation

9.94.3.1 AutoEnable

```
EntityFactory Rti.Dds.Core.Policy.EntityFactory.AutoEnable  [static], [get]
```

Initial value:

```
=
           new EntityFactory(true)
```

Automatically enable

9.94.3.2 ManuallyEnable

```
EntityFactory Rti.Dds.Core.Policy.EntityFactory.ManuallyEnable [static], [get]
```

Initial value:

```
=
            new EntityFactory(false)
```

Indicates that created entities will be enabled manually

9.94.3.3 Default

```
EntityFactory Rti.Dds.Core.Policy.EntityFactory.Default [static], [get]
```

Default value for this policy

9.94.3.4 AutoEnableCreatedEntities

```
bool Rti.Dds.Core.Policy.EntityFactory.AutoEnableCreatedEntities [get]
```

Specifies whether the entity acting as a factory automatically enables the instances it creates.

The full documentation is available in the C API: DDS_EntityFactoryQosPolicy_autoenable_↩ created_entities

9.95 Rti.Dds.Core.EntityLock Class Reference

The lock used by an **Entity** (p. 596) to protect its operations. Obtained via **Entity.Lock** (p. 598).

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()
  Releases the lock.

9.95.1 Detailed Description

The lock used by an **Entity** (p. 596) to protect its operations. Obtained via **Entity.Lock** (p. 598).

9.95.2 Member Function Documentation

9.95.2.1 Dispose()

```
void Rti.Dds.Core.EntityLock.Dispose ( )  [inline]
```

Releases the lock.

9.96 Rti.Dds.Core.Policy.EntityName Class Reference

Assigns a name and a role name to a **Domain.DomainParticipant** (p. 451), **Publication.Publisher** (p. 884), **Subscription.Subscriber** (p. 1090), Publication.DataWriter<T> or Subscription.DataReader<T>. Except for **Publication.Publisher** (p. 884) and **Subscription.Subscriber** (p. 1090), these names will be visible during the discovery process and in RTI tools to help you visualize and debug your system.

Inherits IEquatable< EntityName >.

Public Member Functions

- **EntityName** ([AllowNull] string name, [AllowNull] string roleName=null)

  *Creates a new **EntityName** (p. 602) policy*
- **EntityName With** (Action< **EntityNameBuilder** > build)

  *Creates a new **EntityName** (p. 602) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**EntityName** other)

  Compares for equality
- override string **ToString** ()

  Returns a string representation

Static Public Member Functions

- static implicit **operator EntityName** (string name)

  *Implicit conversion from a string to an **EntityName** (p. 602) (with null RoleName)*

Properties

- string **Name** [get]

  Gets the value of Name
- string **RoleName** [get]

  Gets the value of RoleName
- static **EntityName Default** = CreateDefault() [get]

  *Singleton containing the default value of a **EntityName** (p. 602)*

9.96.1 Detailed Description

Assigns a name and a role name to a **Domain.DomainParticipant** (p. 451), **Publication.Publisher** (p. 884), **Subscription.Subscriber** (p. 1090), Publication.DataWriter<T> or Subscription.DataReader<T>. Except for **Publication.Publisher** (p. 884) and **Subscription.Subscriber** (p. 1090), these names will be visible during the discovery process and in RTI tools to help you visualize and debug your system.

The full documentation is available in the C API: DDS_EntityNameQosPolicy

9.96.2 Constructor & Destructor Documentation

9.96.2.1 EntityName()

```
Rti.Dds.Core.Policy.EntityName.EntityName (
            [AllowNull] string name,
            [AllowNull] string roleName = null )  [inline]
```

Creates a new **EntityName** (p. 602) policy

Parameters

name	The entity name (can be null)
roleName	The role name (can be null)

9.96.3 Member Function Documentation

9.96.3.1 With()

```
EntityName Rti.Dds.Core.Policy.EntityName.With (
           Action<  EntityNameBuilder > build )  [inline]
```

Creates a new **EntityName** (p. 602) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **EntityName** (p. 602).

Returns

A new **EntityName** (p. 602) with the changes applied by the Action

9.96.3.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.EntityName.Equals (
            object other )
```

Compares for equality

9.96.3.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.EntityName.GetHashCode ( )  [inline]
```

Gets the hash code

9.96.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.EntityName.Equals (
             EntityName other )  [inline]
```

Compares for equality

9.96.3.5 ToString()

```
override string Rti.Dds.Core.Policy.EntityName.ToString ( )
```

Returns a string representation

9.96.3.6 operator EntityName()

```
static implicit Rti.Dds.Core.Policy.EntityName.operator  EntityName (
            string name )  [static]
```

Implicit conversion from a string to an **EntityName** (p. 602) (with null RoleName)

Parameters

name	The entity name

9.96.4 Property Documentation

9.96.4.1 Name

```
string Rti.Dds.Core.Policy.EntityName.Name  [get]
```

Gets the value of Name

The full documentation is available in the C API: `DDS_EntityNameQosPolicy_name`

9.96.4.2 RoleName

```
string Rti.Dds.Core.Policy.EntityName.RoleName  [get]
```

Gets the value of RoleName

The full documentation is available in the C API: `DDS_EntityNameQosPolicy_role_name`

9.96.4.3 Default

```
EntityName Rti.Dds.Core.Policy.EntityName.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **EntityName** (p. 602)

9.97 Rti.Dds.Core.Policy.EntityNameBuilder Class Reference

A modifiable type used to create an immutable **EntityName** (p. 602)

Public Member Functions

- **EntityNameBuilder** (**EntityName** data)

  Creates a builder with the values of an existing immutable instance
- **EntityName Build** ()

  *Creates a immutable object (**EntityName** (p. 602)) from this one.*

Properties

- string **Name** [get, set]
  Gets the value of Name
- string **RoleName** [get, set]
  Gets the value of RoleName

9.97.1 Detailed Description

A modifiable type used to create an immutable **EntityName** (p. 602)

9.97.2 Constructor & Destructor Documentation

9.97.2.1 EntityNameBuilder()

```
Rti.Dds.Core.Policy.EntityNameBuilder.EntityNameBuilder (
            EntityName data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.97.3 Member Function Documentation

9.97.3.1 Build()

```
EntityName Rti.Dds.Core.Policy.EntityNameBuilder.Build ( )
```

Creates a immutable object (**EntityName** (p. 602)) from this one.

9.97.4 Property Documentation

9.97.4.1 Name

```
string Rti.Dds.Core.Policy.EntityNameBuilder.Name  [get], [set]
```

Gets the value of Name

The full documentation is available in the C API: DDS_EntityNameQosPolicy_name

9.97.4.2 RoleName

```
string Rti.Dds.Core.Policy.EntityNameBuilder.RoleName  [get], [set]
```

Gets the value of RoleName

The full documentation is available in the C API: `DDS_EntityNameQosPolicy_role_name`

9.98 Rti.Dds.Core.Policy.Property.Entry Struct Reference

The entry in the **Property** (p. 869) dictionary

Public Member Functions

- **Entry** (string value, bool propagate=false)

  Creates a new entry with the value and whether to propagate it on discovery

Static Public Member Functions

- static implicit **operator Entry** (string value)

  *Implicit conversion from string to property entry with **Propagate** (p. 609) set to false.*
- static implicit **operator Entry** ((string value, bool propagate) entry)

  Implicit conversion from (string, bool) tuple

Properties

- string **Value** `[get]`

  The value of the property
- bool **Propagate** `[get]`

  Whether to propagate this property on discovery or not

9.98.1 Detailed Description

The entry in the **Property** (p. 869) dictionary

9.98.2 Constructor & Destructor Documentation

9.98.2.1 Entry()

```
Rti.Dds.Core.Policy.Property.Entry.Entry (
            string value,
            bool propagate = false )
```

Creates a new entry with the value and whether to propagate it on discovery

9.98.3 Member Function Documentation

9.98.3.1 operator Entry() [1/2]

```
static implicit Rti.Dds.Core.Policy.Property.Entry.operator  Entry (
            string value )  [static]
```

Implicit conversion from string to property entry with **Propagate** (p. 609) set to false.

9.98.3.2 operator Entry() [2/2]

```
static implicit Rti.Dds.Core.Policy.Property.Entry.operator  Entry (
            (string value, bool propagate) entry )  [static]
```

Implicit conversion from (string, bool) tuple

9.98.4 Property Documentation

9.98.4.1 Value

```
string Rti.Dds.Core.Policy.Property.Entry.Value  [get]
```

The value of the property

9.98.4.2 Propagate

```
bool Rti.Dds.Core.Policy.Property.Entry.Propagate  [get]
```

Whether to propagate this property on discovery or not

9.99 Rti.Types.Dynamic.EnumBuilder Class Reference

Allows creating a new **EnumType** (p. 615) via **DynamicTypeFactory.BuildEnum()** (p. 589).

Public Member Functions

- **EnumBuilder WithName** (string name)

  *Returns the same **EnumBuilder** (p. 610) instance with a modified **Name** (p. 612).*
- **EnumBuilder WithExtensibility** (**ExtensibilityKind** kind)

  *Returns the same **EnumBuilder** (p. 610) instance with a modified **ExtensibilityKind** (p. 612).*
- **EnumBuilder AddMember** (**EnumMember** member)

  *Returns the same **EnumBuilder** (p. 610) instance with a new **EnumMember** (p. 613) added to **Members** (p. 612).*
- **EnumBuilder AddMembers** (params **EnumMember**[ ] members)

  *Returns the same **EnumBuilder** (p. 610) instance with a number of new **EnumMember** (p. 613) added to **Members** (p. 612).*
- **EnumBuilder AddMembers** (IEnumerable< **EnumMember** > members)

  *Returns the same **EnumBuilder** (p. 610) instance with a number of new **EnumMember** (p. 613) added to **Members** (p. 612).*
- **EnumType Create** ()

  *Creates a new **EnumType** (p. 615) object using the current properties of the **EnumBuilder** (p. 610) instance.*

Properties

- string **Name** = null `[get]`

  The enum name.
- **ExtensibilityKind ExtensibilityKind** `[get]`

  The value for the IDL extensibility kind.
- IList< **EnumMember** > **Members** = new List< **EnumMember**>() `[get]`

  The enum members.

9.99.1 Detailed Description

Allows creating a new **EnumType** (p. 615) via **DynamicTypeFactory.BuildEnum()** (p. 589).

9.99.2 Member Function Documentation

9.99.2.1 WithName()

```
EnumBuilder Rti.Types.Dynamic.EnumBuilder.WithName (
            string name ) [inline]
```

Returns the same **EnumBuilder** (p. 610) instance with a modified **Name** (p. 612).

Parameters

name	The new **Name** (p. 612) to be set.

9.99.2.2 WithExtensibility()

```
EnumBuilder Rti.Types.Dynamic.EnumBuilder.WithExtensibility (
            ExtensibilityKind kind )  [inline]
```

Returns the same **EnumBuilder** (p. 610) instance with a modified **ExtensibilityKind** (p. 612).

Parameters

kind	The new **ExtensibilityKind** (p. 612) to be set.

9.99.2.3 AddMember()

```
EnumBuilder Rti.Types.Dynamic.EnumBuilder.AddMember (
            EnumMember member )  [inline]
```

Returns the same **EnumBuilder** (p. 610) instance with a new **EnumMember** (p. 613) added to **Members** (p. 612).

Parameters

member	The **EnumMember** (p. 613) to be added.

9.99.2.4 AddMembers() [1/2]

```
EnumBuilder Rti.Types.Dynamic.EnumBuilder.AddMembers (
           params  EnumMember[] members )  [inline]
```

Returns the same **EnumBuilder** (p. 610) instance with a number of new **EnumMember** (p. 613) added to **Members** (p. 612).

Parameters

members	The array of **EnumMember** (p. 613) to be added.

9.99.2.5 AddMembers() [2/2]

```
EnumBuilder Rti.Types.Dynamic.EnumBuilder.AddMembers (
            IEnumerable< EnumMember > members ) [inline]
```

Returns the same **EnumBuilder** (p. 610) instance with a number of new **EnumMember** (p. 613) added to **Members** (p. 612).

Parameters

members	The enumerable object of **EnumMember** (p. 613) to be added.

9.99.2.6 Create()

```
EnumType Rti.Types.Dynamic.EnumBuilder.Create ( ) [inline]
```

Creates a new **EnumType** (p. 615) object using the current properties of the **EnumBuilder** (p. 610) instance.

9.99.3 Property Documentation

9.99.3.1 Name

```
string Rti.Types.Dynamic.EnumBuilder.Name = null [get]
```

The enum name.

9.99.3.2 ExtensibilityKind

```
ExtensibilityKind Rti.Types.Dynamic.EnumBuilder.ExtensibilityKind [get]
```

The value for the IDL extensibility kind.

9.99.3.3 Members

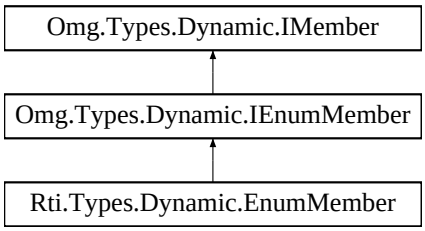
```
IList< EnumMember> Rti.Types.Dynamic.EnumBuilder.Members = new List< EnumMember>()  [get]
```

The enum members.

9.100 Rti.Types.Dynamic.EnumMember Class Reference

Represents an enumerator in an **EnumType** (p. 615).

Inheritance diagram for Rti.Types.Dynamic.EnumMember:



Public Member Functions

- **EnumMember** (string name, int ordinal)
  *Creates a new **EnumMember** (p. 613).*
- override bool **Equals** (object other)
  Compares for equality
- override int **GetHashCode** ()
  Calculates a hash code
- bool **Equals** (**EnumMember** other)
  Compares for equality
- override string **ToString** ()
  Returns the member name

Properties

- string **Name** [get]
  The member name.
- int **Ordinal** [get]
  The integer value for this member in the enumeration.

9.100.1 Detailed Description

Represents an enumerator in an **EnumType** (p. 615).

9.100.2 Constructor & Destructor Documentation

9.100.2.1 EnumMember()

```
Rti.Types.Dynamic.EnumMember.EnumMember (
            string name,
            int ordinal )  [inline]
```

Creates a new **EnumMember** (p. 613).

Parameters

name	The name
ordinal	The integer value for the member

9.100.3 Member Function Documentation

9.100.3.1 Equals() [1/2]

```
override bool Rti.Types.Dynamic.EnumMember.Equals (
            object other )
```

Compares for equality

9.100.3.2 GetHashCode()

```
override int Rti.Types.Dynamic.EnumMember.GetHashCode ( )  [inline]
```

Calculates a hash code

9.100.3.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.EnumMember.Equals (
             EnumMember other )  [inline]
```

Compares for equality

9.100.3.4 ToString()

```
override string Rti.Types.Dynamic.EnumMember.ToString ( )
```

Returns the member name

9.100.4 Property Documentation

9.100.4.1 Name

```
string Rti.Types.Dynamic.EnumMember.Name  [get]
```

The member name.

Implements **Omg.Types.Dynamic.IMember** (p. 658).

9.100.4.2 Ordinal

```
int Rti.Types.Dynamic.EnumMember.Ordinal  [get]
```

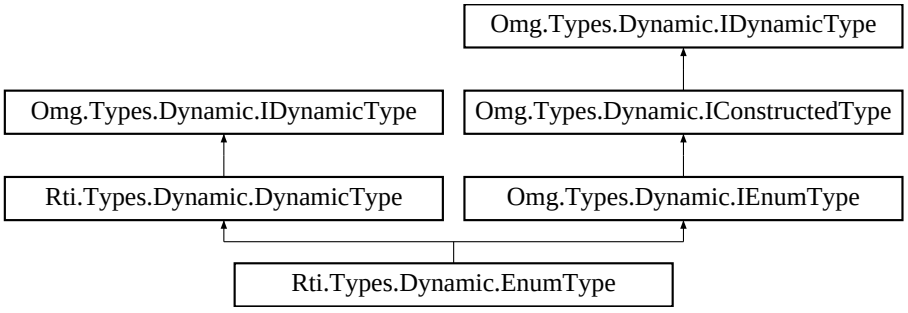
The integer value for this member in the enumeration.

Implements **Omg.Types.Dynamic.IEnumMember** (p. 656).

9.101 Rti.Types.Dynamic.EnumType Class Reference

Represents an IDL enum.

Inheritance diagram for Rti.Types.Dynamic.EnumType:



Public Member Functions

- **EnumMember GetMember** (uint index)

  Returns a member by its position in the type
- **EnumMember GetMember** (string name)

  Finds a member by its name
- uint **FindMemberByName** (string name)

  *Finds the index for a member name, which can be used as the argument for **GetMember(uint)** (p. 616).*
- uint **FindMemberById** (int id)

  Finds the member index given a member ID (`@id` IDL annotation)
- uint **GetCdrSerializedSampleMaxSize** (short representationId=DataRepresentation.Xcdr)

  Gets the maximum serialized size of samples of this type using a certain DataRepresentation.
- uint **GetCdrSerializedSampleMinSize** (short representationId=DataRepresentation.Xcdr)

  Gets the minimum serialized size of samples of this type using a certain DataRepresentation.
- uint **GetCdrSerializedSampleKeyMaxSize** (short representationId=DataRepresentation.Xcdr)

  Gets the maximum serialized size of the data type's key using a certain DataRepresentation.

Properties

- **ExtensibilityKind ExtensibilityKind** `[get]`

  The value for the IDL extensibility kind.
- IEnumerable< **EnumMember** > **Members** `[get]`

  The enumerators.
- uint **MemberCount** `[get]`

  The number of enumerators.
- **Annotations Annotations** `[get]`

  Optional values for the annotated properties of this type.

9.101.1 Detailed Description

Represents an IDL enum.

9.101.2 Member Function Documentation

9.101.2.1 GetMember() [1/2]

```
EnumMember Rti.Types.Dynamic.EnumType.GetMember (
            uint index )
```

Returns a member by its position in the type

Exceptions

System.IndexOutOfRangeException	If `index >= MemberCount.`

Returns

The member if the index is valid, or null if the index is InvalidMemberIndex

Implements **Omg.Types.Dynamic.IConstructedType** (p. 653).

9.101.2.2 GetMember() [2/2]

```
EnumMember Rti.Types.Dynamic.EnumType.GetMember (
            string name )
```

Finds a member by its name

Returns

The member if the name exists, or null if the name doesn't exist

Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

9.101.2.3 FindMemberByName()

```
uint Rti.Types.Dynamic.EnumType.FindMemberByName (
            string name )
```

Finds the index for a member name, which can be used as the argument for **GetMember(uint)** (p. 616).

Returns

The member index, if the name exists or InvalidMemberIndex if it doesn't.

9.101.2.4 FindMemberById()

```
uint Rti.Types.Dynamic.EnumType.FindMemberById (
            int id )
```

Finds the member index given a member ID (`@id` IDL annotation)

Returns

The member index, if the ID exists or InvalidMemberIndex if it doesn't.

The full documentation is available in the C API: `DDS_TypeCode_find_member_by_id`

9.101.2.5 GetCdrSerializedSampleMaxSize()

```
uint Rti.Types.Dynamic.EnumType.GetCdrSerializedSampleMaxSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the maximum serialized size of samples of this type using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_max_size`

9.101.2.6 GetCdrSerializedSampleMinSize()

```
uint Rti.Types.Dynamic.EnumType.GetCdrSerializedSampleMinSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the minimum serialized size of samples of this type using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_min_size`

9.101.2.7 GetCdrSerializedSampleKeyMaxSize()

```
uint Rti.Types.Dynamic.EnumType.GetCdrSerializedSampleKeyMaxSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the maximum serialized size of the data type's key using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_key_max_↩ size`

9.101.3 Property Documentation

9.101.3.1 ExtensibilityKind

```
ExtensibilityKind Rti.Types.Dynamic.EnumType.ExtensibilityKind [get]
```

The value for the IDL extensibility kind.

Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

9.101.3.2 Members

```
IEnumerable< EnumMember> Rti.Types.Dynamic.EnumType.Members [get]
```

The enumerators.

Implements **Omg.Types.Dynamic.IEnumType** (p. 657).

9.101.3.3 MemberCount

```
uint Rti.Types.Dynamic.EnumType.MemberCount [get]
```

The number of enumerators.

9.101.3.4 Annotations

```
Annotations Rti.Types.Dynamic.EnumType.Annotations [get]
```

Optional values for the annotated properties of this type.

9.102 Rti.Dds.Core.Policy.Event Class Reference

Configures the **Domain.DomainParticipant** (p. 451) event thread and the resources it uses.

Inherits IEquatable< Event >.

Public Member Functions

- **Event With** (Action< **EventBuilder** > build)

  *Creates a new **Event** (p. 619) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Event** other)

  Compares for equality

Properties

- **ThreadSettings Thread** `[get]`

  ***Event** (p. 619) thread settings.*
- int **InitialCount** `[get]`

  The initial number of events.
- int **MaxCount** `[get]`

  The maximum number of events.
- static **Event Default** `[get]`

  *Singleton containing the default value of a **Event** (p. 619)*

9.102.1 Detailed Description

Configures the **Domain.DomainParticipant** (p. 451) event thread and the resources it uses.

The full documentation is available in the C API: `DDS_EventQosPolicy`

9.102.2 Member Function Documentation

9.102.2.1 With()

```
Event Rti.Dds.Core.Policy.Event.With (
            Action< EventBuilder > build ) [inline]
```

Creates a new **Event** (p. 619) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Event** (p. 619).

Returns

A new **Event** (p. 619) with the changes applied by the Action

9.102.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Event.GetHashCode ( )  [inline]
```

Gets the hash code

9.102.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Event.Equals (
            object other )
```

Compares for equality

9.102.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Event.Equals (
             Event other )  [inline]
```

Compares for equality

9.102.3 Property Documentation

9.102.3.1 Thread

```
ThreadSettings Rti.Dds.Core.Policy.Event.Thread  [get]
```

Event (p. 619) thread settings.

The full documentation is available in the C API: DDS_EventQosPolicy_thread

9.102.3.2 InitialCount

```
int Rti.Dds.Core.Policy.Event.InitialCount  [get]
```

The initial number of events.

The full documentation is available in the C API: `DDS_EventQosPolicy_initial_count`

9.102.3.3 MaxCount

```
int Rti.Dds.Core.Policy.Event.MaxCount  [get]
```

The maximum number of events.

The full documentation is available in the C API: `DDS_EventQosPolicy_max_count`

9.102.3.4 Default

```
Event Rti.Dds.Core.Policy.Event.Default  [static], [get]
```

Singleton containing the default value of a **Event** (p. 619)

9.103 Rti.Dds.Core.Policy.EventBuilder Class Reference

A modifiable type used to create an immutable **Event** (p. 619)

Public Member Functions

- **EventBuilder** (**Event** data)
  Creates a builder with the values of an existing immutable instance
- **Event Build** ()
  *Creates a new **Event** (p. 619) immutable object from this one.*

Properties

- **ThreadSettings Thread** `[get, set]`
  Event *(p. 619) thread QoS.*
- int **InitialCount** `[get, set]`
  The initial number of events.
- int **MaxCount** `[get, set]`
  The maximum number of events.

9.103.1 Detailed Description

A modifiable type used to create an immutable **Event** (p. 619)

9.103.2 Constructor & Destructor Documentation

9.103.2.1 EventBuilder()

```
Rti.Dds.Core.Policy.EventBuilder.EventBuilder (
            Event data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.103.3 Member Function Documentation

9.103.3.1 Build()

```
Event Rti.Dds.Core.Policy.EventBuilder.Build ( )
```

Creates a new **Event** (p. 619) immutable object from this one.

9.103.4 Property Documentation

9.103.4.1 Thread

```
ThreadSettings Rti.Dds.Core.Policy.EventBuilder.Thread  [get], [set]
```

Event (p. 619) thread QoS.

*The full documentation is available in the C API:*DDS_EventQosPolicy_thread

9.103.4.2 InitialCount

```
int Rti.Dds.Core.Policy.EventBuilder.InitialCount  [get], [set]
```

The initial number of events.

*The full documentation is available in the C API:*DDS_EventQosPolicy_initial_count

9.103.4.3 MaxCount

```
int Rti.Dds.Core.Policy.EventBuilder.MaxCount  [get], [set]
```

The maximum number of events.

The full documentation is available in the `C API:DDS_EventQosPolicy_max_count`

9.104 Omg.Dds.Core.Status.EventCount< TInteger > Struct Template Reference

An event count has a value and a change from the last time the value was looked up

Inherits IEquatable< EventCount< TInteger > >.

Public Member Functions

- **EventCount** (TInteger value, TInteger change)
  Creates an instance with a value and a change count
- void **Deconstruct** (out TInteger value, out TInteger change)
  *Deconstructs the **EventCount** (p. 624) object.*
- override int **GetHashCode** ()
  Gets the hash code.
- override string **ToString** ()
  Returns a readable representation
- bool **Equals** (**EventCount**< TInteger > other)
  Compares for equality.

Static Public Member Functions

- static implicit **operator EventCount**< **TInteger** > ((TInteger, TInteger) t)
  Implicit conversion from a tuple with (Value, Change)

Properties

- TInteger **Value** `[get]`
  The total value for this counter.
- TInteger **Change** `[get]`
  *The change (positive or negative) of **Value** (p. 626) since this counter was last looked up.*

9.104.1 Detailed Description

An event count has a value and a change from the last time the value was looked up

Type Constraints

TInteger **:** ***unmanaged***

9.104.2 Constructor & Destructor Documentation

9.104.2.1 EventCount()

```
Omg.Dds.Core.Status.EventCount< TInteger >.  EventCount (
            TInteger value,
            TInteger change )
```

Creates an instance with a value and a change count

9.104.3 Member Function Documentation

9.104.3.1 Deconstruct()

```
void  Omg.Dds.Core.Status.EventCount< TInteger >.Deconstruct (
            out TInteger value,
            out TInteger change )
```

Deconstructs the **EventCount** (p. 624) object.

9.104.3.2 GetHashCode()

```
override int  Omg.Dds.Core.Status.EventCount< TInteger >.GetHashCode ( )
```

Gets the hash code.

9.104.3.3 ToString()

```
override string  Omg.Dds.Core.Status.EventCount< TInteger >.ToString ( )
```

Returns a readable representation

9.104.3.4 Equals()

```
bool  Omg.Dds.Core.Status.EventCount< TInteger >.Equals (
              EventCount< TInteger > other )
```

Compares for equality.

9.104.3.5 operator EventCount< TInteger >()

```
static implicit  Omg.Dds.Core.Status.EventCount< TInteger >.operator  EventCount< TInteger > (
            (TInteger, TInteger) t )  [static]
```

Implicit conversion from a tuple with (Value, Change)

9.104.4 Property Documentation

9.104.4.1 Value

```
TInteger  Omg.Dds.Core.Status.EventCount< TInteger >.Value  [get]
```

The total value for this counter.

9.104.4.2 Change

```
TInteger  Omg.Dds.Core.Status.EventCount< TInteger >.Change  [get]
```

The change (positive or negative) of **Value** (p. 626) since this counter was last looked up.

9.105 Rti.Dds.Subscription.Filter Class Reference

Defines a filter to create a Topics.ContentFilteredTopic<T>.

Inherits IEquatable< Filter >.

Public Member Functions

- **Filter** (string expression)
  Creates a filter with an expression with no parameters.
- **Filter** (string expression, IEnumerable< string > parameters)
  Creates a filter with an expression that contains parameters.
- **Filter** (string expression, IEnumerable< string > parameters, string name)
  Creates a filter with an expression containing parameters and a filter name.
- bool **Equals** (**Filter** other)
  Compares for equality
- override bool **Equals** (object obj)
  Compares for equality
- override int **GetHashCode** ()
  Gets the hash code
- override string **ToString** ()
  Converts to a string
- **Filter** **WithParameters** (IEnumerable< string > parameters)
  *Creates a new **Filter** (p. 627) with the same expression as the existing filter but with new parameters*

Static Public Member Functions

- static implicit **operator Filter** (string expression)
  Allows using a string wherever a no-parameter filter is expected

Static Public Attributes

- const string **SqlFilterName** = "DDSSQL"
  ***Filter** (p. 627) name that identifies the SQL filter*
- const string **StringMatchFilterName** = "DDSSTRINGMATCH"
  ***Filter** (p. 627) name that identifies the "string match" filter*

Properties

- string **Expression** `[get]`
  Gets the expression.
- IEnumerable< string > **Parameters** `[get]`
  Gets the parameters.
- string **Name** `[get]`
  Gets the filter name

9.105.1 Detailed Description

Defines a filter to create a Topics.ContentFilteredTopic<T>.

9.105.2 Constructor & Destructor Documentation

9.105.2.1 Filter() [1/3]

```
Rti.Dds.Subscription.Filter.Filter (
            string expression )  [inline]
```

Creates a filter with an expression with no parameters.

9.105.2.2 Filter() [2/3]

```
Rti.Dds.Subscription.Filter.Filter (
            string expression,
            IEnumerable< string > parameters )  [inline]
```

Creates a filter with an expression that contains parameters.

Parameters

expression	The filter expression
parameters	The values of the parameters used in the expression

9.105.2.3 Filter() [3/3]

```
Rti.Dds.Subscription.Filter.Filter (
            string expression,
            IEnumerable< string > parameters,
            string name )  [inline]
```

Creates a filter with an expression containing parameters and a filter name.

9.105.3 Member Function Documentation

9.105.3.1 Equals() [1/2]

```
bool Rti.Dds.Subscription.Filter.Equals (
             Filter other )
```

Compares for equality

9.105.3.2 Equals() [2/2]

```
override bool Rti.Dds.Subscription.Filter.Equals (
            object obj )
```

Compares for equality

9.105.3.3 GetHashCode()

```
override int Rti.Dds.Subscription.Filter.GetHashCode ( )
```

Gets the hash code

9.105.3.4 ToString()

```
override string Rti.Dds.Subscription.Filter.ToString ( )
```

Converts to a string

9.105.3.5 WithParameters()

```
Filter Rti.Dds.Subscription.Filter.WithParameters (
            IEnumerable< string > parameters )
```

Creates a new **Filter** (p. 627) with the same expression as the existing filter but with new parameters

Parameters

parameters	The new parameters for the new filter

Returns

A new filter with the same expression and new parameters

9.105.3.6 operator Filter()

```
static implicit Rti.Dds.Subscription.Filter.operator  Filter (
            string expression )  [static]
```

Allows using a string wherever a no-parameter filter is expected

Parameters

expression	The string to implicitly convert to a **Filter** (p. 627) with an expression and no parameters

9.105.4 Field Documentation

9.105.4.1 SqlFilterName

```
const string Rti.Dds.Subscription.Filter.SqlFilterName = "DDSSQL"  [static]
```

Filter (p. 627) name that identifies the SQL filter

9.105.4.2 StringMatchFilterName

```
const string Rti.Dds.Subscription.Filter.StringMatchFilterName = "DDSSTRINGMATCH"  [static]
```

Filter (p. 627) name that identifies the "string match" filter

9.105.5 Property Documentation

9.105.5.1 Expression

```
string Rti.Dds.Subscription.Filter.Expression  [get]
```

Gets the expression.

9.105.5.2 Parameters

```
IEnumerable<string> Rti.Dds.Subscription.Filter.Parameters  [get]
```

Gets the parameters.

9.105.5.3 Name

```
string Rti.Dds.Subscription.Filter.Name  [get]
```

Gets the filter name

9.106 Omg.Dds.Subscription.GenerationCount Struct Reference

Keeps track of changes in **InstanceState** (p. 66).

Inherits IEquatable< GenerationCount >.

Public Member Functions

- bool **Equals** (**GenerationCount** other)

  Compares for equality.
- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Calculates the hash code.
- override string **ToString** ()

  Returns a readable representation of this object

Properties

- int **Disposed** `[get, set]`

  *The number of times an instance has transitioned from **InstanceState.NotAliveDisposed** (p. 66) to **InstanceState.Alive** (p. 66)*
- int **NoWriters** `[get, set]`

  *The number of times an instance has transitioned from **InstanceState.NotAliveNoWriters** (p. 66) to **InstanceState.Alive** (p. 66)*

9.106.1 Detailed Description

Keeps track of changes in **InstanceState** (p. 66).

9.106.2 Member Function Documentation

9.106.2.1 Equals() [1/2]

```
bool Omg.Dds.Subscription.GenerationCount.Equals (
            GenerationCount other )
```

Compares for equality.

9.106.2.2 Equals() [2/2]

```
override bool Omg.Dds.Subscription.GenerationCount.Equals (
            object other )
```

Compares for equality.

9.106.2.3 GetHashCode()

```
override int Omg.Dds.Subscription.GenerationCount.GetHashCode ( )
```

Calculates the hash code.

9.106.2.4 ToString()

```
override string Omg.Dds.Subscription.GenerationCount.ToString ( )
```

Returns a readable representation of this object

9.106.3 Property Documentation

9.106.3.1 Disposed

```
int Omg.Dds.Subscription.GenerationCount.Disposed [get], [set]
```

The number of times an instance has transitioned from **InstanceState.NotAliveDisposed** (p. 66) to **InstanceState.↩ Alive** (p. 66)

The full documentation is available in the `C API:DDS_SampleInfo_disposed_generation_count`

9.106.3.2 NoWriters

```
int Omg.Dds.Subscription.GenerationCount.NoWriters [get], [set]
```

The number of times an instance has transitioned from **InstanceState.NotAliveNoWriters** (p. 66) to **InstanceState.↩ Alive** (p. 66)

The full documentation is available in the `C API:DDS_SampleInfo_no_writers_generation_count`

9.107 Rti.Dds.Core.Policy.GroupData Class Reference

Attaches a buffer of opaque data that is distributed by means of the built-in topics.

Inherits IEquatable< GroupData >.

Public Member Functions

- **GroupData** (IEnumerable< byte > value)

  *Creates a **GroupData** (p. 633) object with a list of settings*
- **GroupData** (ImmutableList< byte > value)

  *Creates a **GroupData** (p. 633) object with a list of settings*
- **GroupData With** (Action< ImmutableList< byte >.Builder > build)

  *Creates a new **GroupData** (p. 633) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**GroupData** other)

  Compares for equality

Properties

- ImmutableList< byte > **Value** `[get]`

  An opaque sequence of bytes.
- static **GroupData Default** = new **GroupData**(ImmutableList<byte>.Empty) `[get]`

  *Singleton containing the default value of a **GroupData** (p. 633)*

9.107.1 Detailed Description

Attaches a buffer of opaque data that is distributed by means of the built-in topics.

The full documentation is available in the `C API:` `DDS_GroupDataQosPolicy`

9.107.2 Constructor & Destructor Documentation

9.107.2.1 GroupData() [1/2]

```
Rti.Dds.Core.Policy.GroupData.GroupData (
            IEnumerable< byte > value )  [inline]
```

Creates a **GroupData** (p. 633) object with a list of settings

9.107.2.2 GroupData() [2/2]

```
Rti.Dds.Core.Policy.GroupData.GroupData (
            ImmutableList< byte > value )
```

Creates a **GroupData** (p. 633) object with a list of settings

9.107.3 Member Function Documentation

9.107.3.1 With()

```
GroupData Rti.Dds.Core.Policy.GroupData.With (
            Action< ImmutableList< byte >.Builder > build )  [inline]
```

Creates a new **GroupData** (p. 633) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable list with the current values of this object's **Value** (p. 635).

Returns

A new **GroupData** (p. 633) with the changes applied by the Action

9.107.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.GroupData.GetHashCode ( )
```

Gets the hash code

9.107.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.GroupData.Equals (
            object other )
```

Compares for equality

9.107.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.GroupData.Equals (
             GroupData other )  [inline]
```

Compares for equality

9.107.4 Property Documentation

9.107.4.1 Value

```
ImmutableList<byte> Rti.Dds.Core.Policy.GroupData.Value  [get]
```

An opaque sequence of bytes.

The full documentation is available in the C API: DDS_GroupDataQosPolicy_value

9.107.4.2 Default

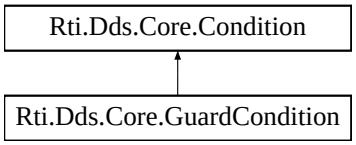
```
GroupData Rti.Dds.Core.Policy.GroupData.Default = new GroupData(ImmutableList<byte>.Empty)
[static], [get]
```

Singleton containing the default value of a **GroupData** (p. 633)

9.108 Rti.Dds.Core.GuardCondition Class Reference

A **Condition** (p. 228) whose **Condition.TriggerValue** (p. 230) is completely under the control of the application.

Inheritance diagram for Rti.Dds.Core.GuardCondition:



Public Member Functions

- **GuardCondition** ()
  *Creates a new **GuardCondition** (p. 636).*
- void **Dispose** ()
  Releases the native resources used by this object

Properties

- new bool **TriggerValue** `[get, set]`
  Gets and sets the trigger value
- bool **Disposed** `[get]`
  Indicates whether this object has been disposed.

Additional Inherited Members

9.108.1 Detailed Description

A **Condition** (p. 228) whose **Condition.TriggerValue** (p. 230) is completely under the control of the application.

Note

GuardConditions must be explicitly Disposed, by calling the Dispose method or with a `using` statement.

9.108.2 Constructor & Destructor Documentation

9.108.2.1 GuardCondition()

```
Rti.Dds.Core.GuardCondition.GuardCondition ( )
```

Creates a new **GuardCondition** (p. 636).

The full documentation is available in the `C API:` `DDS_GuardCondition_new`

9.108.3 Member Function Documentation

9.108.3.1 Dispose()

```
void Rti.Dds.Core.GuardCondition.Dispose ( )  [inline]
```

Releases the native resources used by this object

9.108.4 Property Documentation

9.108.4.1 TriggerValue

```
new bool Rti.Dds.Core.GuardCondition.TriggerValue  [get], [set]
```

Gets and sets the trigger value

9.108.4.2 Disposed

```
bool Rti.Dds.Core.GuardCondition.Disposed  [get]
```

Indicates whether this object has been disposed.

9.109 Rti.Dds.Core.Guid Struct Reference

A global unique identifier.

Inherits IEquatable< Guid >, and IComparable< Guid >.

Public Member Functions

- **Guid** (byte[ ] values)

  *Creates a new **Guid** (p. 638) from an array of 16 bytes.*
- int **CompareTo** (**Guid** other)

  Compares two objects.
- bool **Equals** (**Guid** other)

  Compares two objects for equality.
- override bool **Equals** (object obj)

  Compares two objects for equality.
- override int **GetHashCode** ()

  Gets the hash code.
- override string **ToString** ()

  Converts to string.
- **InstanceHandle** **ToInstanceHandle** ()

  *Converts to **InstanceHandle** (p. 661).*
- byte[ ] **ToArray** ()

  Converts this GUID to a byte array.

Static Public Member Functions

- static **Guid** **FromArray** (byte[ ] bytes)

  *Creates a **Guid** (p. 638) from the bytes in a 16-byte array*
- static **Guid** **FromInstanceHandle** (in **InstanceHandle** instanceHandle)

  *Creates a new **Guid** (p. 638) from an **InstanceHandle** (p. 661).*

Properties

- static **Guid** **Unknown** = default `[get]`

  *Special object representing an unknown **Guid** (p. 638).*
- static **Guid** **Auto** = default `[get]`

  *Special object that indicates certain methods that the actual **Guid** (p. 638). should be automatically determined.*

9.109.1 Detailed Description

A global unique identifier.

9.109.2 Constructor & Destructor Documentation

9.109.2.1 Guid()

```
Rti.Dds.Core.Guid.Guid (
            byte[] values )  [inline]
```

Creates a new **Guid** (p. 638) from an array of 16 bytes.

9.109.3 Member Function Documentation

9.109.3.1 CompareTo()

```
int Rti.Dds.Core.Guid.CompareTo (
             Guid other )
```

Compares two objects.

9.109.3.2 Equals() [1/2]

```
bool Rti.Dds.Core.Guid.Equals (
             Guid other )
```

Compares two objects for equality.

9.109.3.3 Equals() [2/2]

```
override bool Rti.Dds.Core.Guid.Equals (
            object obj )
```

Compares two objects for equality.

9.109.3.4 GetHashCode()

```
override int Rti.Dds.Core.Guid.GetHashCode ( )
```

Gets the hash code.

9.109.3.5 ToString()

```
override string Rti.Dds.Core.Guid.ToString ( )
```

Converts to string.

9.109.3.6 ToInstanceHandle()

```
InstanceHandle Rti.Dds.Core.Guid.ToInstanceHandle ( )  [inline]
```

Converts to **InstanceHandle** (p. 661).

9.109.3.7 ToArray()

```
byte[] Rti.Dds.Core.Guid.ToArray ( )
```

Converts this GUID to a byte array.

9.109.3.8 FromArray()

```
static  Guid Rti.Dds.Core.Guid.FromArray (
            byte[] bytes )  [static]
```

Creates a **Guid** (p. 638) from the bytes in a 16-byte array

9.109.3.9 FromInstanceHandle()

```
static  Guid Rti.Dds.Core.Guid.FromInstanceHandle (
            in  InstanceHandle instanceHandle )  [inline], [static]
```

Creates a new **Guid** (p. 638) from an **InstanceHandle** (p. 661).

9.109.4 Property Documentation

9.109.4.1 Unknown

```
Guid Rti.Dds.Core.Guid.Unknown = default  [static], [get]
```

Special object representing an unknown **Guid** (p. 638).

The full documentation is available in the `C API:` `DDSGUID_tGUID_UNKNOWN`

9.109.4.2 Auto

```
Guid Rti.Dds.Core.Guid.Auto = default  [static], [get]
```

Special object that indicates certain methods that the actual **Guid** (p. 638). should be automatically determined.

The full documentation is available in the `C API:` `DDSGUID_tGUID_AUTO`

9.110 Rti.Utility.HeapMonitor Class Reference

Utility (p. 123) that tracks native heap memory usage by RTI Connext DDS

Inherits IDisposable.

Data Structures

- class **Snapshot**
  Contains information about memory usage

Public Member Functions

- void **Dispose** ()
  Disables heap memory tracking.
- **Snapshot** **TakeSnapshot** ()
  Takes a snapshot
- **Snapshot** **TakeSnapshot** (string filename, bool printDetails)
  Takes a snapshot and saves the details into a file
- void **Pause** ()
  Pauses heap memory tracking
- void **Resume** ()
  Resumes tracking after ***Pause*** *(p. 643).*

Static Public Member Functions

- static **HeapMonitor Enable** ()

  Enables heap memory tracking. Heap monitoring must be explicitly enabled before any other RTI Connext DDS operation.

Properties

- static **HeapMonitor Instance** [get]

  Accesses the singleton that allows taking snapshots. ***Enable*** *(p. 642) must be called before.*

9.110.1 Detailed Description

Utility (p. 123) that tracks native heap memory usage by RTI Connext DDS

9.110.2 Member Function Documentation

9.110.2.1 Enable()

```
static HeapMonitor Rti.Utility.HeapMonitor.Enable ( ) [inline], [static]
```

Enables heap memory tracking. Heap monitoring must be explicitly enabled before any other RTI Connext DDS operation.

The full documentation is available in the C API: NDDSHeapMonitoring_enable

9.110.2.2 Dispose()

```
void Rti.Utility.HeapMonitor.Dispose ( ) [inline]
```

Disables heap memory tracking.

The full documentation is available in the C API: NDDSHeapMonitoring_disable

9.110.2.3 TakeSnapshot() [1/2]

```
Snapshot Rti.Utility.HeapMonitor.TakeSnapshot ( )
```

Takes a snapshot

Returns

An object with information about heap usage

The full documentation is available in the C API: NDDSHeapMonitoring_take_heap_snapshot

9.110.2.4 TakeSnapshot() [2/2]

```
Snapshot Rti.Utility.HeapMonitor.TakeSnapshot (
            string filename,
            bool printDetails )  [inline]
```

Takes a snapshot and saves the details into a file

Returns

An object with information about heap usage

The full documentation is available in the C API: NDDSHeapMonitoring_take_heap_snapshot

9.110.2.5 Pause()

```
void Rti.Utility.HeapMonitor.Pause ( )
```

Pauses heap memory tracking

The full documentation is available in the C API: NDDSHeapMonitoring_pause

9.110.2.6 Resume()

```
void Rti.Utility.HeapMonitor.Resume ( )
```

Resumes tracking after **Pause** (p. 643).

The full documentation is available in the C API: NDDSHeapMonitoring_resume

9.110.3 Property Documentation

9.110.3.1 Instance

```
HeapMonitor Rti.Utility.HeapMonitor.Instance  [static], [get]
```

Accesses the singleton that allows taking snapshots. **Enable** (p. 642) must be called before.

9.111 Rti.Dds.Core.Policy.History Class Reference

Specifies the middleware behavior in the case where the value of a sample changes (one or more times) before it can be successfully communicated to one or more existing subscribers.

Inherits IEquatable< History >.

Public Member Functions

- **History** (**HistoryKind** kind, int depth=1)

  Creates a new instance
- **History With** (Action< **HistoryBuilder** > build)

  *Creates a new **History** (p. 643) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**History** other)

  Compares for equality

Properties

- **HistoryKind Kind** `[get]`

  Specifies the kind of history to be kept.
- int **Depth** `[get]`

  *Specifies the number of samples to be kept, when **Kind** (p. 646) is **HistoryKind.KeepLast** (p. 95)*
- static **History Default** `[get]`

  *Singleton containing the default value of a **History** (p. 643)*

9.111.1 Detailed Description

Specifies the middleware behavior in the case where the value of a sample changes (one or more times) before it can be successfully communicated to one or more existing subscribers.

9.111.2 Constructor & Destructor Documentation

9.111.2.1 History()

```
Rti.Dds.Core.Policy.History.History (
              HistoryKind kind,
             int depth = 1 )  [inline]
```

Creates a new instance

Parameters

kind	The value for **Kind** (p. 646)
depth	The value for **Depth** (p. 646)

9.111.3 Member Function Documentation

9.111.3.1 With()

```
History Rti.Dds.Core.Policy.History.With (
            Action< HistoryBuilder > build )  [inline]
```

Creates a new **History** (p. 643) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **History** (p. 643).

Returns

A new **History** (p. 643) with the changes applied by the Action

9.111.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.History.GetHashCode ( )  [inline]
```

Gets the hash code

9.111.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.History.Equals (
            object other )
```

Compares for equality

9.111.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.History.Equals (
             History other )  [inline]
```

Compares for equality

9.111.4 Property Documentation

9.111.4.1 Kind

HistoryKind Rti.Dds.Core.Policy.History.Kind [get]

Specifies the kind of history to be kept.

The full documentation is available in the C API: DDS_HistoryQosPolicy_kind

9.111.4.2 Depth

int Rti.Dds.Core.Policy.History.Depth [get]

Specifies the number of samples to be kept, when **Kind** (p. 646) is **HistoryKind.KeepLast** (p. 95)

The full documentation is available in the C API: DDS_HistoryQosPolicy_depth

9.111.4.3 Default

History Rti.Dds.Core.Policy.History.Default [static], [get]

Singleton containing the default value of a **History** (p. 643)

9.112 Rti.Dds.Core.Policy.HistoryBuilder Class Reference

A modifiable type used to create an immutable **History** (p. 643)

Public Member Functions

- **HistoryBuilder** (**History** data)

  Creates a builder with the values of an existing immutable instance
- **History Build** ()

  *Creates a new **History** (p. 643) immutable object from this one.*

Properties

- **HistoryKind Kind** [get, set]

  Specifies the kind of history to be kept.
- int **Depth** [get, set]

  *Specifies the number of samples to be kept, when **Kind** (p. 647) is **HistoryKind.KeepLast** (p. 95)*

9.112.1 Detailed Description

A modifiable type used to create an immutable **History** (p. 643)

9.112.2 Constructor & Destructor Documentation

9.112.2.1 HistoryBuilder()

```
Rti.Dds.Core.Policy.HistoryBuilder.HistoryBuilder (
              History data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.112.3 Member Function Documentation

9.112.3.1 Build()

```
History Rti.Dds.Core.Policy.HistoryBuilder.Build ( )
```

Creates a new **History** (p. 643) immutable object from this one.

9.112.4 Property Documentation

9.112.4.1 Kind

```
HistoryKind Rti.Dds.Core.Policy.HistoryBuilder.Kind  [get], [set]
```

Specifies the kind of history to be kept.

The full documentation is available in the C API: `DDS_HistoryQosPolicy_kind`

9.112.4.2 Depth

```
int Rti.Dds.Core.Policy.HistoryBuilder.Depth  [get], [set]
```

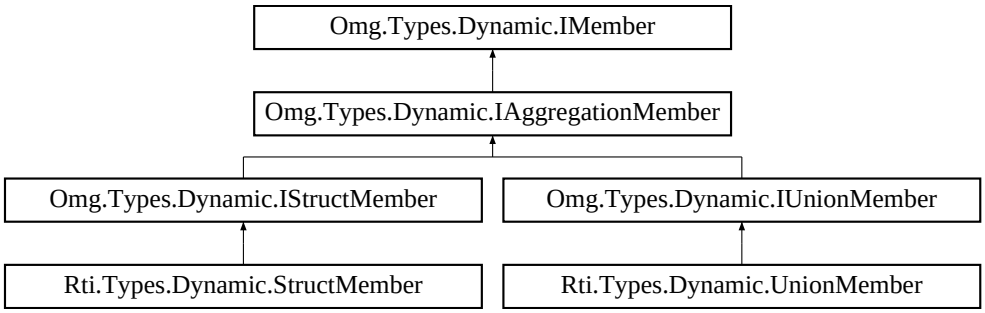
Specifies the number of samples to be kept, when **Kind** (p. 647) is **HistoryKind.KeepLast** (p. 95)

The full documentation is available in the C API: `DDS_HistoryQosPolicy_depth`

9.113 Omg.Types.Dynamic.IAggregationMember Interface Reference

Common interface for the members of an aggregation type.

Inheritance diagram for Omg.Types.Dynamic.IAggregationMember:



Properties

- **IDynamicType Type** `[get]`

  *The **IDynamicType** (p. 655) of the **IAggregationMember** (p. 648).*
- int **Id** `[get]`

  *The id of the **IAggregationMember** (p. 648).*
- bool **IsExternal** `[get]`

  *Indicates whether or not the **IAggregationMember** (p. 648) is annotated as external.*

9.113.1 Detailed Description

Common interface for the members of an aggregation type.

IStructMember (p. 679) and **IUnionMember** (p. 685) are considered to be **IAggregationMember** (p. 648).

9.113.2 Property Documentation

9.113.2.1 Type

```
IDynamicType Omg.Types.Dynamic.IAggregationMember.Type  [get]
```

The **IDynamicType** (p. 655) of the **IAggregationMember** (p. 648).

Implemented in **Rti.Types.Dynamic.StructMember** (p. 1084), and **Rti.Types.Dynamic.UnionMember** (p. 1237).

9.113.2.2 Id

```
int Omg.Types.Dynamic.IAggregationMember.Id  [get]
```

The id of the **IAggregationMember** (p. 648).

Implemented in **Rti.Types.Dynamic.StructMember** (p. 1085), and **Rti.Types.Dynamic.UnionMember** (p. 1238).

9.113.2.3 IsExternal

```
bool Omg.Types.Dynamic.IAggregationMember.IsExternal  [get]
```

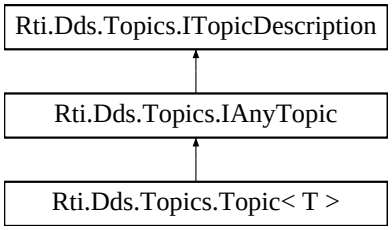
Indicates whether or not the **IAggregationMember** (p. 648) is annotated as external.

Implemented in **Rti.Types.Dynamic.StructMember** (p. 1085), and **Rti.Types.Dynamic.UnionMember** (p. 1238).

9.114 Rti.Dds.Topics.IAnyTopic Interface Reference

The base of a typed Topic<T>. Provides type-independent methods and properties.

Inheritance diagram for Rti.Dds.Topics.IAnyTopic:



Properties

- **InconsistentTopicStatus InconsistentTopicStatus** [get]

  Retrieve the StatusMask.InconsistentTopic status.

Events

- **InconsistentTopicEventHandler InconsistentTopic**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.InconsistentTopic** (p. 108) status changes.*

9.114.1 Detailed Description

The base of a typed Topic<T>. Provides type-independent methods and properties.

9.114.2 Property Documentation

9.114.2.1 InconsistentTopicStatus

InconsistentTopicStatus Rti.Dds.Topics.IAnyTopic.InconsistentTopicStatus [get]

Retrieve the StatusMask.InconsistentTopic status.

The full documentation is available in the C API: DDS_Topic_get_inconsistent_topic_status

Implemented in **Rti.Dds.Topics.Topic< T >** (p. 1147).

9.114.3 Event Documentation

9.114.3.1 InconsistentTopic

InconsistentTopicEventHandler Rti.Dds.Topics.IAnyTopic.InconsistentTopic

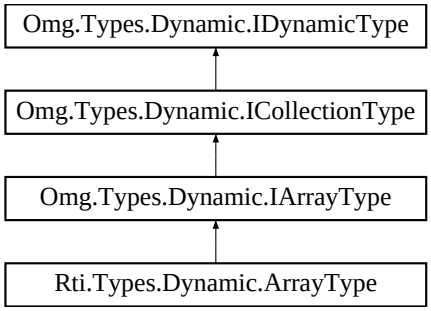
Event triggered when the **Rti.Dds.Core.Status.StatusMask.InconsistentTopic** (p. 108) status changes.

Implemented in **Rti.Dds.Topics.Topic< T >** (p. 1147).

9.115 Omg.Types.Dynamic.IArrayType Interface Reference

Defines an **IArrayType** (p. 650).

Inheritance diagram for Omg.Types.Dynamic.IArrayType:



Public Member Functions

- uint **GetDimension** (uint index)

  Returns the i-th dimension.

Properties

- uint **DimensionCount** `[get]`

  The number of dimensions.
- uint **TotalElementCount** `[get]`

  The sum of all the dimensions.

9.115.1 Detailed Description

Defines an **IArrayType** (p. 650).

9.115.2 Member Function Documentation

9.115.2.1 GetDimension()

```
uint Omg.Types.Dynamic.IArrayType.GetDimension (
            uint index )
```

Returns the i-th dimension.

Implemented in **Rti.Types.Dynamic.ArrayType** (p. 174).

9.115.3 Property Documentation

9.115.3.1 DimensionCount

```
uint Omg.Types.Dynamic.IArrayType.DimensionCount  [get]
```

The number of dimensions.

Implemented in **Rti.Types.Dynamic.ArrayType** (p. 174).

9.115.3.2 TotalElementCount

```
uint Omg.Types.Dynamic.IArrayType.TotalElementCount  [get]
```

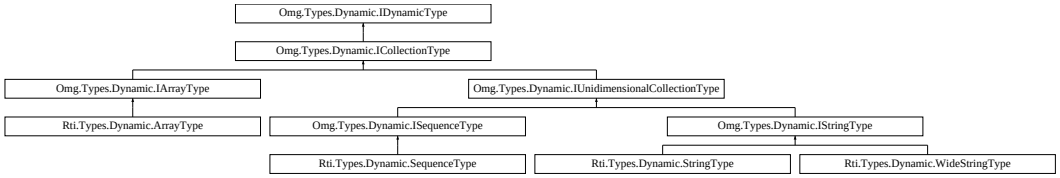
The sum of all the dimensions.

Implemented in **Rti.Types.Dynamic.ArrayType** (p. 174).

9.116 Omg.Types.Dynamic.ICollectionType Interface Reference

Defines an **IDynamicType** (p. 655) collection.

Inheritance diagram for Omg.Types.Dynamic.ICollectionType:



Properties

- **IDynamicType ContentType** `[get]`

  *The **IDynamicType** (p. 655) of the elements contained the **ICollectionType** (p. 652).*

9.116.1 Detailed Description

Defines an **IDynamicType** (p. 655) collection.

ISequenceType (p. 673), **IStringType** (p. 678) and **IArrayType** (p. 650) are considered to be **ICollectionType** (p. 652).

9.116.2 Property Documentation

9.116.2.1 ContentType

```
IDynamicType Omg.Types.Dynamic.ICollectionType.ContentType  [get]
```

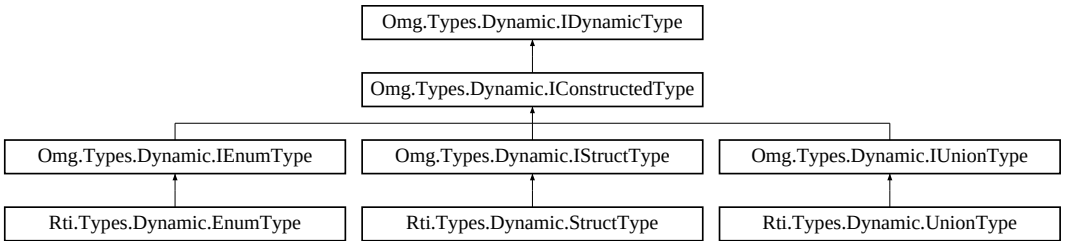
The **IDynamicType** (p. 655) of the elements contained the **ICollectionType** (p. 652).

Implemented in **Rti.Types.Dynamic.ArrayType** (p. 175), **Rti.Types.Dynamic.SequenceType** (p. 1047), **Rti.↩ Types.Dynamic.StringType** (p. 1077), and **Rti.Types.Dynamic.WideStringType** (p. 1256).

9.117 Omg.Types.Dynamic.IConstructedType Interface Reference

Common interface for constructed types.

Inheritance diagram for Omg.Types.Dynamic.IConstructedType:



Public Member Functions

- **IMember GetMember** (uint index)

  *Returns the i-th member of the **IConstructedType*** (p. *653).*
- **IMember GetMember** (string name)

  *Returns a member of the **IConstructedType*** (p. *653) by its name.*

Properties

- **ExtensibilityKind ExtensibilityKind** `[get]`

  *The **ExtensibilityKind*** (p. *654) of the **IConstructedType*** (p. *653).*
- IEnumerable< **IMember** > **Members** `[get]`

  *The **IConstructedType*** (p. *653) members.*

9.117.1 Detailed Description

Common interface for constructed types.

IStructType (p. 680), **IUnionType** (p. 686) and **IEnumType** (p. 657) are considered to be **IConstructedType** (p. 653).

9.117.2 Member Function Documentation

9.117.2.1 GetMember() [1/2]

```
IMember Omg.Types.Dynamic.IConstructedType.GetMember (
            uint index )
```

Returns the i-th member of the **IConstructedType** (p. 653).

Implemented in **Rti.Types.Dynamic.EnumType** (p. 616), **Rti.Types.Dynamic.StructType** (p. 1087), and **Rti.↩ Types.Dynamic.UnionType** (p. 1240).

9.117.2.2 GetMember() [2/2]

```
IMember Omg.Types.Dynamic.IConstructedType.GetMember (
            string name )
```

Returns a member of the **IConstructedType** (p. 653) by its name.

Implemented in **Rti.Types.Dynamic.EnumType** (p. 617), **Rti.Types.Dynamic.StructType** (p. 1087), and **Rti.↩ Types.Dynamic.UnionType** (p. 1240).

9.117.3 Property Documentation

9.117.3.1 ExtensibilityKind

```
ExtensibilityKind Omg.Types.Dynamic.IConstructedType.ExtensibilityKind [get]
```

The **ExtensibilityKind** (p. 654) of the **IConstructedType** (p. 653).

Implemented in **Rti.Types.Dynamic.EnumType** (p. 618), **Rti.Types.Dynamic.StructType** (p. 1089), and **Rti.↩ Types.Dynamic.UnionType** (p. 1242).

9.117.3.2 Members

```
IEnumerable< IMember> Omg.Types.Dynamic.IConstructedType.Members [get]
```

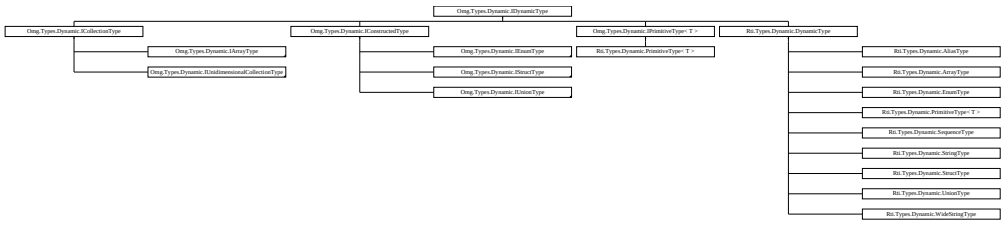
The **IConstructedType** (p. 653) members.

Implemented in **Omg.Types.Dynamic.IEnumType** (p. 657), **Omg.Types.Dynamic.IStructType** (p. 681), **Omg.↩ Types.Dynamic.IUnionType** (p. 686), **Rti.Types.Dynamic.EnumType** (p. 619), **Rti.Types.Dynamic.StructType** (p. 1089), and **Rti.Types.Dynamic.UnionType** (p. 1242).

9.118 Omg.Types.Dynamic.IDynamicType Interface Reference

Interface of DynamicType.

Inheritance diagram for Omg.Types.Dynamic.IDynamicType:



Properties

- string **Name** [get]

  *The name of the **IDynamicType** (p. 655).*
- **TypeKind Kind** [get]

  *The kind of **IDynamicType** (p. 655).*

9.118.1 Detailed Description

Interface of DynamicType.

9.118.2 Property Documentation

9.118.2.1 Name

```
string Omg.Types.Dynamic.IDynamicType.Name  [get]
```

The name of the **IDynamicType** (p. 655).

Implemented in **Rti.Types.Dynamic.DynamicType** (p. 585).

9.118.2.2 Kind

```
TypeKind Omg.Types.Dynamic.IDynamicType.Kind  [get]
```

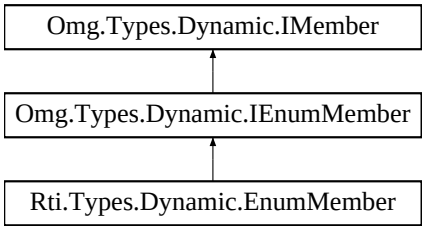
The kind of **IDynamicType** (p. 655).

Implemented in **Rti.Types.Dynamic.DynamicType** (p. 585).

9.119 Omg.Types.Dynamic.IEnumMember Interface Reference

Defines a member of an **IEnumType** (p. 657).

Inheritance diagram for Omg.Types.Dynamic.IEnumMember:



Properties

- int **Ordinal** `[get]`

  *The value for this **IEnumMember** (p. 656) in the enumeration.*

9.119.1 Detailed Description

Defines a member of an **IEnumType** (p. 657).

9.119.2 Property Documentation

9.119.2.1 Ordinal

```
int Omg.Types.Dynamic.IEnumMember.Ordinal  [get]
```

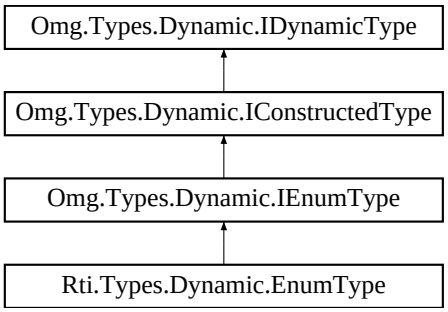
The value for this **IEnumMember** (p. 656) in the enumeration.

Implemented in **Rti.Types.Dynamic.EnumMember** (p. 615).

9.120 Omg.Types.Dynamic.IEnumType Interface Reference

Represents an IDL enum.

Inheritance diagram for Omg.Types.Dynamic.IEnumType:



Properties

- new IEnumerable< **IEnumMember** > **Members** `[get]`

  *The **IEnumType** (p. 657) members.*

Additional Inherited Members

9.120.1 Detailed Description

Represents an IDL enum.

9.120.2 Property Documentation

9.120.2.1 Members

`new IEnumerable< IEnumMember> Omg.Types.Dynamic.IEnumType.Members [get]`

The **IEnumType** (p. 657) members.

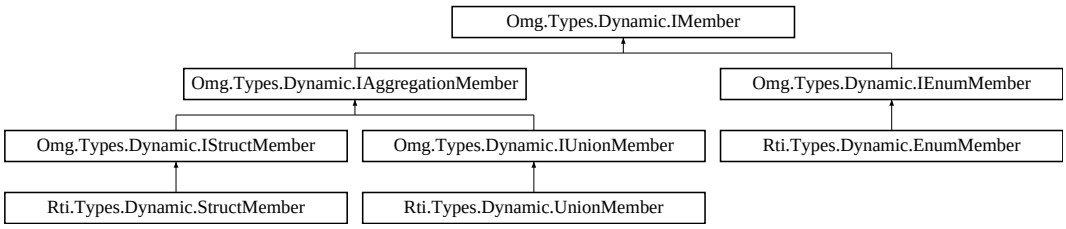
Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

Implemented in **Rti.Types.Dynamic.EnumType** (p. 619).

9.121 Omg.Types.Dynamic.IMember Interface Reference

Common interface for all members of an **IDynamicType** (p. 655).

Inheritance diagram for Omg.Types.Dynamic.IMember:



Properties

- string **Name** `[get]`

  The name of the member.

9.121.1 Detailed Description

Common interface for all members of an **IDynamicType** (p. 655).

9.121.2 Property Documentation

9.121.2.1 Name

```
string Omg.Types.Dynamic.IMember.Name  [get]
```

The name of the member.

Implemented in **Rti.Types.Dynamic.EnumMember** (p. 615), **Rti.Types.Dynamic.StructMember** (p. 1084), and **Rti.Types.Dynamic.UnionMember** (p. 1237).

9.122 Omg.Dds.Core.ImmutablePolicyException Class Reference

Indicates that the application attempted to modify an immutable QoS policy.

Inherits InvalidOperationException.

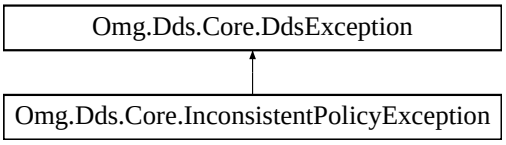
9.122.1 Detailed Description

Indicates that the application attempted to modify an immutable QoS policy.

9.123 Omg.Dds.Core.InconsistentPolicyException Class Reference

Indicates that the application specified a set of QoS policies that are not consistent with each other

Inheritance diagram for Omg.Dds.Core.InconsistentPolicyException:



Additional Inherited Members

9.123.1 Detailed Description

Indicates that the application specified a set of QoS policies that are not consistent with each other

9.124 Rti.Dds.Core.Status.InconsistentTopicStatus Class Reference

Notifies of a change in the **StatusMask.InconsistentTopic** (p. 108) status

Inherits IEquatable< InconsistentTopicStatus >.

Public Member Functions

- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Gets the hash code.
- bool **Equals** (**InconsistentTopicStatus** other)

  Compares for equality.
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  *Total cumulative count of the pairs (DataReader, DataWriter) whose topic names match the Topic to which this status is attached and whose types are inconsistent according to the rules defined in **Policy.TypeConsistencyEnforcement** (p. 1214)*

9.124.1 Detailed Description

Notifies of a change in the **StatusMask.InconsistentTopic** (p. 108) status

9.124.2 Member Function Documentation

9.124.2.1 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.InconsistentTopicStatus.Equals (
            object other )
```

Compares for equality.

9.124.2.2 GetHashCode()

```
override int Rti.Dds.Core.Status.InconsistentTopicStatus.GetHashCode ( )
```

Gets the hash code.

9.124.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.InconsistentTopicStatus.Equals (
             InconsistentTopicStatus other )  [inline]
```

Compares for equality.

9.124.2.4 ToString()

```
override string Rti.Dds.Core.Status.InconsistentTopicStatus.ToString ( )
```

Returns a readable summary of the status

9.124.3 Property Documentation

9.124.3.1 TotalCount

EventCount<int> Rti.Dds.Core.Status.InconsistentTopicStatus.TotalCount [get]

Total cumulative count of the pairs (DataReader, DataWriter) whose topic names match the Topic to which this status is attached and whose types are inconsistent according to the rules defined in **Policy.TypeConsistencyEnforcement** (p. 1214)

*The full documentation is available in the C API:*DDS_InconsistentTopicStatus_total_count

9.125 Rti.Dds.Core.InstanceHandle Struct Reference

Handle to identity different instances of the same Topics.Topic<T> of a certain type.

Inherits IEquatable< InstanceHandle >, and IComparable< InstanceHandle >.

Public Member Functions

- bool **IsNil** ()
  *Compare this handle to **Nil** (p. 663)*
- bool **Equals** (**InstanceHandle** other)
  Compares this instance handle with another handle for equality.
- int **CompareTo** (**InstanceHandle** other)
  Compares this instance handle with another handle.
- override bool **Equals** (object obj)
  Compares this instance handle with another handle for equality.
- override int **GetHashCode** ()
  *Generates a hash code from this **InstanceHandle** (p. 661).*
- override string **ToString** ()
  *Returns a string representation of this **InstanceHandle** (p. 661)*
- byte[ ] **ToArray** ()
  Converts this instance handle to a byte array.

Static Public Member Functions

- static **InstanceHandle FromArray** (byte[ ] bytes)

  *Creates a non-Nil **InstanceHandle** (p. 661) from the bytes in a 16-byte array*

Properties

- static **InstanceHandle Nil** = new **InstanceHandle**(DDS_InstanceHandle_t.Nil) `[get]`

  The NIL instance handle.

9.125.1 Detailed Description

Handle to identity different instances of the same Topics.Topic<T> of a certain type.

The full documentation is available in the C API: `DDS_InstanceHandle_t`

9.125.2 Member Function Documentation

9.125.2.1 IsNil()

```
bool Rti.Dds.Core.InstanceHandle.IsNil ( )
```

Compare this handle to **Nil** (p. 663)

The full documentation is available in the C API: `DDS_InstanceHandle_t_is_nil`

9.125.2.2 Equals() [1/2]

```
bool Rti.Dds.Core.InstanceHandle.Equals (
            InstanceHandle other )
```

Compares this instance handle with another handle for equality.

The full documentation is available in the C API: `DDSInstanceHandleEquals`

9.125.2.3 CompareTo()

```
int Rti.Dds.Core.InstanceHandle.CompareTo (
            InstanceHandle other )
```

Compares this instance handle with another handle.

The full documentation is available in the C API: `DDSInstanceHandleCompare`

9.125.2.4 Equals() [2/2]

```
override bool Rti.Dds.Core.InstanceHandle.Equals (
            object obj )
```

Compares this instance handle with another handle for equality.

The full documentation is available in the C API: `DDSInstanceHandleEquals`

9.125.2.5 GetHashCode()

```
override int Rti.Dds.Core.InstanceHandle.GetHashCode ( )
```

Generates a hash code from this **InstanceHandle** (p. 661).

9.125.2.6 ToString()

```
override string Rti.Dds.Core.InstanceHandle.ToString ( )
```

Returns a string representation of this **InstanceHandle** (p. 661)

9.125.2.7 ToArray()

```
byte[] Rti.Dds.Core.InstanceHandle.ToArray ( )
```

Converts this instance handle to a byte array.

9.125.2.8 FromArray()

```
static  InstanceHandle Rti.Dds.Core.InstanceHandle.FromArray (
            byte[] bytes )  [inline], [static]
```

Creates a non-Nil **InstanceHandle** (p. 661) from the bytes in a 16-byte array

9.125.3 Property Documentation

9.125.3.1 Nil

InstanceHandle Rti.Dds.Core.InstanceHandle.Nil = new **InstanceHandle**(DDS_InstanceHandle_t.Nil) [static], [get]

The NIL instance handle.

The full documentation is available in the C API: DDSInstanceHandle_tHANDLE_NIL

9.126 Rti.Dds.Core.Policy.InstanceReplacementSettings Class Reference

Instance replacement kind applied to each instance state.

Inherits IEquatable< InstanceReplacementSettings >.

Public Member Functions

- **InstanceReplacementSettings With** (Action< **InstanceReplacementSettingsBuilder** > build)
  *Creates a new **InstanceReplacementSettings** (p. 664) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**InstanceReplacementSettings** other)
  Compares for equality

Properties

- **InstanceRemovalKind AliveInstanceRemoval** [get]
  *Removal kind applied to alive **Omg.Dds.Subscription.InstanceState.Alive** (p. 66))) instances.*
- **InstanceRemovalKind DisposedInstanceRemoval** [get]
  *Removal kind applied to disposed (**Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66)) instances.*
- **InstanceRemovalKind NoWritersInstanceRemoval** [get]
  *Removal kind applied to fully-unregistered (**Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66)) instances.*
- static **InstanceReplacementSettings Default** [get]
  *Singleton containing the default value of a **InstanceReplacementSettings** (p. 664)*

9.126.1 Detailed Description

Instance replacement kind applied to each instance state.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsInstance↩ ReplacementSettings

9.126.2 Member Function Documentation

9.126.2.1 With()

```
InstanceReplacementSettings Rti.Dds.Core.Policy.InstanceReplacementSettings.With (
            Action< InstanceReplacementSettingsBuilder > build )  [inline]
```

Creates a new **InstanceReplacementSettings** (p. 664) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **InstanceReplacementSettings** (p. 664).

Returns

A new **InstanceReplacementSettings** (p. 664) with the changes applied by the Action

9.126.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.InstanceReplacementSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.126.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.InstanceReplacementSettings.Equals (
            object other )
```

Compares for equality

9.126.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.InstanceReplacementSettings.Equals (
             InstanceReplacementSettings other )  [inline]
```

Compares for equality

9.126.3 Property Documentation

9.126.3.1 AliveInstanceRemoval

InstanceRemovalKind Rti.Dds.Core.Policy.InstanceReplacementSettings.AliveInstanceRemoval [get]

Removal kind applied to alive **Omg.Dds.Subscription.InstanceState.Alive** (p. 66))) instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsInstance↩ ReplacementSettings_alive_instance_removal

9.126.3.2 DisposedInstanceRemoval

InstanceRemovalKind Rti.Dds.Core.Policy.InstanceReplacementSettings.DisposedInstanceRemoval [get]

Removal kind applied to disposed (**Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66)) instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsInstance↩ ReplacementSettings_disposed_instance_removal

9.126.3.3 NoWritersInstanceRemoval

InstanceRemovalKind Rti.Dds.Core.Policy.InstanceReplacementSettings.NoWritersInstanceRemoval [get]

Removal kind applied to fully-unregistered (**Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66)) instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsInstance↩ ReplacementSettings_no_writers_instance_removal

9.126.3.4 Default

InstanceReplacementSettings Rti.Dds.Core.Policy.InstanceReplacementSettings.Default [static], [get]

Singleton containing the default value of a **InstanceReplacementSettings** (p. 664)

9.127 Rti.Dds.Core.Policy.InstanceReplacementSettingsBuilder Class Reference

A modifiable type used to create an immutable **InstanceReplacementSettings** (p. 664)

Public Member Functions

- **InstanceReplacementSettingsBuilder** (**InstanceReplacementSettings** data)

  Creates a builder with the values of an existing immutable instance
- **InstanceReplacementSettings Build** ()

  *Creates a new **InstanceReplacementSettings** (p. 664) immutable object from this one.*

Properties

- **InstanceRemovalKind AliveInstanceRemoval** `[get, set]`

  *Removal kind applied to alive (**Omg.Dds.Subscription.InstanceState.Alive** (p. 66)) instances.*
- **InstanceRemovalKind DisposedInstanceRemoval** `[get, set]`

  *Removal kind applied to disposed (**Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66)) instances.*
- **InstanceRemovalKind NoWritersInstanceRemoval** `[get, set]`

  *Removal kind applied to fully-unregistered (**Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66)) instances.*

9.127.1 Detailed Description

A modifiable type used to create an immutable **InstanceReplacementSettings** (p. 664)

9.127.2 Constructor & Destructor Documentation

9.127.2.1 InstanceReplacementSettingsBuilder()

```
Rti.Dds.Core.Policy.InstanceReplacementSettingsBuilder.InstanceReplacementSettingsBuilder (
            InstanceReplacementSettings data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.127.3 Member Function Documentation

9.127.3.1 Build()

```
InstanceReplacementSettings Rti.Dds.Core.Policy.InstanceReplacementSettingsBuilder.Build ( )
```

Creates a new **InstanceReplacementSettings** (p. 664) immutable object from this one.

9.127.4 Property Documentation

9.127.4.1 AliveInstanceRemoval

InstanceRemovalKind Rti.Dds.Core.Policy.InstanceReplacementSettingsBuilder.AliveInstanceRemoval [get], [set]

Removal kind applied to alive (**Omg.Dds.Subscription.InstanceState.Alive** (p. 66)) instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsInstance↩ ReplacementSettings_alive_instance_removal

9.127.4.2 DisposedInstanceRemoval

InstanceRemovalKind Rti.Dds.Core.Policy.InstanceReplacementSettingsBuilder.DisposedInstance↩ Removal [get], [set]

Removal kind applied to disposed (**Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66)) instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsInstance↩ ReplacementSettings_disposed_instance_removal

9.127.4.3 NoWritersInstanceRemoval

InstanceRemovalKind Rti.Dds.Core.Policy.InstanceReplacementSettingsBuilder.NoWritersInstance↩ Removal [get], [set]

Removal kind applied to fully-unregistered (**Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66)) instances.

The full documentation is available in the C API: DDS_DataReaderResourceLimitsInstance↩ ReplacementSettings_no_writers_instance_removal

9.128 Rti.Dds.Core.ServiceEnvironment.InternalDetails Class Reference

For internal use only

Public Member Functions

- **DynamicTypeFactory GetTypeFactory** (bool isPublic)

  Selects the right type factory.

Properties

- **DynamicTypeFactory CodegenTypeFactory** [get]
  Type factory used by rtiddsgen
- TypeSupportFactory **TypeSupportFactory** [get]
  Type support factory used by rtiddsgen

9.128.1 Detailed Description

For internal use only

9.128.2 Member Function Documentation

9.128.2.1 GetTypeFactory()

```
DynamicTypeFactory Rti.Dds.Core.ServiceEnvironment.InternalDetails.GetTypeFactory (
            bool isPublic )
```

Selects the right type factory.

9.128.3 Property Documentation

9.128.3.1 CodegenTypeFactory

```
DynamicTypeFactory Rti.Dds.Core.ServiceEnvironment.InternalDetails.CodegenTypeFactory [get]
```

Initial value:

```
=
              new MonotonicDynamicTypeFactory()
```

Type factory used by rtiddsgen

9.128.3.2 TypeSupportFactory

```
TypeSupportFactory Rti.Dds.Core.ServiceEnvironment.InternalDetails.TypeSupportFactory [get]
```

Initial value:

```
=
              new TypeSupportFactory()
```

Type support factory used by rtiddsgen

9.129 Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus Class Reference

Notifies you when a local DomainParticipant's artifact (identity or permissions) is about to expire

Inherits IEquatable< InvalidLocalAdvanceNoticeStatus >.

Public Member Functions

- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Gets the hash code.
- bool **Equals** (**InvalidLocalAdvanceNoticeStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **Time ExpirationTime** = Time.Invalid `[get]`

  Time at which the local artifact will expire
- uint **ExpirationCode** = 0 `[get]`

  The reason (a numeric code) for the local artifact to expire.
- string **ExpirationMessage** `[get]`

  A descriptive message for the expiration code.

9.129.1 Detailed Description

Notifies you when a local DomainParticipant's artifact (identity or permissions) is about to expire

9.129.2 Member Function Documentation

9.129.2.1 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus.Equals (
            object other )
```

Compares for equality.

9.129.2.2 GetHashCode()

```
override int Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.129.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus.Equals (
            InvalidLocalAdvanceNoticeStatus other )  [inline]
```

Compares for equality

9.129.2.4 ToString()

```
override string Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus.ToString ( )
```

Returns a readable summary of the status

9.129.3 Property Documentation

9.129.3.1 ExpirationTime

```
Time Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus.ExpirationTime = Time.Invalid  [get]
```

Time at which the local artifact will expire

The full documentation is available in the C API: DDS_InvalidLocalAdvanceNoticeStatus_↩ expiration_time

9.129.3.2 ExpirationCode

```
uint Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus.ExpirationCode = 0  [get]
```

The reason (a numeric code) for the local artifact to expire.

The full documentation is available in the C API: DDS_InvalidLocalAdvanceNoticeStatus_↩ expiration_code

9.129.3.3 ExpirationMessage

```
string Rti.Dds.Core.Status.InvalidLocalAdvanceNoticeStatus.ExpirationMessage [get]
```

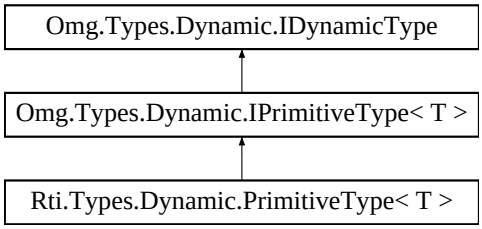
A descriptive message for the expiration code.

The full documentation is available in the C API: DDS_InvalidLocalAdvanceNoticeStatus_↩ expiration_message

9.130 Omg.Types.Dynamic.IPrimitiveType< T > Interface Template Reference

Represents an IDL primitive type.

Inheritance diagram for Omg.Types.Dynamic.IPrimitiveType< T >:



Additional Inherited Members

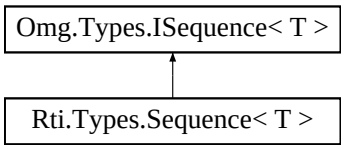
9.130.1 Detailed Description

Represents an IDL primitive type.

9.131 Omg.Types.ISequence< T > Interface Template Reference

IDL sequences map to this type.

Inheritance diagram for Omg.Types.ISequence< T >:



9.131.1 Detailed Description

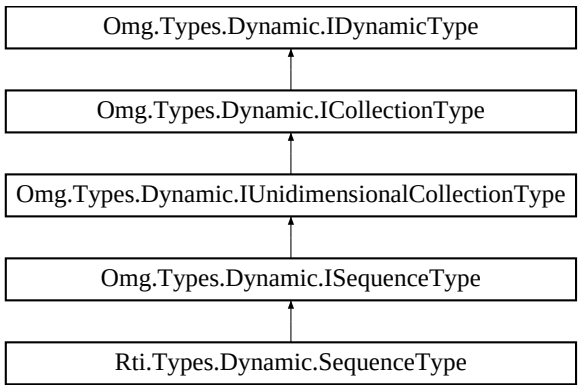
IDL sequences map to this type.

This class provides the same methods and properties as `System.Collections.Generic.List` (`https://docs.microsoft.com/en-us/dotnet/api/system.collections.generic.list-1?view=netcore-3.1`).

9.132 Omg.Types.Dynamic.ISequenceType Interface Reference

Defines an **ISequenceType** (p. 673).

Inheritance diagram for Omg.Types.Dynamic.ISequenceType:



Additional Inherited Members

9.132.1 Detailed Description

Defines an **ISequenceType** (p. 673).

9.133 Rti.Dds.Topics.ISerializer< T > Interface Template Reference

Allows serializing and deserializing IDL types as byte buffers

Inherits IDisposable.

Public Member Functions

- byte[ ] **Serialize** (T sample)

  Serializes a data sample into a byte array
- unsafe uint **Serialize** (T sample, byte *buffer, int length)

  Serializes a data sample into a byte array
- T **Deserialize** (byte[ ] buffer)

  Deserializes a data sample from a byte array
- unsafe T **Deserialize** (byte *buffer, int length)

  Deserializes a data sample from a byte buffer
- uint **GetSerializedSampleMaxSize** ()

  Calculates the maximum number of bytes that any data sample of type `T` may take in serialized form.
- uint **GetSerializedSampleMinSize** ()

  Calculates the minimum number of bytes that any data sample of type `T` may take in serialized form.
- uint **GetSerializedSampleSize** (T sample)

  Calculates the exact number of bytes that a given data sample takes in serialized form.
- **DynamicData** **ToDynamicData** (T sample)

  Converts a T sample into a DynamicData sample.
- T **FromDynamicData** (**DynamicData** sample)

  Converts a DynamicData sample into a T sample.

Properties

- bool **IsUnbounded** `[get]`

  Returns true if this type's serialized sample maximum size is unbounded

9.133.1 Detailed Description

Allows serializing and deserializing IDL types as byte buffers

Template Parameters

T	A type generated from IDL

To create an **ISerializer** (p. 673), use **TypeSupport**<**T**>**.CreateSerializer** (p. 1225).

Warning

> The **ISerializer** (p. 673) methods are not thread-safe. To use them in multiple threads, either protect them or create a different **ISerializer** (p. 673) per thread

This type is IDisposable, but it automatically calls Dispose() in its destructor.

This interface has **extension methods**, see **Rti.Dds.Topics.SerializerExtensions** (p. 1047) .

See also

> **IDL examples** (p. 49)

9.133.2 Member Function Documentation

9.133.2.1 Serialize() [1/2]

```
byte[]  Rti.Dds.Topics.ISerializer< T >.Serialize (
            T sample )
```

Serializes a data sample into a byte array

Parameters

sample	A data sample

Returns

A new byte array containing the serialized data

9.133.2.2 Serialize() [2/2]

```
unsafe uint  Rti.Dds.Topics.ISerializer< T >.Serialize (
            T sample,
            byte * buffer,
            int length )
```

Serializes a data sample into a byte array

Parameters

sample	A data sample
buffer	A byte buffer with enough space to contain the serialized data
length	The available length of the byte buffer. This operation throws DdsException if the data doesn't fit. You can obtain the exact size required for this sample with **GetSerializedSampleSize** (p. 677) or a size that is guaranteed to suffice for any sample of this type with **GetSerializedSampleMaxSize** (p. 676).

Returns

The actual number of bytes that were serialized

9.133.2.3 Deserialize() [1/2]

```
T  Rti.Dds.Topics.ISerializer< T >.Deserialize (
            byte[] buffer )
```

Deserializes a data sample from a byte array

Parameters

buffer	A byte array containing the serialized data

Returns

A new data sample created by deserializing the buffer

9.133.2.4 Deserialize() [2/2]

```
unsafe T  Rti.Dds.Topics.ISerializer< T >.Deserialize (
            byte * buffer,
            int length )
```

Deserializes a data sample from a byte buffer

Parameters

buffer	A byte buffer containing the serialized data
length	The length of the byte buffer

Returns

A new data sample created by deserializing the buffer

9.133.2.5 GetSerializedSampleMaxSize()

```
uint  Rti.Dds.Topics.ISerializer< T >.GetSerializedSampleMaxSize ( )
```

Calculates the maximum number of bytes that any data sample of type `T` may take in serialized form.

9.133.2.6 GetSerializedSampleMinSize()

```
uint  Rti.Dds.Topics.ISerializer< T >.GetSerializedSampleMinSize ( )
```

Calculates the minimum number of bytes that any data sample of type T may take in serialized form.

9.133.2.7 GetSerializedSampleSize()

```
uint  Rti.Dds.Topics.ISerializer< T >.GetSerializedSampleSize (
            T sample )
```

Calculates the exact number of bytes that a given data sample takes in serialized form.

Parameters

sample	The data sample

Returns

The number of bytes that the sample needs to be serialized

9.133.2.8 ToDynamicData()

```
DynamicData  Rti.Dds.Topics.ISerializer< T >.ToDynamicData (
            T sample )
```

Converts a T sample into a DynamicData sample.

Parameters

sample	The sample to convert

Returns

A copy of sample as a DynamicData object

9.133.2.9 FromDynamicData()

```
T  Rti.Dds.Topics.ISerializer< T >.FromDynamicData (
             DynamicData sample )
```

Converts a DynamicData sample into a T sample.

Parameters

sample	The sample to convert

Returns

A copy of sample as an instance of type T

This method requires that sample.Type and TSupport.Instance.DynamicType be equal.

9.133.3 Property Documentation

9.133.3.1 IsUnbounded

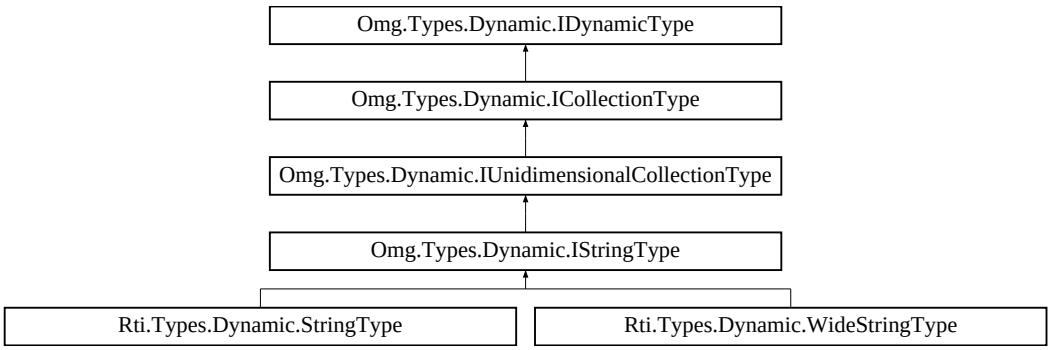
`bool` **`Rti.Dds.Topics.ISerializer`**`< T >.IsUnbounded [get]`

Returns true if this type's serialized sample maximum size is unbounded

9.134 Omg.Types.Dynamic.IStringType Interface Reference

Defines an **IStringType** (p. 678).

Inheritance diagram for Omg.Types.Dynamic.IStringType:



Additional Inherited Members

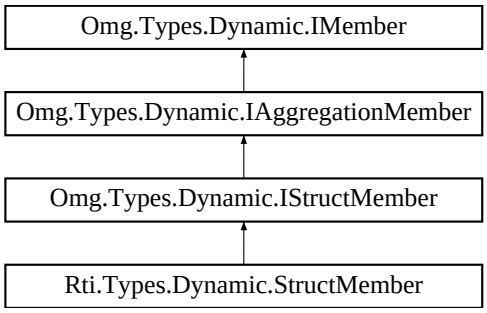
9.134.1 Detailed Description

Defines an **IStringType** (p. 678).

9.135 Omg.Types.Dynamic.IStructMember Interface Reference

Defines a member of an **IStructType** (p. 680).

Inheritance diagram for Omg.Types.Dynamic.IStructMember:



Properties

- bool **IsKey** [get]

  Whether this member is annotated as a key.
- bool **IsOptional** [get]

  Whether this member is annotated as optional.

9.135.1 Detailed Description

Defines a member of an **IStructType** (p. 680).

9.135.2 Property Documentation

9.135.2.1 IsKey

```
bool Omg.Types.Dynamic.IStructMember.IsKey [get]
```

Whether this member is annotated as a key.

Implemented in **Rti.Types.Dynamic.StructMember** (p. 1085).

9.135.2.2 IsOptional

```
bool Omg.Types.Dynamic.IStructMember.IsOptional  [get]
```

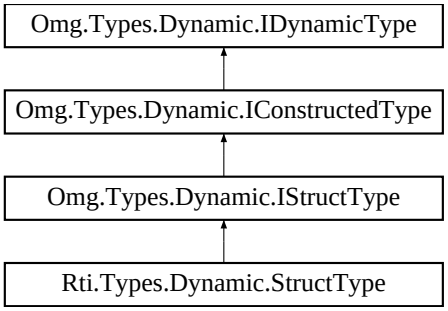
Whether this member is annotated as optional.

Implemented in **Rti.Types.Dynamic.StructMember** (p. 1085).

9.136 Omg.Types.Dynamic.IStructType Interface Reference

Represents an IDL struct.

Inheritance diagram for Omg.Types.Dynamic.IStructType:



Properties

- **IStructType Parent** [get]

  *The parent **IStructType*** (p. *680*) *of this **IStructType*** (p. *680*).
- new IEnumerable< **IStructMember** > **Members** [get]

  *The **IStructType*** (p. *680*) *members.*

Additional Inherited Members

9.136.1 Detailed Description

Represents an IDL struct.

9.136.2 Property Documentation

9.136.2.1 Parent

IStructType Omg.Types.Dynamic.IStructType.Parent [get]

The parent **IStructType** (p. 680) of this **IStructType** (p. 680).

Implemented in **Rti.Types.Dynamic.StructType** (p. 1089).

9.136.2.2 Members

new IEnumerable< **IStructMember**> Omg.Types.Dynamic.IStructType.Members [get]

The **IStructType** (p. 680) members.

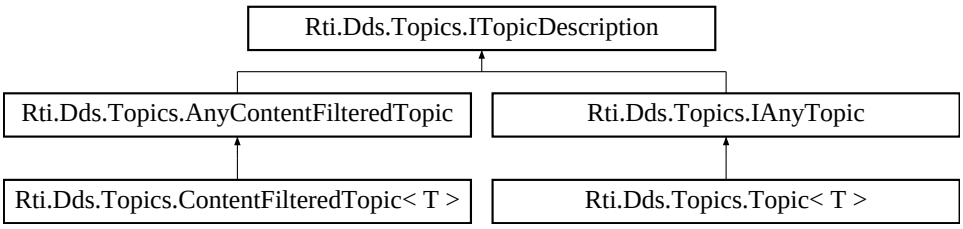
Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

Implemented in **Rti.Types.Dynamic.StructType** (p. 1089).

9.137 Rti.Dds.Topics.ITopicDescription Interface Reference

Common interface for Rti.Dds.Topics.Topic<T> and Rti.Dds.Topics.ContentFilteredTopic<T>

Inheritance diagram for Rti.Dds.Topics.ITopicDescription:



Properties

- **DomainParticipant DomainParticipant** [get]
  The DomainParticipant that created this topic
- string **Name** [get]
  The name given to this topic
- string **TypeName** [get]
  The name of the type associated with this topic.

9.137.1 Detailed Description

Common interface for Rti.Dds.Topics.Topic<T> and Rti.Dds.Topics.ContentFilteredTopic<T>

9.137.2 Property Documentation

9.137.2.1 DomainParticipant

```
DomainParticipant Rti.Dds.Topics.ITopicDescription.DomainParticipant  [get]
```

The DomainParticipant that created this topic

Implemented in **Rti.Dds.Topics.AnyContentFilteredTopic** (p. 148), and **Rti.Dds.Topics.Topic< T >** (p. 1147).

9.137.2.2 Name

```
string Rti.Dds.Topics.ITopicDescription.Name  [get]
```

The name given to this topic

Implemented in **Rti.Dds.Topics.AnyContentFilteredTopic** (p. 148), and **Rti.Dds.Topics.Topic< T >** (p. 1147).

9.137.2.3 TypeName

```
string Rti.Dds.Topics.ITopicDescription.TypeName  [get]
```

The name of the type associated with this topic.

Implemented in **Rti.Dds.Topics.AnyContentFilteredTopic** (p. 148), and **Rti.Dds.Topics.Topic< T >** (p. 1147).

9.138 Rti.Dds.Topics.ITypePlugin Interface Reference

For internal use only

Inherits IDisposable.

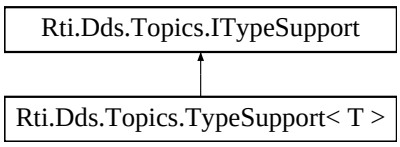
9.138.1 Detailed Description

For internal use only

9.139 Rti.Dds.Topics.ITypeSupport Interface Reference

Base interface that provides support operations for IDL-generated types

Inheritance diagram for Rti.Dds.Topics.ITypeSupport:



Properties

- **DynamicType DynamicType** `[get]`
  The DynamicType that describes the IDL type.

9.139.1 Detailed Description

Base interface that provides support operations for IDL-generated types

9.139.2 Property Documentation

9.139.2.1 DynamicType

DynamicType `Rti.Dds.Topics.ITypeSupport.DynamicType [get]`

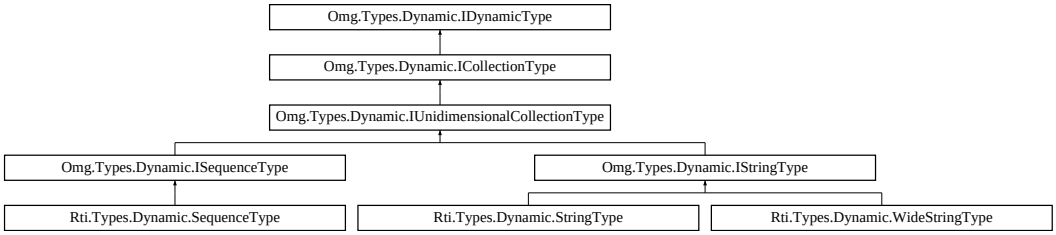
The DynamicType that describes the IDL type.

Implemented in **Rti.Dds.Topics.TypeSupport< T >** (p. 1228).

9.140 Omg.Types.Dynamic.IUnidimensionalCollectionType Interface Reference

Defines a single-dimension **ICollectionType** (p. 652).

Inheritance diagram for Omg.Types.Dynamic.IUnidimensionalCollectionType:



Properties

- uint **Bounds** `[get]`

  The bounds of the collection's single dimension.

9.140.1 Detailed Description

Defines a single-dimension **ICollectionType** (p. 652).

9.140.2 Property Documentation

9.140.2.1 Bounds

```
uint Omg.Types.Dynamic.IUnidimensionalCollectionType.Bounds  [get]
```

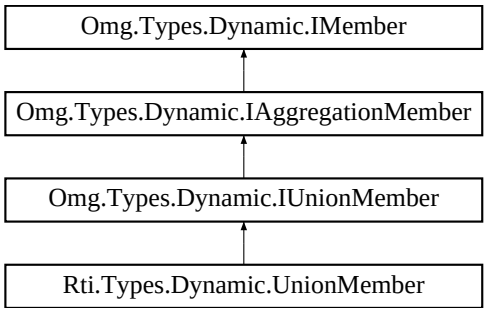
The bounds of the collection's single dimension.

Implemented in **Rti.Types.Dynamic.SequenceType** (p. 1047), **Rti.Types.Dynamic.StringType** (p. 1077), and **Rti.↩ Types.Dynamic.WideStringType** (p. 1256).

9.141 Omg.Types.Dynamic.IUnionMember Interface Reference

Defines a member of an **IUnionType** (p. 686).

Inheritance diagram for Omg.Types.Dynamic.IUnionMember:



Properties

- IEnumerable< int > **Labels** `[get]`

  *The labels that select this **IUnionMember** (p. 685).*

9.141.1 Detailed Description

Defines a member of an **IUnionType** (p. 686).

9.141.2 Property Documentation

9.141.2.1 Labels

```
IEnumerable<int> Omg.Types.Dynamic.IUnionMember.Labels  [get]
```

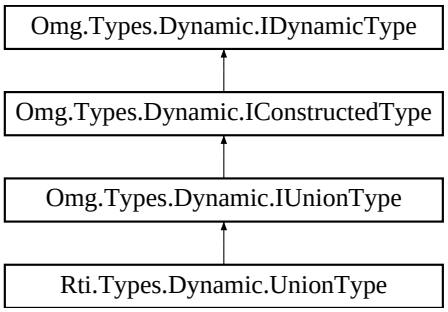
The labels that select this **IUnionMember** (p. 685).

Implemented in **Rti.Types.Dynamic.UnionMember** (p. 1238).

9.142 Omg.Types.Dynamic.IUnionType Interface Reference

Represents an IDL union.

Inheritance diagram for Omg.Types.Dynamic.IUnionType:



Properties

- **IDynamicType Discriminator** `[get]`

  *The **IUnionType** (p. 686) discriminator.*
- new IEnumerable< **IUnionMember** > **Members** `[get]`

  *The **IUnionType** (p. 686) members.*

Additional Inherited Members

9.142.1 Detailed Description

Represents an IDL union.

9.142.2 Property Documentation

9.142.2.1 Discriminator

```
IDynamicType Omg.Types.Dynamic.IUnionType.Discriminator [get]
```

The **IUnionType** (p. 686) discriminator.

Implemented in **Rti.Types.Dynamic.UnionType** (p. 1243).

9.142.2.2 Members

```
new IEnumerable< IUnionMember> Omg.Types.Dynamic.IUnionType.Members  [get]
```

The **IUnionType** (p. 686) members.

Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

Implemented in **Rti.Types.Dynamic.UnionType** (p. 1242).

9.143 Omg.Types.KeyAttribute Class Reference

Indicates that a field in a topic-type is a key (IDL @key annotation)

Inherits Attribute.

9.143.1 Detailed Description

Indicates that a field in a topic-type is a key (IDL @key annotation)

9.144 Rti.Types.Builtin.KeyedOctetsTopicType Class Reference

A keyed topic-type containing a string (the key) and a sequence of bytes. This type can be used to instantiate a Rti.↩ Dds.Topics.Topic<T>.

Inherits IEquatable< KeyedOctetsTopicType >.

Public Member Functions

- **KeyedOctetsTopicType** ()

  Creates an instance with an empty key and an empty sequence.
- **KeyedOctetsTopicType** (string **Key**, **ISequence**< byte > **Value**)

  Creates an instance with the given key and sequence of bytes.
- **KeyedOctetsTopicType** (**KeyedOctetsTopicType** other)

  Creates an instance with a copy of another instance (the sequence elements are also copied).
- override int **GetHashCode** ()

  Gets a simple hashcode based on the key and the number of elements.
- bool **Equals** (**KeyedOctetsTopicType** other)

  Compares the key and the full sequence
- override bool **Equals** (object obj)

  Compares the key and the full sequence
- override string **ToString** ()

  Converts to string

Properties

- string **Key** = string.Empty [get, set]

  The key (its maximum size is 1024 bytes in UTF-8 format)
- **ISequence**< byte > **Value** [get]

  The sequence of octets (its maximum size is 2048)

9.144.1 Detailed Description

A keyed topic-type containing a string (the key) and a sequence of bytes. This type can be used to instantiate a Rti.↩ Dds.Topics.Topic<T>.

This type is equivalent to the following IDL type:

```
struct KeyedOctetsTopicType {
    @key string<1024> key;
    sequence<octet, 2048> value;
};
```

9.144.2 Constructor & Destructor Documentation

9.144.2.1 KeyedOctetsTopicType() [1/3]

```
Rti.Types.Builtin.KeyedOctetsTopicType.KeyedOctetsTopicType ( )  [inline]
```

Creates an instance with an empty key and an empty sequence.

9.144.2.2 KeyedOctetsTopicType() [2/3]

```
Rti.Types.Builtin.KeyedOctetsTopicType.KeyedOctetsTopicType (
            string Key,
             ISequence< byte > Value )  [inline]
```

Creates an instance with the given key and sequence of bytes.

9.144.2.3 KeyedOctetsTopicType() [3/3]

```
Rti.Types.Builtin.KeyedOctetsTopicType.KeyedOctetsTopicType (
              KeyedOctetsTopicType other )  [inline]
```

Creates an instance with a copy of another instance (the sequence elements are also copied).

9.144.3 Member Function Documentation

9.144.3.1 GetHashCode()

```
override int Rti.Types.Builtin.KeyedOctetsTopicType.GetHashCode ( )  [inline]
```

Gets a simple hashcode based on the key and the number of elements.

9.144.3.2 Equals() [1/2]

```
bool Rti.Types.Builtin.KeyedOctetsTopicType.Equals (
            KeyedOctetsTopicType other )  [inline]
```

Compares the key and the full sequence

9.144.3.3 Equals() [2/2]

```
override bool Rti.Types.Builtin.KeyedOctetsTopicType.Equals (
            object obj )
```

Compares the key and the full sequence

9.144.3.4 ToString()

```
override string Rti.Types.Builtin.KeyedOctetsTopicType.ToString ( )
```

Converts to string

9.144.4 Property Documentation

9.144.4.1 Key

```
string Rti.Types.Builtin.KeyedOctetsTopicType.Key = string.Empty  [get], [set]
```

The key (its maximum size is 1024 bytes in UTF-8 format)

9.144.4.2 Value

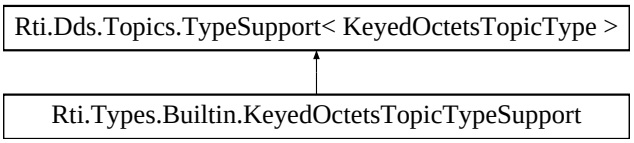
```
ISequence<byte> Rti.Types.Builtin.KeyedOctetsTopicType.Value  [get]
```

The sequence of octets (its maximum size is 2048)

9.145 Rti.Types.Builtin.KeyedOctetsTopicTypeSupport Class Reference

The type support for **KeyedOctetsTopicType** (p. 687).

Inheritance diagram for Rti.Types.Builtin.KeyedOctetsTopicTypeSupport:



Public Member Functions

- **KeyedOctetsTopicTypeSupport** ()
  *For internal use only. Use **Instance** (p. 691) instead.*

Properties

- static **KeyedOctetsTopicTypeSupport Instance** [get]
  Gets the singleton

Additional Inherited Members

9.145.1 Detailed Description

The type support for **KeyedOctetsTopicType** (p. 687).

9.145.2 Constructor & Destructor Documentation

9.145.2.1 KeyedOctetsTopicTypeSupport()

```
Rti.Types.Builtin.KeyedOctetsTopicTypeSupport.KeyedOctetsTopicTypeSupport ( )  [inline]
```

For internal use only. Use **Instance** (p. 691) instead.

9.145.3 Property Documentation

9.145.3.1 Instance

```
KeyedOctetsTopicTypeSupport Rti.Types.Builtin.KeyedOctetsTopicTypeSupport.Instance  [static],
[get]
```

Initial value:
=

```
ServiceEnvironment.Instance.Internal.TypeSupportFactory.CreateTypeSupport<KeyedOctetsTopicTypeSupport,
KeyedOctetsTopicType>()
```

Gets the singleton

9.146 Rti.Types.Builtin.KeyedStringTopicType Class Reference

An keyed topic-type containing two strings: a key and a value. This type can be used to instantiate a Rti.Dds.Topics.↩ Topic<T>.

Inherits IEquatable< KeyedStringTopicType >.

Public Member Functions

- **KeyedStringTopicType** ()
  Creates an instance with two empty strings
- **KeyedStringTopicType** (string **Key**, string **Value**)
  Creates an instance with the given key and value
- **KeyedStringTopicType** (**KeyedStringTopicType** other)
  Creates an instance with the same strings as another instance
- override int **GetHashCode** ()
  Gets the hashcode
- bool **Equals** (**KeyedStringTopicType** other)
  Compares for equality
- override bool **Equals** (object obj)
  Compares for equality
- override string **ToString** ()
  Converts to string

Properties

- string **Key** = string.Empty `[get, set]`

  The key (its maximum size is 1024 bytes in UTF-8 format)
- string **Value** = string.Empty `[get, set]`

  The value (its maximum size is 1024 bytes in UTF-8 format)

9.146.1 Detailed Description

An keyed topic-type containing two strings: a key and a value. This type can be used to instantiate a Rti.Dds.Topics.↩ Topic<T>.

This type is equivalent to the following IDL type:

```
struct KeyedStringTopicType {
    @key string<1024> key;
    string<1024> value;
};
```

Note that the maximum size maximum size of each string is 1024 bytes in UTF-8 format.

9.146.2 Constructor & Destructor Documentation

9.146.2.1 KeyedStringTopicType() [1/3]

```
Rti.Types.Builtin.KeyedStringTopicType.KeyedStringTopicType ( )  [inline]
```

Creates an instance with two empty strings

9.146.2.2 KeyedStringTopicType() [2/3]

```
Rti.Types.Builtin.KeyedStringTopicType.KeyedStringTopicType (
            string Key,
            string Value )  [inline]
```

Creates an instance with the given key and value

9.146.2.3 KeyedStringTopicType() [3/3]

```
Rti.Types.Builtin.KeyedStringTopicType.KeyedStringTopicType (
             KeyedStringTopicType other )  [inline]
```

Creates an instance with the same strings as another instance

9.146.3 Member Function Documentation

9.146.3.1 GetHashCode()

```
override int Rti.Types.Builtin.KeyedStringTopicType.GetHashCode ( )  [inline]
```

Gets the hashcode

9.146.3.2 Equals() [1/2]

```
bool Rti.Types.Builtin.KeyedStringTopicType.Equals (
            KeyedStringTopicType other )  [inline]
```

Compares for equality

9.146.3.3 Equals() [2/2]

```
override bool Rti.Types.Builtin.KeyedStringTopicType.Equals (
            object obj )
```

Compares for equality

9.146.3.4 ToString()

```
override string Rti.Types.Builtin.KeyedStringTopicType.ToString ( )
```

Converts to string

9.146.4 Property Documentation

9.146.4.1 Key

```
string Rti.Types.Builtin.KeyedStringTopicType.Key = string.Empty  [get], [set]
```

The key (its maximum size is 1024 bytes in UTF-8 format)

9.146.4.2 Value

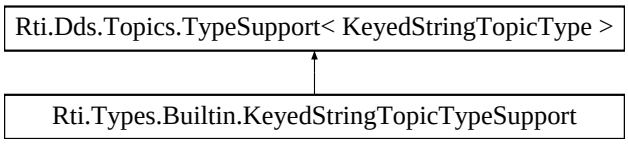
```
string Rti.Types.Builtin.KeyedStringTopicType.Value = string.Empty  [get], [set]
```

The value (its maximum size is 1024 bytes in UTF-8 format)

9.147 Rti.Types.Builtin.KeyedStringTopicTypeSupport Class Reference

The type support for **KeyedStringTopicType** (p. 691).

Inheritance diagram for Rti.Types.Builtin.KeyedStringTopicTypeSupport:



Public Member Functions

- **KeyedStringTopicTypeSupport** ()
  *For internal use only. Use **Instance** (p. 695) instead.*

Properties

- static **KeyedStringTopicTypeSupport Instance** [get]
  Gets the singleton

Additional Inherited Members

9.147.1 Detailed Description

The type support for **KeyedStringTopicType** (p. 691).

9.147.2 Constructor & Destructor Documentation

9.147.2.1 KeyedStringTopicTypeSupport()

```
Rti.Types.Builtin.KeyedStringTopicTypeSupport.KeyedStringTopicTypeSupport ( )  [inline]
```

For internal use only. Use **Instance** (p. 695) instead.

9.147.3 Property Documentation

9.147.3.1 Instance

KeyedStringTopicTypeSupport Rti.Types.Builtin.KeyedStringTopicTypeSupport.Instance [static], [get]

Initial value:
=

```
ServiceEnvironment.Instance.Internal.TypeSupportFactory.CreateTypeSupport<KeyedStringTopicTypeSupport,
KeyedStringTopicType>()
```

Gets the singleton

9.148 Rti.Dds.Core.Policy.LatencyBudget Class Reference

Provides a hint as to the maximum acceptable delay from the time the data is written to the time it is received by the subscribing applications.

Inherits IEquatable< LatencyBudget >.

Public Member Functions

- **LatencyBudget** (**Duration** duration)
  Creates a new instance
- **LatencyBudget With** (Action< **LatencyBudgetBuilder** > build)
  *Creates a new **LatencyBudget** (p. 695) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**LatencyBudget** other)
  Compares for equality

Properties

- **Duration Duration** [get]

  Duration of the maximum acceptable delay.
- static **LatencyBudget Default** [get]

  *Singleton containing the default value of a **LatencyBudget** (p. 695)*

9.148.1 Detailed Description

Provides a hint as to the maximum acceptable delay from the time the data is written to the time it is received by the subscribing applications.

9.148.2 Constructor & Destructor Documentation

9.148.2.1 LatencyBudget()

```
Rti.Dds.Core.Policy.LatencyBudget.LatencyBudget (
              Duration duration )
```

Creates a new instance

Parameters

duration	The value for **Duration** (p. 697)

9.148.3 Member Function Documentation

9.148.3.1 With()

```
LatencyBudget Rti.Dds.Core.Policy.LatencyBudget.With (
            Action< LatencyBudgetBuilder > build )  [inline]
```

Creates a new **LatencyBudget** (p. 695) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **LatencyBudget** (p. 695).

Returns

A new **LatencyBudget** (p. 695) with the changes applied by the Action

9.148.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.LatencyBudget.GetHashCode ( )  [inline]
```

Gets the hash code

9.148.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.LatencyBudget.Equals (
            object other )
```

Compares for equality

9.148.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.LatencyBudget.Equals (
             LatencyBudget other )  [inline]
```

Compares for equality

9.148.4 Property Documentation

9.148.4.1 Duration

```
Duration Rti.Dds.Core.Policy.LatencyBudget.Duration  [get]
```

Duration of the maximum acceptable delay.

The full documentation is available in the C API: DDS_LatencyBudgetQosPolicy_duration

9.148.4.2 Default

```
LatencyBudget Rti.Dds.Core.Policy.LatencyBudget.Default  [static], [get]
```

Singleton containing the default value of a **LatencyBudget** (p. 695)

9.149 Rti.Dds.Core.Policy.LatencyBudgetBuilder Class Reference

A modifiable type used to create an immutable **LatencyBudget** (p. 695)

Public Member Functions

- **LatencyBudgetBuilder** (**LatencyBudget** data)
  Creates a builder with the values of an existing immutable instance
- **LatencyBudget Build** ()
  *Creates a new **LatencyBudget** (p. 695) immutable object from this one.*

Properties

- **Duration Duration** `[get, set]`
  Duration of the maximum acceptable delay.

9.149.1 Detailed Description

A modifiable type used to create an immutable **LatencyBudget** (p. 695)

9.149.2 Constructor & Destructor Documentation

9.149.2.1 LatencyBudgetBuilder()

```
Rti.Dds.Core.Policy.LatencyBudgetBuilder.LatencyBudgetBuilder (
            LatencyBudget data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.149.3 Member Function Documentation

9.149.3.1 Build()

```
LatencyBudget Rti.Dds.Core.Policy.LatencyBudgetBuilder.Build ( )
```

Creates a new **LatencyBudget** (p. 695) immutable object from this one.

9.149.4 Property Documentation

9.149.4.1 Duration

```
Duration Rti.Dds.Core.Policy.LatencyBudgetBuilder.Duration  [get], [set]
```

Duration of the maximum acceptable delay.

The full documentation is available in the C API: `DDS_LatencyBudgetQosPolicy_duration`

9.150 Omg.Dds.Core.LengthAuto Class Reference

A special value indicating that the actual length will be automatically resolved.

Static Public Attributes

- const int **Value** = -2
  The constant value

9.150.1 Detailed Description

A special value indicating that the actual length will be automatically resolved.

9.150.2 Field Documentation

9.150.2.1 Value

```
const int Omg.Dds.Core.LengthAuto.Value = -2  [static]
```

The constant value

9.151 Omg.Dds.Core.LengthUnlimited Class Reference

A special value indicating an unlimited quantity.

Static Public Attributes

- const int **Value** = -1
  The constant value

9.151.1 Detailed Description

A special value indicating an unlimited quantity.

9.151.2 Field Documentation

9.151.2.1 Value

```
const int Omg.Dds.Core.LengthUnlimited.Value = -1  [static]
```

The constant value

9.152 Rti.Dds.Core.Policy.Lifespan Class Reference

Specifies how long the data written by a Publication.DataWriter<T> is considered valid.

Inherits IEquatable< Lifespan >.

Public Member Functions

- **Lifespan** (**Duration** duration)
  Creates a new instance
- **Lifespan With** (Action< **LifespanBuilder** > build)
  *Creates a new **Lifespan** (p. 700) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**Lifespan** other)
  Compares for equality

Properties

- **Duration Duration** [get]

  Maximum duration for the data's validity.
- static **Lifespan Default** [get]

  *Singleton containing the default value of a **Lifespan** (p. 700)*

9.152.1 Detailed Description

Specifies how long the data written by a Publication.DataWriter<T> is considered valid.

The full documentation is available in the C API: DDS_LifespanQosPolicy

9.152.2 Constructor & Destructor Documentation

9.152.2.1 Lifespan()

```
Rti.Dds.Core.Policy.Lifespan.Lifespan (
            Duration duration )
```

Creates a new instance

Parameters

duration	The value for **Duration** (p. 702)

9.152.3 Member Function Documentation

9.152.3.1 With()

```
Lifespan Rti.Dds.Core.Policy.Lifespan.With (
          Action< LifespanBuilder > build ) [inline]
```

Creates a new **Lifespan** (p. 700) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Lifespan** (p. 700).

Returns

A new **Lifespan** (p. 700) with the changes applied by the Action

9.152.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Lifespan.GetHashCode ( )  [inline]
```

Gets the hash code

9.152.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Lifespan.Equals (
            object other )
```

Compares for equality

9.152.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Lifespan.Equals (
             Lifespan other )  [inline]
```

Compares for equality

9.152.4 Property Documentation

9.152.4.1 Duration

```
Duration Rti.Dds.Core.Policy.Lifespan.Duration  [get]
```

Maximum duration for the data's validity.

The full documentation is available in the C API: DDS_LifespanQosPolicy_duration

9.152.4.2 Default

```
Lifespan Rti.Dds.Core.Policy.Lifespan.Default  [static], [get]
```

Singleton containing the default value of a **Lifespan** (p. 700)

9.153 Rti.Dds.Core.Policy.LifespanBuilder Class Reference

A modifiable type used to create an immutable **Lifespan** (p. 700)

Public Member Functions

- **LifespanBuilder** (**Lifespan** data)
  Creates a builder with the values of an existing immutable instance
- **Lifespan Build** ()
  *Creates a new **Lifespan** (p. 700) immutable object from this one.*

Properties

- **Duration Duration** [get, set]
  Maximum duration for the data's validity.

9.153.1 Detailed Description

A modifiable type used to create an immutable **Lifespan** (p. 700)

9.153.2 Constructor & Destructor Documentation

9.153.2.1 LifespanBuilder()

```
Rti.Dds.Core.Policy.LifespanBuilder.LifespanBuilder (
            Lifespan data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.153.3 Member Function Documentation

9.153.3.1 Build()

```
Lifespan Rti.Dds.Core.Policy.LifespanBuilder.Build ( )
```

Creates a new **Lifespan** (p. 700) immutable object from this one.

9.153.4 Property Documentation

9.153.4.1 Duration

```
Duration Rti.Dds.Core.Policy.LifespanBuilder.Duration [get], [set]
```

Maximum duration for the data's validity.

The full documentation is available in the C API: `DDS_LifespanQosPolicy_duration`

9.154 Rti.Dds.Core.Policy.Liveliness Class Reference

Configures the mechanism that allows Subscription.DataReader<T> entities to detect when Publication.DataWriter<↩ T> entities become disconnected or "dead."

Inherits IEquatable< Liveliness >.

Public Member Functions

- **Liveliness With** (Action< **LivelinessBuilder** > build)

  *Creates a new **Liveliness** (p. 704) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Liveliness** other)

  Compares for equality

Properties

- **LivelinessKind Kind** [get]

  The kind of liveliness desired.
- **Duration LeaseDuration** [get]

  The duration within which a Publication.DataWriter<T> must be asserted, or else it is assumed to be not alive.
- int **AssertionsPerLeaseDuration** [get]

  *The number of assertions a Publication.DataWriter<T> will send during a its **LeaseDuration** (p. 706).*
- static **Liveliness Default** [get]

  *Singleton containing the default value of a **Liveliness** (p. 704)*

9.154.1 Detailed Description

Configures the mechanism that allows Subscription.DataReader<T> entities to detect when Publication.DataWriter<T> entities become disconnected or "dead."

9.154.2 Member Function Documentation

9.154.2.1 With()

```
Liveliness Rti.Dds.Core.Policy.Liveliness.With (
            Action<  LivelinessBuilder > build )  [inline]
```

Creates a new **Liveliness** (p. 704) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Liveliness** (p. 704).

Returns

A new **Liveliness** (p. 704) with the changes applied by the Action

9.154.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Liveliness.GetHashCode ( )  [inline]
```

Gets the hash code

9.154.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Liveliness.Equals (
            object other )
```

Compares for equality

9.154.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Liveliness.Equals (
            Liveliness other )  [inline]
```

Compares for equality

9.154.3 Property Documentation

9.154.3.1 Kind

LivelinessKind Rti.Dds.Core.Policy.Liveliness.Kind [get]

The kind of liveliness desired.

The full documentation is available in the C API: DDS_LivelinessQosPolicy_kind

9.154.3.2 LeaseDuration

Duration Rti.Dds.Core.Policy.Liveliness.LeaseDuration [get]

The duration within which a Publication.DataWriter<T> must be asserted, or else it is assumed to be not alive.

The full documentation is available in the C API: DDS_LivelinessQosPolicy_lease_duration

9.154.3.3 AssertionsPerLeaseDuration

int Rti.Dds.Core.Policy.Liveliness.AssertionsPerLeaseDuration [get]

The number of assertions a Publication.DataWriter<T> will send during a its **LeaseDuration** (p. 706).

The full documentation is available in the C API: DDS_LivelinessQosPolicy_assertions_per_↩ lease_duration

9.154.3.4 Default

Liveliness Rti.Dds.Core.Policy.Liveliness.Default [static], [get]

Singleton containing the default value of a **Liveliness** (p. 704)

9.155 Rti.Dds.Core.Policy.LivelinessBuilder Class Reference

A modifiable type used to create an immutable **Liveliness** (p. 704)

Public Member Functions

- **LivelinessBuilder** (**Liveliness** data)

  Creates a builder with the values of an existing immutable instance
- **Liveliness Build** ()

  *Creates a new **Liveliness** (p. 704) immutable object from this one.*

Properties

- **LivelinessKind Kind** `[get, set]`

  The kind of liveliness desired.
- **Duration LeaseDuration** `[get, set]`

  The duration within which a Publication.DataWriter<T> must be asserted, or else it is assumed to be not alive.
- int **AssertionsPerLeaseDuration** `[get, set]`

  *The number of assertions a Publication.DataWriter<T> will send during a its **LeaseDuration** (p. 708).*

9.155.1 Detailed Description

A modifiable type used to create an immutable **Liveliness** (p. 704)

9.155.2 Constructor & Destructor Documentation

9.155.2.1 LivelinessBuilder()

```
Rti.Dds.Core.Policy.LivelinessBuilder.LivelinessBuilder (
            Liveliness data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.155.3 Member Function Documentation

9.155.3.1 Build()

```
Liveliness Rti.Dds.Core.Policy.LivelinessBuilder.Build ( )
```

Creates a new **Liveliness** (p. 704) immutable object from this one.

9.155.4 Property Documentation

9.155.4.1 Kind

```
LivelinessKind Rti.Dds.Core.Policy.LivelinessBuilder.Kind  [get], [set]
```

The kind of liveliness desired.

The full documentation is available in the C API: DDS_LivelinessQosPolicy_kind

9.155.4.2 LeaseDuration

```
Duration Rti.Dds.Core.Policy.LivelinessBuilder.LeaseDuration  [get], [set]
```

The duration within which a Publication.DataWriter<T> must be asserted, or else it is assumed to be not alive.

The full documentation is available in the C API: DDS_LivelinessQosPolicy_lease_duration

9.155.4.3 AssertionsPerLeaseDuration

```
int Rti.Dds.Core.Policy.LivelinessBuilder.AssertionsPerLeaseDuration  [get], [set]
```

The number of assertions a Publication.DataWriter<T> will send during a its **LeaseDuration** (p. 708).

The full documentation is available in the C API: DDS_LivelinessQosPolicy_assertions_per_↩ lease_duration

9.156 Rti.Dds.Core.Status.LivelinessChangedStatus Class Reference

Indicates that the liveliness of one or more matched Publication.DataWriter<T> has changed.

Inherits IEquatable< LivelinessChangedStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code.
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**LivelinessChangedStatus** other)

  Compares for equality.
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **AliveCount** `[get]`

  Number of matched Publication.DataWriter<T> that are currently alive.
- **EventCount**< int > **NotAliveCount** `[get]`

  Number of matched Publication.DataWriter<T> that are not currently alive.
- **InstanceHandle** **LastPublicationHandle** `[get]`

  *This **InstanceHandle** (p. 661) can be used to look up which remote Publication.DataWriter<T> was the last to cause this Subscription.DataReader<T>'s status to change, using **Subscription.AnyDataReader.GetMatchedPublicationData()** (p. 152).*

9.156.1 Detailed Description

Indicates that the liveliness of one or more matched Publication.DataWriter<T> has changed.

The full documentation is available in the C API: `DDS_LivelinessChangedStatus`

9.156.2 Member Function Documentation

9.156.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.LivelinessChangedStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.156.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.LivelinessChangedStatus.Equals (
            object other )
```

Compares for equality.

9.156.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.LivelinessChangedStatus.Equals (
             LivelinessChangedStatus other )  [inline]
```

Compares for equality.

9.156.2.4 ToString()

```
override string Rti.Dds.Core.Status.LivelinessChangedStatus.ToString ( )
```

Returns a readable summary of the status

9.156.3 Property Documentation

9.156.3.1 AliveCount

```
EventCount<int> Rti.Dds.Core.Status.LivelinessChangedStatus.AliveCount  [get]
```

Number of matched Publication.DataWriter<T> that are currently alive.

The full documentation is available in the C API: DDS_LivelinessChangedStatus_alive_count

9.156.3.2 NotAliveCount

```
EventCount<int> Rti.Dds.Core.Status.LivelinessChangedStatus.NotAliveCount  [get]
```

Number of matched Publication.DataWriter<T> that are not currently alive.

The full documentation is available in the C API: DDS_LivelinessChangedStatus_not_alive_count

9.156.3.3 LastPublicationHandle

```
InstanceHandle Rti.Dds.Core.Status.LivelinessChangedStatus.LastPublicationHandle [get]
```

This **InstanceHandle** (p. 661) can be used to look up which remote Publication.DataWriter<T> was the last to cause this Subscription.DataReader<T>'s status to change, using **Subscription.AnyDataReader.GetMatched↩ PublicationData()** (p. 152).

*The full documentation is available in the C API:*DDS_LivelinessChangedStatus

9.157 Rti.Dds.Core.Status.LivelinessLostStatus Class Reference

The liveliness that the Publication.DataWriter<T> has committed to through its **Policy.Liveliness** (p. 704) was not respected, thus Subscription.DataReader<T> entities will consider the Publication.DataWriter<T> as no longer alive.

Inherits IEquatable< LivelinessLostStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**LivelinessLostStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  Total cumulative number of times that a previously-alive Publication.DataWriter<T> became not alive due to a failure to actively signal its liveliness within the offered liveliness period.

9.157.1 Detailed Description

The liveliness that the Publication.DataWriter<T> has committed to through its **Policy.Liveliness** (p. 704) was not respected, thus Subscription.DataReader<T> entities will consider the Publication.DataWriter<T> as no longer alive.

9.157.2 Member Function Documentation

9.157.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.LivelinessLostStatus.GetHashCode ( )
```

Gets the hash code

9.157.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.LivelinessLostStatus.Equals (
            object other )
```

Compares for equality

9.157.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.LivelinessLostStatus.Equals (
             LivelinessLostStatus other )  [inline]
```

Compares for equality

9.157.2.4 ToString()

```
override string Rti.Dds.Core.Status.LivelinessLostStatus.ToString ( )
```

Returns a readable summary of the status

9.157.3 Property Documentation

9.157.3.1 TotalCount

```
EventCount<int> Rti.Dds.Core.Status.LivelinessLostStatus.TotalCount  [get]
```

Total cumulative number of times that a previously-alive Publication.DataWriter<T> became not alive due to a failure to actively signal its liveliness within the offered liveliness period.

The full documentation is available in the C API: DDS_LivelinessLostStatus_total_count

9.158 Rti.Types.Dynamic.LoanedDynamicData Struct Reference

Gives temporary access to a member of another **DynamicData** (p. 564) object.

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()
  Returns the loan.

Properties

- **DynamicData Data** [get]
  Gets the loaned data sample.
- **DynamicData Parent** [get]
  *Gets the sample where **Data** (p. 713) is loaned from.*

9.158.1 Detailed Description

Gives temporary access to a member of another **DynamicData** (p. 564) object.

9.158.2 Member Function Documentation

9.158.2.1 Dispose()

```
void Rti.Types.Dynamic.LoanedDynamicData.Dispose ( )  [inline]
```

Returns the loan.

9.158.3 Property Documentation

9.158.3.1 Data

```
DynamicData Rti.Types.Dynamic.LoanedDynamicData.Data  [get]
```

Gets the loaned data sample.

9.158.3.2 Parent

```
DynamicData Rti.Types.Dynamic.LoanedDynamicData.Parent  [get]
```

Gets the sample where **Data** (p. 713) is loaned from.

9.159 Rti.Dds.Subscription.LoanedSample< T > Class Template Reference

Contains the data and the information associated with a sample, which are only valid until their LoanedSamples<T> container is Disposed

Public Member Functions

- void **Deconstruct** (out T data, out **SampleInfo** info)

  *Allows deconstructing a **LoanedSample** (p. 714) into a tuple with the data and the info.*
- override string **ToString** ()

  Returns `Data.ToString()` when `Info.ValidData` is true; otherwise it returns a readable summary of the `Info`.

Properties

- T **Data** `[get]`

  Gets the data
- **SampleInfo Info** `[get]`

  Gets the information about this sample

9.159.1 Detailed Description

Contains the data and the information associated with a sample, which are only valid until their LoanedSamples<T> container is Disposed

Any reference contained within a **LoanedSample** (p. 714) is only valid until the corresponding LoanedSamples<↩ T> has been Disposed. Attempting to access any data within the sample after that is undefined behavior.

Template Parameters

T	The topic type of the data

9.159.2 Member Function Documentation

9.159.2.1 Deconstruct()

```
void  Rti.Dds.Subscription.LoanedSample< T >.Deconstruct (
            out T data,
            out  SampleInfo info )
```

Allows deconstructing a **LoanedSample** (p. 714) into a tuple with the data and the info.

Parameters

data	Output parameter assigned this.Data
info	Output parameter assigned this.Info

For example:

```
using var samples = reader.Take();
foreach (var (data, info) in samples)
{
    if (info.ValidData)
    {
        Console.WriteLine(data);
    }
}
```

9.159.2.2 ToString()

```
override string  Rti.Dds.Subscription.LoanedSample< T >.ToString ( )
```

Returns `Data.ToString()` when `Info.ValidData` is true; otherwise it returns a readable summary of the `Info`.

9.159.3 Property Documentation

9.159.3.1 Data

```
T  Rti.Dds.Subscription.LoanedSample< T >.Data  [get]
```

Gets the data

9.159.3.2 Info

```
SampleInfo  Rti.Dds.Subscription.LoanedSample< T >.Info  [get]
```

Gets the information about this sample

9.160 Rti.Dds.Subscription.LoanedSamples< T > Class Template Reference

Provides temporary access to a collection of samples (data and info).

Inherits IEnumerable< LoanedSample< T > >, and IDisposable.

Public Member Functions

- IEnumerator< **LoanedSample**< T > > **GetEnumerator** ()

  Provides access to the samples
- void **Dispose** ()

  *Returns the loaned samples back to the **DataReader*** (p. 243).
- IEnumerable< T > **ValidData** ()

  *Provides access only to the data samples with valid data, skipping samples such that **SampleInfo.ValidData*** (p. 1027) *is false.*
- T **GetDataAt** (int index)

  Equivalent to `this[index].Data`

Properties

- int **Count** `[get]`

  Returns the number of samples
- **LoanedSample**< T > **this[uint index]** `[get]`

  Provides indexed access to the samples

9.160.1 Detailed Description

Provides temporary access to a collection of samples (data and info).

Template Parameters

T	The topic-type of the DataReader<T>

This collection needs to be **explicitly disposed** when it is no longer needed (typically with a `using` statement). The underlying middleware resources it uses will not be released by the garbage collector.

After disposing the collection, its elements and all their references are no longer valid and cannot be accessed. To keep the data around, you can copy it.

See also

Reading data (p. 44) for code examples

9.160.2 Member Function Documentation

9.160.2.1 GetEnumerator()

```
IEnumerator< LoanedSample< T > > Rti.Dds.Subscription.LoanedSamples< T >.GetEnumerator ( )
[inline]
```

Provides access to the samples

9.160.2.2 Dispose()

```
void Rti.Dds.Subscription.LoanedSamples< T >.Dispose ( ) [inline]
```

Returns the loaned samples back to the **DataReader** (p. 243).

9.160.2.3 ValidData()

```
IEnumerable< T > Rti.Dds.Subscription.LoanedSamples< T >.ValidData ( )
```

Provides access only to the data samples with valid data, skipping samples such that **SampleInfo.ValidData** (p. 1027) is false.

9.160.2.4 GetDataAt()

```
T Rti.Dds.Subscription.LoanedSamples< T >.GetDataAt (
            int index ) [inline]
```

Equivalent to `this[index].Data`

9.160.3 Property Documentation

9.160.3.1 Count

```
int  Rti.Dds.Subscription.LoanedSamples< T >.Count  [get]
```

Returns the number of samples

9.160.3.2 this[uint index]

```
LoanedSample<T>  Rti.Dds.Subscription.LoanedSamples< T >.this[uint index]  [get]
```

Provides indexed access to the samples

9.161 Rti.Dds.Core.Locator Class Reference

Type used to represent the addressing information needed to send a message to an RTPS Endpoint using one of the supported transports.

Inherits IEquatable< Locator >.

Public Member Functions

- **Locator With** (Action< **LocatorBuilder** > build)

  *Creates a new **Locator** (p. 718) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Locator** other)

  Compares for equality

Static Public Attributes

- const int **InvalidKind** = -1

  ***Locator** (p. 718) of this kind is invalid.*
- const uint **InvalidPort** = 0

  An invalid port.
- const int **UdPv4Kind** = 1

  A locator for a UDPv4 address.
- const int **UdPv4WanKind** = 0x01000001

  A locator for a UDPv4 WAN address.
- const int **ShmemKind** = 0x01000000

  A locator for an address accessed via shared memory.
- const int **Shmem510Kind** = 2

  A locator for an address accessed via shared memory for RTI Connext 5.1.0 and earlier.
- const int **UdPv6Kind** = 2

  A locator for a UDPv6 address.
- const int **UdPv6510Kind** = 5

  A locator for a UDPv6 address for RTI Connext 5.1.0 and earlier.
- const int **ReservedKind** = 1000

  ***Locator** (p. 718) of this kind is reserved.*

Properties

- static **Locator** **LocatorInvalid** [get]

  An invalid locator.
- static ImmutableList< byte > **InvalidAddress** [get]

  An invalid address.
- int **Kind** [get]

  The kind of locator.
- uint **Port** [get]

  The port number.
- ImmutableList< byte > **Address** [get]

  The IP address.
- static **Locator** **Default** [get]

  *Singleton containing the default value of a **Locator** (p. 718)*

9.161.1 Detailed Description

Type used to represent the addressing information needed to send a message to an RTPS Endpoint using one of the supported transports.

The full documentation is available in the C API: DDS_Locator_t

9.161.2 Member Function Documentation

9.161.2.1 With()

```
Locator Rti.Dds.Core.Locator.With (
            Action<  LocatorBuilder > build )  [inline]
```

Creates a new **Locator** (p. 718) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Locator** (p. 718).

Returns

A new **Locator** (p. 718) with the changes applied by the Action

9.161.2.2 GetHashCode()

```
override int Rti.Dds.Core.Locator.GetHashCode ( )  [inline]
```

Gets the hash code

9.161.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Locator.Equals (
            object other )
```

Compares for equality

9.161.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Locator.Equals (
             Locator other )  [inline]
```

Compares for equality

9.161.3 Field Documentation

9.161.3.1 InvalidKind

```
const int Rti.Dds.Core.Locator.InvalidKind = -1  [static]
```

Locator (p. 718) of this kind is invalid.

*The full documentation is available in the C API:*DDS_Locator_t_KIND_INVALID

9.161.3.2 InvalidPort

```
const uint Rti.Dds.Core.Locator.InvalidPort = 0  [static]
```

An invalid port.

*The full documentation is available in the C API:*DDS_Locator_t_PORT_INVALID

9.161.3.3 UdPv4Kind

```
const int Rti.Dds.Core.Locator.UdPv4Kind = 1  [static]
```

A locator for a UDPv4 address.

The full documentation is available in the C API: DDSLocator_tLOCATOR_KIND_UDPv4

9.161.3.4 UdPv4WanKind

```
const int Rti.Dds.Core.Locator.UdPv4WanKind = 0x01000001  [static]
```

A locator for a UDPv4 WAN address.

The full documentation is available in the C API: DDSLocator_tLOCATOR_KIND_UDPv4_WAN

9.161.3.5 ShmemKind

```
const int Rti.Dds.Core.Locator.ShmemKind = 0x01000000  [static]
```

A locator for an address accessed via shared memory.

The full documentation is available in the C API: DDS_Locator_t_KIND_SHMEM

9.161.3.6 Shmem510Kind

```
const int Rti.Dds.Core.Locator.Shmem510Kind = 2  [static]
```

A locator for an address accessed via shared memory for RTI Connext 5.1.0 and earlier.

The full documentation is available in the C API: DDS_Locator_t_KIND_SHMEM_510

9.161.3.7 UdPv6Kind

```
const int Rti.Dds.Core.Locator.UdPv6Kind = 2  [static]
```

A locator for a UDPv6 address.

The full documentation is available in the C API: DDSLocator_tLOCATOR_KIND_UDPv6

9.161.3.8 UdPv6510Kind

```
const int Rti.Dds.Core.Locator.UdPv6510Kind = 5  [static]
```

A locator for a UDPv6 address for RTI Connext 5.1.0 and earlier.

The full documentation is available in the C API: DDSLocator_tLOCATOR_KIND_UDPv6_510

9.161.3.9 ReservedKind

```
const int Rti.Dds.Core.Locator.ReservedKind = 1000  [static]
```

Locator (p. 718) of this kind is reserved.

The full documentation is available in the C API: DDSLocator_tLOCATOR_KIND_RESERVED

9.161.4 Property Documentation

9.161.4.1 LocatorInvalid

```
Locator Rti.Dds.Core.Locator.LocatorInvalid  [static], [get]
```

An invalid locator.

The full documentation is available in the C API: DDSLocator_tLOCATOR_INVALID

9.161.4.2 InvalidAddress

```
ImmutableList<byte> Rti.Dds.Core.Locator.InvalidAddress  [static], [get]
```

An invalid address.

The full documentation is available in the C API: DDS_Locator_t_ADDRESS_INVALID

9.161.4.3 Kind

```
int Rti.Dds.Core.Locator.Kind  [get]
```

The kind of locator.

The full documentation is available in the C API: DDS_Locator_t_kind

9.161.4.4 Port

```
uint Rti.Dds.Core.Locator.Port  [get]
```

The port number.

The full documentation is available in the C API: DDS_Locator_t_port

9.161.4.5 Address

```
ImmutableList<byte> Rti.Dds.Core.Locator.Address [get]
```

The IP address.

The full documentation is available in the C API: `DDS_Locator_t_address`

9.161.4.6 Default

```
Locator Rti.Dds.Core.Locator.Default [static], [get]
```

Singleton containing the default value of a **Locator** (p. 718)

9.162 Rti.Dds.Core.LocatorBuilder Class Reference

A modifiable type used to create an immutable **Locator** (p. 718)

Public Member Functions

- **LocatorBuilder** (**Locator** data)
  Creates a builder with the values of an existing immutable instance
- **Locator Build** ()
  *Creates a new **Locator** (p. 718) immutable object from this one.*

Properties

- int **Kind** `[get, set]`
  The kind of locator.
- uint **Port** `[get, set]`
  the port number
- ImmutableList< byte > **Address** `[get, set]`
  The IP address.

9.162.1 Detailed Description

A modifiable type used to create an immutable **Locator** (p. 718)

9.162.2 Constructor & Destructor Documentation

9.162.2.1 LocatorBuilder()

```
Rti.Dds.Core.LocatorBuilder.LocatorBuilder (
            Locator data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.162.3 Member Function Documentation

9.162.3.1 Build()

```
Locator Rti.Dds.Core.LocatorBuilder.Build ( )
```

Creates a new **Locator** (p. 718) immutable object from this one.

9.162.4 Property Documentation

9.162.4.1 Kind

```
int Rti.Dds.Core.LocatorBuilder.Kind  [get], [set]
```

The kind of locator.

The full documentation is available in the C API: DDS_Locator_t_kind

9.162.4.2 Port

```
uint Rti.Dds.Core.LocatorBuilder.Port  [get], [set]
```

the port number

The full documentation is available in the C API: DDS_Locator_t_port

9.162.4.3 Address

```
ImmutableList<byte> Rti.Dds.Core.LocatorBuilder.Address  [get], [set]
```

The IP address.

The full documentation is available in the C API: DDS_Locator_t_address

9.163 Rti.Dds.Core.Policy.LocatorFilter Class Reference

Specifies the configuration of an individual channel within a **MultiChannel** (p. 796) Publication.DataWriter<T>.

Inherits IEquatable< LocatorFilter >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**LocatorFilter** other)

  Compares for equality

Properties

- ImmutableList< **Locator** > **Locators** `[get]`

  *Sequence containing the **Locator** (p. 718)'s used to specify the multicast address locators of an individual channel within a **MultiChannel** (p. 796) Publication.DataWriter<T>.*
- string **FilterExpression** `[get]`

  A logical expression used to determine the data that will be published in the channel.

9.163.1 Detailed Description

Specifies the configuration of an individual channel within a **MultiChannel** (p. 796) Publication.DataWriter<T>.

The full documentation is available in the C API: `DDS_LocatorFilter_t`

9.163.2 Member Function Documentation

9.163.2.1 GetHashCode()

```
override int Rti.Dds.Core.Policy.LocatorFilter.GetHashCode ( )  [inline]
```

Gets the hash code

9.163.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.LocatorFilter.Equals (
            object other )
```

Compares for equality

9.163.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.LocatorFilter.Equals (
             LocatorFilter other )  [inline]
```

Compares for equality

9.163.3 Property Documentation

9.163.3.1 Locators

```
ImmutableList< Locator> Rti.Dds.Core.Policy.LocatorFilter.Locators  [get]
```

Sequence containing the **Locator** (p. 718)'s used to specify the multicast address locators of an individual channel within a **MultiChannel** (p. 796) Publication.DataWriter<T>.

The full documentation is available in the C API: DDS_LocatorFilter_t_locators

9.163.3.2 FilterExpression

```
string Rti.Dds.Core.Policy.LocatorFilter.FilterExpression  [get]
```

A logical expression used to determine the data that will be published in the channel.

The full documentation is available in the C API: DDS_LocatorFilter_t_filter_expression

9.164 Rti.Dds.Core.Policy.LocatorFilters Class Reference

This policy is only applicable to the built-in topic for a **Publication** (p. 111)

Inherits IEquatable< LocatorFilters >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**LocatorFilters** other)

  Compares for equality

Properties

- ImmutableList< **LocatorFilter** > **Filters** `[get]`

  *A sequence of **LocatorFilters** (p. 726). Each **LocatorFilters** (p. 726) reports the configuration of a single channel of a **MultiChannel** (p. 796) DataWriter.*
- string **FilterName** `[get]`

  *Name of the filter class used to describe the filter expressions of a **MultiChannel** (p. 796) Publication.DataWriter<T>*

9.164.1 Detailed Description

This policy is only applicable to the built-in topic for a **Publication** (p. 111)

The full documentation is available in the C API: `DDS_LocatorFilterQosPolicy`

9.164.2 Member Function Documentation

9.164.2.1 GetHashCode()

```
override int Rti.Dds.Core.Policy.LocatorFilters.GetHashCode ( )  [inline]
```

Gets the hash code

9.164.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.LocatorFilters.Equals (
            object other )
```

Compares for equality

9.164.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.LocatorFilters.Equals (
            LocatorFilters other )  [inline]
```

Compares for equality

9.164.3 Property Documentation

9.164.3.1 Filters

```
ImmutableList< LocatorFilter> Rti.Dds.Core.Policy.LocatorFilters.Filters  [get]
```

A sequence of **LocatorFilters** (p. 726). Each **LocatorFilters** (p. 726) reports the configuration of a single channel of a **MultiChannel** (p. 796) DataWriter.

The full documentation is available in the C API: DDS_LocatorFilterQosPolicy_locator_filters

9.164.3.2 FilterName

```
string Rti.Dds.Core.Policy.LocatorFilters.FilterName  [get]
```

Name of the filter class used to describe the filter expressions of a **MultiChannel** (p. 796) Publication.DataWriter<T>

The full documentation is available in the C API: DDS_LocatorFilterQosPolicy_filter_name

9.165 Rti.Config.Logger Class Reference

The singleton used to configure RTI Connext logging

Public Member Functions

- void **SetVerbosity** (**Verbosity** verbosity)

  Set the verbosity at which RTI Connext will log diagnostic information.
- void **SetVerbosity** (**Verbosity** verbosity, **LogCategory** category)

  Set the verbosity at which RTI Connext will log diagnostic information in the given category.
- **Verbosity GetVerbosity** ()

  Get the verbosity at which RTI Connext is currently logging diagnostic information.
- **Verbosity GetVerbosity** (**LogCategory** category)

  Get the verbosity at which RTI Connext is currently logging diagnostic information in the given category.
- void **SetPrintFormat** (**LogPrintFormat** format)

  Set the message format that RTI Connext will use to log diagnostic information for all the log levels, except for NDDS_↩ CONFIG_LOG_LEVEL_FATAL_ERROR.
- void **SetPrintFormat** (**LogPrintFormat** format, **LogLevel** level)

  Set the message format, by log level, that RTI Connext will use to log diagnostic information.
- **LogPrintFormat GetPrintFormat** ()

  Get the current message format for the log level NDDS_CONFIG_LOG_LEVEL_ERROR.
- **LogPrintFormat GetPrintFormat** (**LogLevel** level)

  Get the current message format, by log level, that RTI Connext is using to log diagnostic information.
- void **SetOutputFile** (string filePath)

  Set the file to which the logged output is redirected.
- void **SetOutputFileSet** (string filePrefix, string fileSuffix, int maxCapacity, int maxFiles=LengthUnlimited.Value)

  Configure a set of files to redirect the logged output
- void **Emergency** (string msg)

  Logs an emergency message
- void **Alert** (string msg)

  Logs an alert message
- void **Critical** (string msg)

  Logs an critical message
- void **Error** (string msg)

  Logs an error message
- void **Warning** (string msg)

  Logs an warning message
- void **Notice** (string msg)

  Logs an notice message
- void **Informational** (string msg)

  Logs an informational message
- void **Debug** (string msg)

  Logs an debug message

Properties

- static **Logger Instance** = new **Logger**() `[get]`

  *Get the singleton **Logger** (p. 728) instance*
- **MessageLoggedEventHandler MessageLogged**

  Event triggered whenever RTI Connext logs a message.

9.165.1 Detailed Description

The singleton used to configure RTI Connext logging

For code examples see **Configuring logging** (p. 55).

The full documentation is available in the C API: `NDDSConfigLogger`

9.165.2 Member Function Documentation

9.165.2.1 SetVerbosity() [1/2]

```
void Rti.Config.Logger.SetVerbosity (
              Verbosity verbosity )
```

Set the verbosity at which RTI Connext will log diagnostic information.

The full documentation is available in the C API: `NDDSConfigLogger_set_verbosity`

9.165.2.2 SetVerbosity() [2/2]

```
void Rti.Config.Logger.SetVerbosity (
              Verbosity verbosity,
              LogCategory category )
```

Set the verbosity at which RTI Connext will log diagnostic information in the given category.

The full documentation is available in the C API: `NDDSConfigLogger_set_verbosity_by_category`

9.165.2.3 GetVerbosity() [1/2]

```
Verbosity Rti.Config.Logger.GetVerbosity ( )
```

Get the verbosity at which RTI Connext is currently logging diagnostic information.

The full documentation is available in the C API: `NDDSConfigLogger_get_verbosity`

9.165.2.4 GetVerbosity() [2/2]

```
Verbosity Rti.Config.Logger.GetVerbosity (
              LogCategory category )
```

Get the verbosity at which RTI Connext is currently logging diagnostic information in the given category.

The full documentation is available in the C API: `NDDSConfigLogger_get_verbosity_by_category`

9.165.2.5 SetPrintFormat() [1/2]

```
void Rti.Config.Logger.SetPrintFormat (
            LogPrintFormat format )
```

Set the message format that RTI Connext will use to log diagnostic information for all the log levels, except for NDDS↩ _CONFIG_LOG_LEVEL_FATAL_ERROR.

The full documentation is available in the C API: `NDDSConfigLogger_set_print_format`

9.165.2.6 SetPrintFormat() [2/2]

```
void Rti.Config.Logger.SetPrintFormat (
            LogPrintFormat format,
            LogLevel level )
```

Set the message format, by log level, that RTI Connext will use to log diagnostic information.

The full documentation is available in the C API: `NDDSConfigLogger_set_print_format_by_log_↩ level`

9.165.2.7 GetPrintFormat() [1/2]

```
LogPrintFormat Rti.Config.Logger.GetPrintFormat ( )
```

Get the current message format for the log level NDDS_CONFIG_LOG_LEVEL_ERROR.

The full documentation is available in the C API: `NDDSConfigLogger_get_print_format`

9.165.2.8 GetPrintFormat() [2/2]

```
LogPrintFormat Rti.Config.Logger.GetPrintFormat (
            LogLevel level )
```

Get the current message format, by log level, that RTI Connext is using to log diagnostic information.

The full documentation is available in the C API: `NDDSConfigLogger_get_print_format_by_log_↩ level`

9.165.2.9 SetOutputFile()

```
void Rti.Config.Logger.SetOutputFile (
           string filePath )  [inline]
```

Set the file to which the logged output is redirected.

The full documentation is available in the C API: `NDDSConfigLogger_set_output_file`

9.165.2.10 SetOutputFileSet()

```
void Rti.Config.Logger.SetOutputFileSet (
            string filePrefix,
            string fileSuffix,
            int maxCapacity,
            int maxFiles = LengthUnlimited.Value )  [inline]
```

Configure a set of files to redirect the logged output

The full documentation is available in the C API: `NDDSConfigLogger_set_output_file_set`

9.165.2.11 Emergency()

```
void Rti.Config.Logger.Emergency (
            string msg )  [inline]
```

Logs an emergency message

The full documentation is available in the C API: `NDDSConfigLogger_emergency`

9.165.2.12 Alert()

```
void Rti.Config.Logger.Alert (
            string msg )  [inline]
```

Logs an alert message

The full documentation is available in the C API: `NDDSConfigLogger_alert`

9.165.2.13 Critical()

```
void Rti.Config.Logger.Critical (
            string msg )  [inline]
```

Logs an critical message

The full documentation is available in the C API: `NDDSConfigLogger_critical`

9.165.2.14 Error()

```
void Rti.Config.Logger.Error (
            string msg )  [inline]
```

Logs an error message

The full documentation is available in the C API: `NDDSConfigLogger_error`

9.165.2.15 Warning()

```
void Rti.Config.Logger.Warning (
            string msg )  [inline]
```

Logs an warning message

The full documentation is available in the C API: NDDSConfigLogger_warning

9.165.2.16 Notice()

```
void Rti.Config.Logger.Notice (
            string msg )  [inline]
```

Logs an notice message

The full documentation is available in the C API: NDDSConfigLogger_notice

9.165.2.17 Informational()

```
void Rti.Config.Logger.Informational (
            string msg )  [inline]
```

Logs an informational message

The full documentation is available in the C API: NDDSConfigLogger_informational

9.165.2.18 Debug()

```
void Rti.Config.Logger.Debug (
            string msg )  [inline]
```

Logs an debug message

The full documentation is available in the C API: NDDSConfigLogger_debug

9.165.3 Property Documentation

9.165.3.1 Instance

```
Logger Rti.Config.Logger.Instance = new Logger()  [static], [get]
```

Get the singleton **Logger** (p. 728) instance

The full documentation is available in the C API: NDDSConfigLogger_get_instance

9.165.3.2 MessageLogged

MessageLoggedEventHandler Rti.Config.Logger.MessageLogged [add], [remove]

Event triggered whenever RTI Connext logs a message.

This event allows a custom redirection or processing of RTI Connext log messages.

If this event is handled, log messages will no longer be directed to the Console. After all handlers are removed, log messages will be directed to the Console again.

For a code example, see **Configuring logging** (p. 55).

9.166 Rti.Config.LogMessage Struct Reference

A log message provided by the **Logger.MessageLogged** (p. 733) event.

Public Member Functions

- **LogMessage** (string message, **LogLevel** logLevel, bool isSecurityMessage, bool isLicenseMessage, uint messageId, **Duration** timestamp, **LogFacility** logFacility)

  *Creates a **LogMessage** (p. 734)*
- override string **ToString** ()

  *Returns **Message** (p. 735).*

Properties

- string **Message** [get]

  Message text.
- **LogLevel LogLevel** [get]

  Message level.
- bool **IsSecurityMessage** [get]

  Indicates if the message is a security-related message.
- bool **IsLicenseMessage** [get]

  Indicates if the message is a license-related message.
- uint **MessageId** [get]

  A numeric code that identifies a specific log message.
- **Duration Timestamp** [get]

  The time when the log message was printed.
- **LogFacility LogFacility** [get]

  *The Facility associated with the log message. See **Rti.Config.LogFacility** (p. 76).*

9.166.1 Detailed Description

A log message provided by the **Logger.MessageLogged** (p. 733) event.

*The full documentation is available in the C API:*NDDSLogMessage

9.166.2 Constructor & Destructor Documentation

9.166.2.1 LogMessage()

```
Rti.Config.LogMessage.LogMessage (
            string message,
             LogLevel logLevel,
            bool isSecurityMessage,
            bool isLicenseMessage,
            uint messageId,
             Duration timestamp,
             LogFacility logFacility )
```

Creates a **LogMessage** (p. 734)

9.166.3 Member Function Documentation

9.166.3.1 ToString()

```
override string Rti.Config.LogMessage.ToString ( )
```

Returns **Message** (p. 735).

9.166.4 Property Documentation

9.166.4.1 Message

```
string Rti.Config.LogMessage.Message  [get]
```

Message text.

*The full documentation is available in the C API:*NDDSLogMessage_text

9.166.4.2 LogLevel

```
LogLevel Rti.Config.LogMessage.LogLevel [get]
```

Message level.

The full documentation is available in the C API: `NDDSLogMessage_level`

9.166.4.3 IsSecurityMessage

```
bool Rti.Config.LogMessage.IsSecurityMessage [get]
```

Indicates if the message is a security-related message.

The full documentation is available in the C API: `NDDSLogMessage_is_security_message`

9.166.4.4 IsLicenseMessage

```
bool Rti.Config.LogMessage.IsLicenseMessage [get]
```

Indicates if the message is a license-related message.

The full documentation is available in the C API: `NDDSLogMessage_is_license_message`

9.166.4.5 MessageId

```
uint Rti.Config.LogMessage.MessageId [get]
```

A numeric code that identifies a specific log message.

The full documentation is available in the C API: `NDDSLogMessage_message_id`

9.166.4.6 Timestamp

```
Duration Rti.Config.LogMessage.Timestamp [get]
```

The time when the log message was printed.

The full documentation is available in the C API: `NDDSLogMessage_timestamp`

9.166.4.7 LogFacility

```
LogFacility Rti.Config.LogMessage.LogFacility [get]
```

The Facility associated with the log message. See **Rti.Config.LogFacility** (p. 76).

The full documentation is available in the C API: `NDDSLogMessage_facility`

9.167 Rti.Types.LongDouble Struct Reference

IDL 128-bit floating-point type.

Inherits IFormattable, IConvertible, IEquatable< LongDouble >, and IComparable< LongDouble >.

Public Member Functions

- **LongDouble** (int[ ] ints)

  *Creates a **LongDouble** (p. 737) from its 32 bytes, as 4 ints*
- **LongDouble** (decimal value)

  *Creates a **LongDouble** (p. 737) from a decimal*
- **LongDouble** (double value)

  *Creates a **LongDouble** (p. 737) from a double*
- **LongDouble** (int value)

  *Creates a **LongDouble** (p. 737) from an int*
- int[ ] **GetBits** ()

  Gets the bits in an array of 4 integers
- decimal **ToDecimal** ()

  *Converts from **LongDouble** (p. 737) to decimal*
- override string **ToString** ()

  *Returns **ToDecimal()** (p. 739).**ToString()** (p. 739).*
- bool **Equals** (**LongDouble** other)

  *Compares with another **LongDouble** (p. 737)*
- int **CompareTo** (**LongDouble** other)

  *Compares the result of converting **ToDecimal()** (p. 739).*

Static Public Member Functions

- static **operator decimal** (**LongDouble** value)

  *Converts from **LongDouble** (p. 737) to decimal*
- static **operator LongDouble** (decimal value)

  *Converts from decimal to **LongDouble** (p. 737)*

Properties

- int **Int0** `[get, set]`

  Bytes 1 to 4 of this long double
- int **Int1** `[get, set]`

  Bytes 5 to 8 of this long double
- int **Int2** `[get, set]`

  Bytes 9 to 12 of this long double
- int **Int3** `[get, set]`

  Bytes 13 to 16 of this long double

9.167.1 Detailed Description

IDL 128-bit floating-point type.

This type is used by DDS to represent the IDL `long double` type and can be used among platforms for which there isn't a standard definition for a 128-bit floating-point type.

LongDouble (p. 737) can be converted to and from `decimal`, but this doesn't ensure interoperability with C, C++ or other applications for which a long double can have different representations. If a distributed system uses different long double representations, the applications are responsible for manually interpreting the individual bytes (provided as **Int0** (p. 740) to **Int3** (p. 741)).

9.167.2 Constructor & Destructor Documentation

9.167.2.1 LongDouble() [1/4]

```
Rti.Types.LongDouble.LongDouble (
            int[] ints )
```

Creates a **LongDouble** (p. 737) from its 32 bytes, as 4 ints

9.167.2.2 LongDouble() [2/4]

```
Rti.Types.LongDouble.LongDouble (
            decimal value )  [inline]
```

Creates a **LongDouble** (p. 737) from a decimal

9.167.2.3 LongDouble() [3/4]

```
Rti.Types.LongDouble.LongDouble (
            double value )  [inline]
```

Creates a **LongDouble** (p. 737) from a double

9.167.2.4 LongDouble() [4/4]

```
Rti.Types.LongDouble.LongDouble (
            int value )  [inline]
```

Creates a **LongDouble** (p. 737) from an int

9.167.3 Member Function Documentation

9.167.3.1 GetBits()

```
int[] Rti.Types.LongDouble.GetBits ( )
```

Gets the bits in an array of 4 integers

9.167.3.2 ToDecimal()

```
decimal Rti.Types.LongDouble.ToDecimal ( )
```

Converts from **LongDouble** (p. 737) to decimal

Note that the encoding of this **LongDouble** (p. 737) is not guaranteed to be compatible with a .NET decimal type.

9.167.3.3 operator decimal()

```
static Rti.Types.LongDouble.operator decimal (
             LongDouble value )  [explicit], [static]
```

Converts from **LongDouble** (p. 737) to decimal

Note that the encoding of this **LongDouble** (p. 737) is not guaranteed to be compatible with a .NET decimal type.

9.167.3.4 operator LongDouble()

```
static Rti.Types.LongDouble.operator  LongDouble (
            decimal value )  [explicit], [static]
```

Converts from decimal to **LongDouble** (p. 737)

9.167.3.5 ToString()

```
override string Rti.Types.LongDouble.ToString ( )
```

Returns **ToDecimal()** (p. 739).**ToString()** (p. 739).

9.167.3.6 Equals()

```
bool Rti.Types.LongDouble.Equals (
            LongDouble other )
```

Compares with another **LongDouble** (p. 737)

9.167.3.7 CompareTo()

```
int Rti.Types.LongDouble.CompareTo (
            LongDouble other )
```

Compares the result of converting **ToDecimal()** (p. 739).

9.167.4 Property Documentation

9.167.4.1 Int0

```
int Rti.Types.LongDouble.Int0  [get], [set]
```

Bytes 1 to 4 of this long double

9.167.4.2 Int1

```
int Rti.Types.LongDouble.Int1  [get], [set]
```

Bytes 5 to 8 of this long double

9.167.4.3 Int2

```
int Rti.Types.LongDouble.Int2  [get], [set]
```

Bytes 9 to 12 of this long double

9.167.4.4 Int3

```
int Rti.Types.LongDouble.Int3  [get], [set]
```

Bytes 13 to 16 of this long double

9.168 Rti.Utility.MaybeNullAttribute Class Reference

Indicates that a method or property may return a null value (elements without this annotation never return null)

Inherits Attribute.

9.168.1 Detailed Description

Indicates that a method or property may return a null value (elements without this annotation never return null)

9.169 Rti.Types.Dynamic.MemberInfo Struct Reference

A descriptor for a field of a dynamically defined data type.

Inherits IEquatable< MemberInfo >.

Public Member Functions

- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Gets the hash code.
- bool **Equals** (**MemberInfo** other)

  Compares for equality.

Properties

- int **MemberId** [get]

  *An integer that uniquely identifies the data member within this **DynamicData** (p. 564) sample's type.*
- string **MemberName** [get]

  The name of the data member.
- bool **MemberExists** [get]

  Indicates whether the member exists in this sample
- **TypeKind MemberKind** [get]

  The kind of type of this data member (e.g., integer, structure, etc.).
- uint **RepresentationCount** [get]

  The number of defined representations for this data member.
- uint **ElementCount** [get]

  The number of elements within this data member (applies to collection types only).
- **TypeKind ElementKind** [get]

  The kind of type of the elements within this data member (applies to collection types only).

9.169.1 Detailed Description

A descriptor for a field of a dynamically defined data type.

9.169.2 Member Function Documentation

9.169.2.1 Equals() [1/2]

```
override bool Rti.Types.Dynamic.MemberInfo.Equals (
            object other )
```

Compares for equality.

9.169.2.2 GetHashCode()

```
override int Rti.Types.Dynamic.MemberInfo.GetHashCode ( )  [inline]
```

Gets the hash code.

9.169.2.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.MemberInfo.Equals (
            MemberInfo other )  [inline]
```

Compares for equality.

9.169.3 Property Documentation

9.169.3.1 MemberId

```
int Rti.Types.Dynamic.MemberInfo.MemberId  [get]
```

An integer that uniquely identifies the data member within this **DynamicData** (p. 564) sample's type.

The full documentation is available in the C API: `DDS_DynamicDataMemberInfo_member_id`

9.169.3.2 MemberName

```
string Rti.Types.Dynamic.MemberInfo.MemberName  [get]
```

The name of the data member.

The full documentation is available in the C API: `DDS_DynamicDataMemberInfo_member_name`

9.169.3.3 MemberExists

```
bool Rti.Types.Dynamic.MemberInfo.MemberExists  [get]
```

Indicates whether the member exists in this sample

The full documentation is available in the C API: `DDS_DynamicDataMemberInfo_member_exists`

9.169.3.4 MemberKind

```
TypeKind Rti.Types.Dynamic.MemberInfo.MemberKind  [get]
```

The kind of type of this data member (e.g., integer, structure, etc.).

The full documentation is available in the C API: `DDS_DynamicDataMemberInfo_member_kind`

9.169.3.5 RepresentationCount

```
uint Rti.Types.Dynamic.MemberInfo.RepresentationCount [get]
```

The number of defined representations for this data member.

The full documentation is available in the C API: DDS_DynamicDataMemberInfo_representation_count

9.169.3.6 ElementCount

```
uint Rti.Types.Dynamic.MemberInfo.ElementCount [get]
```

The number of elements within this data member (applies to collection types only).

The full documentation is available in the C API: DDS_DynamicDataMemberInfo_element_count

9.169.3.7 ElementKind

```
TypeKind Rti.Types.Dynamic.MemberInfo.ElementKind [get]
```

The kind of type of the elements within this data member (applies to collection types only).

The full documentation is available in the C API: DDS_DynamicDataMemberInfo_element_kind

9.170 Rti.Dds.Core.Policy.Monitoring Class Reference

Enables the collection and distribution of telemetry data for a Connext application using RTI **Monitoring** (p. 744) Library 2.0

Inherits IEquatable< Monitoring >.

Public Member Functions

- **Monitoring With** (Action< **MonitoringBuilder** > build)

  *Creates a new **Monitoring** (p. 744) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Monitoring** other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code

Properties

- bool **Enable** [get]

  *Enables the collection and distribution of telemetry data for a Connext application using RTI **Monitoring** (p. 744) Library 2.0*
- string **ApplicationName** [get]

  The name of the resource that represents this Connext application
- **MonitoringDistributionSettings DistributionSettings** [get]

  Configures the distribution of telemetry data
- **MonitoringTelemetryData TelemetryData** [get]

  Configures the telemetry data that will be distributed.
- static **Monitoring Default** [get]

  *Singleton containing the default value of a **Monitoring** (p. 744)*

9.170.1 Detailed Description

Enables the collection and distribution of telemetry data for a Connext application using RTI **Monitoring** (p. 744) Library 2.0

The full documentation is available in the C API: DDS_MonitoringQosPolicy

9.170.2 Member Function Documentation

9.170.2.1 With()

```
Monitoring Rti.Dds.Core.Policy.Monitoring.With (
            Action< MonitoringBuilder > build ) [inline]
```

Creates a new **Monitoring** (p. 744) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **Monitoring** (p. 744)

Returns

A new **Monitoring** (p. 744) with the changes applied by the Action.

9.170.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Monitoring.Equals (
            object other )
```

Compares for equality

9.170.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Monitoring.Equals (
             Monitoring other )  [inline]
```

Compares for equality

9.170.2.4 GetHashCode()

```
override int Rti.Dds.Core.Policy.Monitoring.GetHashCode ( )  [inline]
```

Gets the hash code

9.170.3 Property Documentation

9.170.3.1 Enable

```
bool Rti.Dds.Core.Policy.Monitoring.Enable  [get]
```

Enables the collection and distribution of telemetry data for a Connext application using RTI **Monitoring** (p. 744) Library 2.0

The full documentation is available in the C API: DDS_MonitoringQosPolicy_enable

9.170.3.2 ApplicationName

```
string Rti.Dds.Core.Policy.Monitoring.ApplicationName  [get]
```

The name of the resource that represents this Connext application

The full documentation is available in the C API: DDS_MonitoringQosPolicy_application_name

9.170.3.3 DistributionSettings

MonitoringDistributionSettings Rti.Dds.Core.Policy.Monitoring.DistributionSettings [get]

Configures the distribution of telemetry data

The full documentation is available in the C API: DDS_MonitoringQosPolicy_distribution_settings

9.170.3.4 TelemetryData

MonitoringTelemetryData Rti.Dds.Core.Policy.Monitoring.TelemetryData [get]

Configures the telemetry data that will be distributed.

The full documentation is available in the C API: DDS_MonitoringQosPolicy_telemetry_data

9.170.3.5 Default

Monitoring Rti.Dds.Core.Policy.Monitoring.Default [static], [get]

Singleton containing the default value of a **Monitoring** (p. 744)

9.171 Rti.Dds.Core.Policy.MonitoringBuilder Class Reference

A modifiable type used to create an immutable **Monitoring** (p. 744)

Public Member Functions

- **MonitoringBuilder** (**Monitoring** data)

  Creates a builder with the values of an existing immutable instance
- **Monitoring Build** ()

  *Creates a immutable object (**Monitoring** (p. 744)) from this one*

Properties

- bool **Enable** [get, set]

  *Enables the collection and distribution of telemetry data for a Connext application using RTI **Monitoring** (p. 744) Library 2.0*
- string **ApplicationName** [get, set]

  The name of the resource that represents this Connext application
- **MonitoringDistributionSettingsBuilder DistributionSettings** [get, set]

  Configures the distribution of telemetry data
- **MonitoringTelemetryDataBuilder TelemetryData** [get, set]

  Configures the telemetry data that will be distributed.

9.171.1 Detailed Description

A modifiable type used to create an immutable **Monitoring** (p. 744)

9.171.2 Constructor & Destructor Documentation

9.171.2.1 MonitoringBuilder()

```
Rti.Dds.Core.Policy.MonitoringBuilder.MonitoringBuilder (
            Monitoring data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.171.3 Member Function Documentation

9.171.3.1 Build()

```
Monitoring Rti.Dds.Core.Policy.MonitoringBuilder.Build ( )
```

Creates a immutable object (**Monitoring** (p. 744)) from this one

9.171.4 Property Documentation

9.171.4.1 Enable

```
bool Rti.Dds.Core.Policy.MonitoringBuilder.Enable  [get], [set]
```

Enables the collection and distribution of telemetry data for a Connext application using RTI **Monitoring** (p. 744) Library 2.0

The full documentation is available in the C API: DDS_MonitoringQosPolicy_enable

9.171.4.2 ApplicationName

```
string Rti.Dds.Core.Policy.MonitoringBuilder.ApplicationName  [get], [set]
```

The name of the resource that represents this Connext application

The full documentation is available in the C API: `DDS_MonitoringQosPolicy_application_name`

9.171.4.3 DistributionSettings

MonitoringDistributionSettingsBuilder `Rti.Dds.Core.Policy.MonitoringBuilder.DistributionSettings [get], [set]`

Configures the distribution of telemetry data

The full documentation is available in the C API: `DDS_MonitoringQosPolicy_distribution_settings`

9.171.4.4 TelemetryData

MonitoringTelemetryDataBuilder `Rti.Dds.Core.Policy.MonitoringBuilder.TelemetryData  [get], [set]`

Configures the telemetry data that will be distributed.

The full documentation is available in the C API: `DDS_MonitoringQosPolicy_telemetry_data`

9.172 Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings Class Reference

Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

Inherits IEquatable< MonitoringDedicatedParticipantSettings >.

Public Member Functions

- **MonitoringDedicatedParticipantSettings With** (Action< **MonitoringDedicatedParticipantSettingsBuilder** > build)

  *Creates a new **MonitoringDedicatedParticipantSettings** (p. 749) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**MonitoringDedicatedParticipantSettings** other)

  Compares for equality

Properties

- bool **Enable** [get]

  Enables the usage of a dedicated Participant to distribute the Connext application telemetry data
- int **DomainId** [get]

  *The domain ID used in the creation of RTI **Monitoring** (p. 744) Library 2.0 Participant*
- string **ParticipantQosProfileName** [get]

  The fully qualified name of the profile used to configure the Participant that will be used to distribute telemetry data
- ImmutableList< string > **CollectorInitialPeers** [get]

  *Determines the initial list of peers that the discovery process will contact to send announcements about the presence of the **MonitoringDistributionSettings.DedicatedParticipant** (p. 756).*
- static **MonitoringDedicatedParticipantSettings Default** [get]

  *Singleton containing the default value of a **MonitoringDedicatedParticipantSettings** (p. 749)*

9.172.1 Detailed Description

Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

The full documentation is available in the C API: DDS_MonitoringDedicatedParticipantSettings

9.172.2 Member Function Documentation

9.172.2.1 With()

```
MonitoringDedicatedParticipantSettings Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.With (
            Action< MonitoringDedicatedParticipantSettingsBuilder > build ) [inline]
```

Creates a new **MonitoringDedicatedParticipantSettings** (p. 749) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **Monitoring** (p. 744)

Returns

A new **Monitoring** (p. 744) with the changes applied by the Action

9.172.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.Equals (
            object other )
```

Compares for equality

9.172.2.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.172.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.Equals (
             MonitoringDedicatedParticipantSettings other )  [inline]
```

Compares for equality

9.172.3 Property Documentation

9.172.3.1 Enable

```
bool Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.Enable  [get]
```

Enables the usage of a dedicated Participant to distribute the Connext application telemetry data

The full documentation is available in the C API: DDS_MonitoringDedicatedParticipantSettings_↩ enable

9.172.3.2 DomainId

```
int Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.DomainId  [get]
```

The domain ID used in the creation of RTI **Monitoring** (p. 744) Library 2.0 Participant

The full documentation is available in the C API: DDS_MonitoringDedicatedParticipantSettings_↩ domain_id

9.172.3.3 ParticipantQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.ParticipantQosProfileName [get]
```

The fully qualified name of the profile used to configure the Participant that will be used to distribute telemetry data

The full documentation is available in the C API: `DDS_MonitoringDedicatedParticipantSettings_participant_qos_profile_name`

9.172.3.4 CollectorInitialPeers

```
ImmutableList<string> Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.CollectorInitialPeers [get]
```

Determines the initial list of peers that the discovery process will contact to send announcements about the presence of the **MonitoringDistributionSettings.DedicatedParticipant** (p. 756).

The full documentation is available in the C API: `DDS_MonitoringDedicatedParticipantSettings_collector_initial_peers`

9.172.3.5 Default

```
MonitoringDedicatedParticipantSettings Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings.Default [static], [get]
```

Singleton containing the default value of a **MonitoringDedicatedParticipantSettings** (p. 749)

9.173 Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettingsBuilder Class Reference

A modifiable type used to create an immutable **MonitoringDedicatedParticipantSettings** (p. 749).

Public Member Functions

- **MonitoringDedicatedParticipantSettingsBuilder** (**MonitoringDedicatedParticipantSettings** data)

  Creates a builder with the values of an existing immutable instance
- **MonitoringDedicatedParticipantSettings Build** ()

  *Creates a immutable object (**MonitoringDedicatedParticipantSettings** (p. 749)) from this one*

Properties

- bool **Enable** [get, set]

  Enables the usage of a dedicated Participant to distribute the Connext application telemetry data
- int **DomainId** [get, set]

  *The domain ID used in the creation of RTI **Monitoring** (p. 744) Library 2.0 Participant*
- string **ParticipantQosProfileName** [get, set]

  The fully qualified name of the profile used to configure the Participant that will be used to distribute telemetry data
- ImmutableList< string >.Builder **CollectorInitialPeers** [get, set]

  *Determines the initial list of peers that the discovery process will contact to send announcements about the presence of the **MonitoringDistributionSettings.DedicatedParticipant** (p. 756).*

9.173.1 Detailed Description

A modifiable type used to create an immutable **MonitoringDedicatedParticipantSettings** (p. 749).

9.173.2 Constructor & Destructor Documentation

9.173.2.1 MonitoringDedicatedParticipantSettingsBuilder()

```
Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettingsBuilder.MonitoringDedicatedParticipant↩
SettingsBuilder (
              MonitoringDedicatedParticipantSettings data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.173.3 Member Function Documentation

9.173.3.1 Build()

```
MonitoringDedicatedParticipantSettings Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettings↩
Builder.Build ( )
```

Creates a immutable object (**MonitoringDedicatedParticipantSettings** (p. 749)) from this one

9.173.4 Property Documentation

9.173.4.1 Enable

```
bool Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettingsBuilder.Enable [get], [set]
```

Enables the usage of a dedicated Participant to distribute the Connext application telemetry data

The full documentation is available in the C API: DDS_MonitoringDedicatedParticipantSettings_↩ enable

9.173.4.2 DomainId

```
int Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettingsBuilder.DomainId [get], [set]
```

The domain ID used in the creation of RTI **Monitoring** (p. 744) Library 2.0 Participant

The full documentation is available in the C API: DDS_MonitoringDedicatedParticipantSettings_↩ domain_id

9.173.4.3 ParticipantQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettingsBuilder.ParticipantQosProfileName
[get], [set]
```

The fully qualified name of the profile used to configure the Participant that will be used to distribute telemetry data

The full documentation is available in the C API: DDS_MonitoringDedicatedParticipantSettings_↩ participant_qos_profile_name

9.173.4.4 CollectorInitialPeers

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.MonitoringDedicatedParticipantSettingsBuilder.↩
CollectorInitialPeers [get], [set]
```

Determines the initial list of peers that the discovery process will contact to send announcements about the presence of the **MonitoringDistributionSettings.DedicatedParticipant** (p. 756).

The full documentation is available in the C API: DDS_MonitoringDedicatedParticipantSettings_↩ collector_initial_peers

9.174 Rti.Dds.Core.Policy.MonitoringDistributionSettings Class Reference

Configures the distribution of telemetry data

Inherits IEquatable< MonitoringDistributionSettings >.

Public Member Functions

- **MonitoringDistributionSettings With** (Action< **MonitoringDistributionSettingsBuilder** > build)

  *Creates a new **MonitoringDistributionSettings*** (p. *754*) *with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**MonitoringDistributionSettings** other)

  Compares for equality

Properties

- string **PublisherQosProfileName** `[get]`

  The fully qualified name of the profile used to configure the Publishers that distribute telemetry data
- **MonitoringDedicatedParticipantSettings DedicatedParticipant** `[get]`

  Configures the usage of a dedicated Participant to distribute the Connext application telemetry data
- **MonitoringPeriodicDistributionSettings PeriodicSettings** `[get]`

  Configures the distribution of periodic metrics
- **MonitoringEventDistributionSettings EventSettings** `[get]`

  Configures the distribution of event metrics
- **MonitoringLoggingDistributionSettings LoggingSettings** `[get]`

  Configures the distribution of logging messages
- static **MonitoringDistributionSettings Default** `[get]`

  *Singleton containing the default value of a **MonitoringDistributionSettings*** (p. *754*)

9.174.1 Detailed Description

Configures the distribution of telemetry data

The full documentation is available in the C API: `DDS_MonitoringDistributionSettings`

9.174.2 Member Function Documentation

9.174.2.1 With()

```
MonitoringDistributionSettings Rti.Dds.Core.Policy.MonitoringDistributionSettings.With (
            Action< MonitoringDistributionSettingsBuilder > build ) [inline]
```

Creates a new **MonitoringDistributionSettings** (p. 754) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **Monitoring** (p. 744)

Returns

A new **Monitoring** (p. 744) with the changes applied by the Action

9.174.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringDistributionSettings.Equals (
            object other )
```

Compares for equality

9.174.2.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringDistributionSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.174.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringDistributionSettings.Equals (
             MonitoringDistributionSettings other )  [inline]
```

Compares for equality

9.174.3 Property Documentation

9.174.3.1 PublisherQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringDistributionSettings.PublisherQosProfileName  [get]
```

The fully qualified name of the profile used to configure the Publishers that distribute telemetry data

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_↩ publisher_qos_profile_name

9.174.3.2 DedicatedParticipant

MonitoringDedicatedParticipantSettings Rti.Dds.Core.Policy.MonitoringDistributionSettings.↩
DedicatedParticipant [get]

Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_↩
dedicated_participant

9.174.3.3 PeriodicSettings

MonitoringPeriodicDistributionSettings Rti.Dds.Core.Policy.MonitoringDistributionSettings.↩
PeriodicSettings [get]

Configures the distribution of periodic metrics

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_periodic↩
_settings

9.174.3.4 EventSettings

MonitoringEventDistributionSettings Rti.Dds.Core.Policy.MonitoringDistributionSettings.Event↩
Settings [get]

Configures the distribution of event metrics

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_event_↩
settings

9.174.3.5 LoggingSettings

MonitoringLoggingDistributionSettings Rti.Dds.Core.Policy.MonitoringDistributionSettings.Logging↩
Settings [get]

Configures the distribution of logging messages

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_logging_↩
settings

9.174.3.6 Default

MonitoringDistributionSettings Rti.Dds.Core.Policy.MonitoringDistributionSettings.Default [static],
[get]

Singleton containing the default value of a **MonitoringDistributionSettings** (p. 754)

9.175 Rti.Dds.Core.Policy.MonitoringDistributionSettingsBuilder Class Reference

A modifiable type used to create an immutable **MonitoringDistributionSettings** (p. 754).

Public Member Functions

- **MonitoringDistributionSettingsBuilder** (**MonitoringDistributionSettings** data)
  Creates a builder with the values of an existing immutable instance
- **MonitoringDistributionSettings Build** ()
  *Creates a immutable object (**MonitoringDistributionSettings** (p. 754)) from this one*

Properties

- string **PublisherQosProfileName** `[get, set]`
  The fully qualified name of the profile used to configure the Publishers that distribute telemetry data
- **MonitoringDedicatedParticipantSettingsBuilder DedicatedParticipant** `[get, set]`
  Configures the usage of a dedicated Participant to distribute the Connext application telemetry data
- **MonitoringPeriodicDistributionSettingsBuilder PeriodicSettings** `[get, set]`
  Configures the distribution of periodic metrics
- **MonitoringEventDistributionSettingsBuilder EventSettings** `[get, set]`
  Configures the distribution of event metrics
- **MonitoringLoggingDistributionSettingsBuilder LoggingSettings** `[get, set]`
  Configures the distribution of logging messages

9.175.1 Detailed Description

A modifiable type used to create an immutable **MonitoringDistributionSettings** (p. 754).

9.175.2 Constructor & Destructor Documentation

9.175.2.1 MonitoringDistributionSettingsBuilder()

```
Rti.Dds.Core.Policy.MonitoringDistributionSettingsBuilder.MonitoringDistributionSettingsBuilder (
            MonitoringDistributionSettings data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.175.3 Member Function Documentation

9.175.3.1 Build()

MonitoringDistributionSettings Rti.Dds.Core.Policy.MonitoringDistributionSettingsBuilder.Build ( )

Creates a immutable object (**MonitoringDistributionSettings** (p. 754)) from this one

9.175.4 Property Documentation

9.175.4.1 PublisherQosProfileName

string Rti.Dds.Core.Policy.MonitoringDistributionSettingsBuilder.PublisherQosProfileName [get], [set]

The fully qualified name of the profile used to configure the Publishers that distribute telemetry data

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_↩ publisher_qos_profile_name

9.175.4.2 DedicatedParticipant

MonitoringDedicatedParticipantSettingsBuilder Rti.Dds.Core.Policy.MonitoringDistributionSettings↩ Builder.DedicatedParticipant [get], [set]

Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_↩ dedicated_participant

9.175.4.3 PeriodicSettings

MonitoringPeriodicDistributionSettingsBuilder Rti.Dds.Core.Policy.MonitoringDistributionSettings↩ Builder.PeriodicSettings [get], [set]

Configures the distribution of periodic metrics

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_periodic↩ _settings

9.175.4.4 EventSettings

MonitoringEventDistributionSettingsBuilder Rti.Dds.Core.Policy.MonitoringDistributionSettings↩
Builder.EventSettings [get], [set]

Configures the distribution of event metrics

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_event_↩
settings

9.175.4.5 LoggingSettings

MonitoringLoggingDistributionSettingsBuilder Rti.Dds.Core.Policy.MonitoringDistributionSettings↩
Builder.LoggingSettings [get], [set]

Configures the distribution of logging messages

The full documentation is available in the C API: DDS_MonitoringDistributionSettings_logging_↩
settings

9.176 Rti.Dds.Core.Policy.MonitoringEventDistributionSettings Class Reference

Configures the distribution of event metrics

Inherits IEquatable< MonitoringEventDistributionSettings >.

Public Member Functions

- **MonitoringEventDistributionSettings With** (Action< **MonitoringEventDistributionSettingsBuilder** > build)
  *Creates a new **MonitoringEventDistributionSettings** (p. 760) with a set of changes specified in an Action*
- override bool **Equals** (object other)
  Compares for equality
- override int **GetHashCode** ()
  Gets the hash code
- bool **Equals** (**MonitoringEventDistributionSettings** other)
  Compares for equality

Properties

- uint **ConcurrencyLevel** [get]
  *Defines how concurrent is the push process of event metrics to RTI **Monitoring** (p. 744) Library 2.0*
- string **DataWriterQosProfileName** [get]
  The fully qualified name of the profile used to configure the configure the DataWriter that distributes event metrics
- **ThreadSettings Thread** [get]
  The settings of the event metric thread
- **Duration PublicationPeriod** [get]
  Period at which the event thread publishes event metrics
- static **MonitoringEventDistributionSettings Default** [get]
  *Singleton containing the default value of a **MonitoringEventDistributionSettings** (p. 760)*

9.176.1 Detailed Description

Configures the distribution of event metrics

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings

9.176.2 Member Function Documentation

9.176.2.1 With()

```
MonitoringEventDistributionSettings Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.With
(
            Action<  MonitoringEventDistributionSettingsBuilder > build )  [inline]
```

Creates a new **MonitoringEventDistributionSettings** (p. 760) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **Monitoring** (p. 744)

Returns

A new **Monitoring** (p. 744) with the changes applied by the Action

9.176.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.Equals (
            object other )
```

Compares for equality

9.176.2.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.176.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.Equals (
            MonitoringEventDistributionSettings other ) [inline]
```

Compares for equality

9.176.3 Property Documentation

9.176.3.1 ConcurrencyLevel

```
uint Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.ConcurrencyLevel [get]
```

Defines how concurrent is the push process of event metrics to RTI **Monitoring** (p. 744) Library 2.0

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ concurrency_level

9.176.3.2 DataWriterQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.DataWriterQosProfileName [get]
```

The fully qualified name of the profile used to configure the configure the DataWriter that distributes event metrics

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ datawriter_qos_profile_name

9.176.3.3 Thread

```
ThreadSettings Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.Thread [get]
```

The settings of the event metric thread

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ thread

9.176.3.4 PublicationPeriod

```
Duration Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.PublicationPeriod [get]
```

Period at which the event thread publishes event metrics

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ publication_period

9.176.3.5 Default

MonitoringEventDistributionSettings Rti.Dds.Core.Policy.MonitoringEventDistributionSettings.↩
Default [static], [get]

Singleton containing the default value of a **MonitoringEventDistributionSettings** (p. 760)

9.177 Rti.Dds.Core.Policy.MonitoringEventDistributionSettingsBuilder Class Reference

A modifiable type used to create an immutable **MonitoringEventDistributionSettings** (p. 760).

Public Member Functions

- **MonitoringEventDistributionSettingsBuilder** (**MonitoringEventDistributionSettings** data)
  Creates a builder with the values of an existing immutable instance
- **MonitoringEventDistributionSettings Build** ()
  *Creates a immutable object (**MonitoringEventDistributionSettings** (p. 760)) from this one*

Properties

- uint **ConcurrencyLevel** [get, set]
  *Defines how concurrent is the push process of event metrics to RTI **Monitoring** (p. 744) Library 2.0*
- string **DataWriterQosProfileName** [get, set]
  The fully qualified name of the profile used to configure the configure the DataWriter that distributes event metrics
- **ThreadSettingsBuilder Thread** [get, set]
  The settings of the event metric thread
- **Duration PublicationPeriod** [get, set]
  Period at which the event thread publishes event metrics

9.177.1 Detailed Description

A modifiable type used to create an immutable **MonitoringEventDistributionSettings** (p. 760).

9.177.2 Constructor & Destructor Documentation

9.177.2.1 MonitoringEventDistributionSettingsBuilder()

```
Rti.Dds.Core.Policy.MonitoringEventDistributionSettingsBuilder.MonitoringEventDistributionSettings↩
Builder (
            MonitoringEventDistributionSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.177.3 Member Function Documentation

9.177.3.1 Build()

```
 MonitoringEventDistributionSettings Rti.Dds.Core.Policy.MonitoringEventDistributionSettings↩
Builder.Build ( )
```

Creates a immutable object (**MonitoringEventDistributionSettings** (p. 760)) from this one

9.177.4 Property Documentation

9.177.4.1 ConcurrencyLevel

```
uint Rti.Dds.Core.Policy.MonitoringEventDistributionSettingsBuilder.ConcurrencyLevel  [get], [set]
```

Defines how concurrent is the push process of event metrics to RTI **Monitoring** (p. 744) Library 2.0

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ concurrency_level

9.177.4.2 DataWriterQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringEventDistributionSettingsBuilder.DataWriterQosProfileName
[get], [set]
```

The fully qualified name of the profile used to configure the configure the DataWriter that distributes event metrics

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ datawriter_qos_profile_name

9.177.4.3 Thread

ThreadSettingsBuilder Rti.Dds.Core.Policy.MonitoringEventDistributionSettingsBuilder.Thread [get], [set]

The settings of the event metric thread

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ thread

9.177.4.4 PublicationPeriod

Duration Rti.Dds.Core.Policy.MonitoringEventDistributionSettingsBuilder.PublicationPeriod [get], [set]

Period at which the event thread publishes event metrics

The full documentation is available in the C API: DDS_MonitoringEventDistributionSettings_↩ publication_period

9.178 Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings Class Reference

Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

Inherits IEquatable< MonitoringLoggingDistributionSettings >.

Public Member Functions

- **MonitoringLoggingDistributionSettings With** (Action< **MonitoringLoggingDistributionSettingsBuilder** > build)

  *Creates a new **MonitoringLoggingDistributionSettings** (p. 765) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**MonitoringLoggingDistributionSettings** other)

  Compares for equality

Properties

- uint **ConcurrencyLevel** [get]

  *Defines how concurrent is the push process of log messages to RTI **Monitoring** (p. 744) Library 2.0*
- uint **MaxHistoricalLogs** [get]

  *The number of log messages that RTI **Monitoring** (p. 744) Library 2.0 will keep as history*
- string **DataWriterQosProfileName** [get]

  The fully qualified name of the profile used to configure the configure the DataWriter that distributes log messages
- **ThreadSettings Thread** [get]

  The settings of the logging thread
- **Duration PublicationPeriod** [get]

  Period at which the logging thread publishes log messages
- static **MonitoringLoggingDistributionSettings Default** [get]

  *Singleton containing the default value of a **MonitoringLoggingDistributionSettings** (p. 765)*

9.178.1 Detailed Description

Configures the usage of a dedicated Participant to distribute the Connext application telemetry data

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings

9.178.2 Member Function Documentation

9.178.2.1 With()

```
MonitoringLoggingDistributionSettings Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.With (
            Action< MonitoringLoggingDistributionSettingsBuilder > build ) [inline]
```

Creates a new **MonitoringLoggingDistributionSettings** (p. 765) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **Monitoring** (p. 744)

Returns

A new **Monitoring** (p. 744) with the changes applied by the Action

9.178.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.Equals (
            object other )
```

Compares for equality

9.178.2.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.178.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.Equals (
             MonitoringLoggingDistributionSettings other )  [inline]
```

Compares for equality

9.178.3 Property Documentation

9.178.3.1 ConcurrencyLevel

```
uint Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.ConcurrencyLevel  [get]
```

Defines how concurrent is the push process of log messages to RTI **Monitoring** (p. 744) Library 2.0

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ concurrency_level

9.178.3.2 MaxHistoricalLogs

```
uint Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.MaxHistoricalLogs  [get]
```

The number of log messages that RTI **Monitoring** (p. 744) Library 2.0 will keep as history

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ max_historical_logs

9.178.3.3 DataWriterQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.DataWriterQosProfileName [get]
```

The fully qualified name of the profile used to configure the configure the DataWriter that distributes log messages

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ datawriter_qos_profile_name

9.178.3.4 Thread

```
ThreadSettings Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.Thread [get]
```

The settings of the logging thread

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ thread

9.178.3.5 PublicationPeriod

```
Duration Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.PublicationPeriod [get]
```

Period at which the logging thread publishes log messages

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ publication_period

9.178.3.6 Default

```
MonitoringLoggingDistributionSettings Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings.↩
Default [static], [get]
```

Singleton containing the default value of a **MonitoringLoggingDistributionSettings** (p. 765)

9.179 Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettingsBuilder Class Reference

A modifiable type used to create an immutable **MonitoringLoggingDistributionSettings** (p. 765).

Public Member Functions

- **MonitoringLoggingDistributionSettingsBuilder** (**MonitoringLoggingDistributionSettings** data)

  Creates a builder with the values of an existing immutable instance
- **MonitoringLoggingDistributionSettings Build** ()

  *Creates a immutable object (**MonitoringLoggingDistributionSettings** (p. 765)) from this one*

Properties

- uint **ConcurrencyLevel** [get, set]

  Defines how concurrent is the push process of log messages to RTI ***Monitoring*** *(p. 744) Library 2.0*
- uint **MaxHistoricalLogs** [get, set]

  The number of log messages that RTI ***Monitoring*** *(p. 744) Library 2.0 will keep as history*
- string **DataWriterQosProfileName** [get, set]

  The fully qualified name of the profile used to configure the configure the DataWriter that distributes log messages
- **ThreadSettingsBuilder Thread** [get, set]

  The settings of the logging thread
- **Duration PublicationPeriod** [get, set]

  Period at which the logging thread publishes log messages

9.179.1 Detailed Description

A modifiable type used to create an immutable **MonitoringLoggingDistributionSettings** (p. 765).

9.179.2 Constructor & Destructor Documentation

9.179.2.1 MonitoringLoggingDistributionSettingsBuilder()

```
Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettingsBuilder.MonitoringLoggingDistribution↩
SettingsBuilder (
              MonitoringLoggingDistributionSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.179.3 Member Function Documentation

9.179.3.1 Build()

```
 MonitoringLoggingDistributionSettings Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettings↩
Builder.Build ( )
```

Creates a immutable object (**MonitoringLoggingDistributionSettings** (p. 765)) from this one

9.179.4 Property Documentation

9.179.4.1 ConcurrencyLevel

```
uint Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettingsBuilder.ConcurrencyLevel [get],
[set]
```

Defines how concurrent is the push process of log messages to RTI **Monitoring** (p. 744) Library 2.0

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ concurrency_level

9.179.4.2 MaxHistoricalLogs

```
uint Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettingsBuilder.MaxHistoricalLogs [get],
[set]
```

The number of log messages that RTI **Monitoring** (p. 744) Library 2.0 will keep as history

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ max_historical_logs

9.179.4.3 DataWriterQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettingsBuilder.DataWriterQosProfileName
[get], [set]
```

The fully qualified name of the profile used to configure the configure the DataWriter that distributes log messages

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ datawriter_qos_profile_name

9.179.4.4 Thread

```
ThreadSettingsBuilder Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettingsBuilder.Thread
[get], [set]
```

The settings of the logging thread

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ thread

9.179.4.5 PublicationPeriod

Duration Rti.Dds.Core.Policy.MonitoringLoggingDistributionSettingsBuilder.PublicationPeriod [get], [set]

Period at which the logging thread publishes log messages

The full documentation is available in the C API: DDS_MonitoringLoggingDistributionSettings_↩ publication_period

9.180 Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings Class Reference

Configures the forwarding levels of log messages for the different **Rti.Config.LogFacility** (p. 76).

Inherits IEquatable< MonitoringLoggingForwardingSettings >.

Public Member Functions

- **MonitoringLoggingForwardingSettings With** (Action< **MonitoringLoggingForwardingSettingsBuilder** > build)

  *Creates a new **MonitoringLoggingForwardingSettings** (p. 771) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**MonitoringLoggingForwardingSettings** other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code

Properties

- **SyslogVerbosity MiddlewareForwardingLevel** [get]

  *Log messages with **Rti.Config.LogFacility.Middleware** (p. 76) and a log level more verbose than this value will not be distributed.*
- **SyslogVerbosity SecurityEventForwardingLevel** [get]

  *Log messages with **Rti.Config.LogFacility.SecurityEvent** (p. 76) and a log level more verbose than this value will not be distributed.*
- **SyslogVerbosity ServiceForwardingLevel** [get]

  *Log messages with **Rti.Config.LogFacility.Service** (p. 76) and a log level more verbose than this value will not be distributed.*
- **SyslogVerbosity UserForwardingLevel** [get]

  *Log messages with **Rti.Config.LogFacility.User** (p. 76) and a log level more verbose than this value will not be distributed.*
- static **MonitoringLoggingForwardingSettings Default** [get]

  *Singleton containing the default value of a **MonitoringLoggingForwardingSettings** (p. 771)*

9.180.1 Detailed Description

Configures the forwarding levels of log messages for the different **Rti.Config.LogFacility** (p. 76).

The full documentation is available in the C API: `DDS_MonitoringLoggingForwardingSettings`

9.180.2 Member Function Documentation

9.180.2.1 With()

```
MonitoringLoggingForwardingSettings Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.With
(
            Action<  MonitoringLoggingForwardingSettingsBuilder > build )  [inline]
```

Creates a new **MonitoringLoggingForwardingSettings** (p. 771) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **MonitoringLoggingForwardingSettings** (p. 771)

Returns

A new **MonitoringLoggingForwardingSettings** (p. 771) with the changes applied by the Action

9.180.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.Equals (
            object other )
```

Compares for equality

9.180.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.Equals (
             MonitoringLoggingForwardingSettings other )  [inline]
```

Compares for equality

9.180.2.4 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.180.3 Property Documentation

9.180.3.1 MiddlewareForwardingLevel

SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.MiddlewareForwardingLevel [get]

Log messages with **Rti.Config.LogFacility.Middleware** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_middleware_forwarding_level

9.180.3.2 SecurityEventForwardingLevel

SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.SecurityEventForwardingLevel [get]

Log messages with **Rti.Config.LogFacility.SecurityEvent** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_security_event_forwarding_level

9.180.3.3 ServiceForwardingLevel

SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.ServiceForwardingLevel [get]

Log messages with **Rti.Config.LogFacility.Service** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_service_forwarding_level

9.180.3.4 UserForwardingLevel

SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.UserForwardingLevel [get]

Log messages with **Rti.Config.LogFacility.User** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_↩ user_forwarding_level

9.180.3.5 Default

MonitoringLoggingForwardingSettings Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings.↩ Default [static], [get]

Singleton containing the default value of a **MonitoringLoggingForwardingSettings** (p. 771)

9.181 Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettingsBuilder Class Reference

A modifiable type used to create an immutable **MonitoringLoggingForwardingSettings** (p. 771).

Public Member Functions

- **MonitoringLoggingForwardingSettingsBuilder** (**MonitoringLoggingForwardingSettings** data)

  Creates a builder with the values of an existing immutable instance
- **MonitoringLoggingForwardingSettings Build** ()

  *Creates a immutable object (**MonitoringLoggingForwardingSettings** (p. 771)) from this one*

Properties

- **SyslogVerbosity MiddlewareForwardingLevel** [get, set]

  *Log messages with **Rti.Config.LogFacility.Middleware** (p. 76) and a log level more verbose than this value will not be distributed.*
- **SyslogVerbosity SecurityEventForwardingLevel** [get, set]

  *Log messages with **Rti.Config.LogFacility.SecurityEvent** (p. 76) and a log level more verbose than this value will not be distributed.*
- **SyslogVerbosity ServiceForwardingLevel** [get, set]

  *Log messages with **Rti.Config.LogFacility.Service** (p. 76) and a log level more verbose than this value will not be distributed.*
- **SyslogVerbosity UserForwardingLevel** [get, set]

  *Log messages with **Rti.Config.LogFacility.User** (p. 76) and a log level more verbose than this value will not be distributed.*

9.181.1 Detailed Description

A modifiable type used to create an immutable **MonitoringLoggingForwardingSettings** (p. 771).

9.181.2 Constructor & Destructor Documentation

9.181.2.1 MonitoringLoggingForwardingSettingsBuilder()

```
Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettingsBuilder.MonitoringLoggingForwardingSettings↩
Builder (
            MonitoringLoggingForwardingSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.181.3 Member Function Documentation

9.181.3.1 Build()

```
 MonitoringLoggingForwardingSettings Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettings↩
Builder.Build ( )
```

Creates a immutable object (**MonitoringLoggingForwardingSettings** (p. 771)) from this one

9.181.4 Property Documentation

9.181.4.1 MiddlewareForwardingLevel

```
 SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettingsBuilder.MiddlewareForwarding↩
Level  [get], [set]
```

Log messages with **Rti.Config.LogFacility.Middleware** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_↩ middleware_forwarding_level

9.181.4.2 SecurityEventForwardingLevel

SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettingsBuilder.SecurityEvent↩ ForwardingLevel [get], [set]

Log messages with **Rti.Config.LogFacility.SecurityEvent** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_↩ security_event_forwarding_level

9.181.4.3 ServiceForwardingLevel

SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettingsBuilder.ServiceForwarding↩ Level [get], [set]

Log messages with **Rti.Config.LogFacility.Service** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_↩ service_forwarding_level

9.181.4.4 UserForwardingLevel

SyslogVerbosity Rti.Dds.Core.Policy.MonitoringLoggingForwardingSettingsBuilder.UserForwarding↩ Level [get], [set]

Log messages with **Rti.Config.LogFacility.User** (p. 76) and a log level more verbose than this value will not be distributed.

The full documentation is available in the C API: DDS_MonitoringLoggingForwardingSettings_↩ user_forwarding_level

9.182 Rti.Dds.Core.Policy.MonitoringMetricSelection Class Reference

Configures event and periodic metrics collection and distribution for a specific set of observable resources.

Inherits IEquatable< MonitoringMetricSelection >.

Public Member Functions

- **MonitoringMetricSelection With** (Action< **MonitoringMetricSelectionBuilder** > build)

  *Creates a new **MonitoringMetricSelection** (p. 776) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**MonitoringMetricSelection** other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code

Properties

- string **ResourceSelection** [get]

  An expression pattern that selects a subset of resources by matching the pattern to the resource names. ***Monitoring↩ MetricSelection.EnabledMetricsSelection*** *(p. 778) and* ***MonitoringMetricSelection.DisabledMetricsSelection*** *(p. 778) are applied to this subset of resources.*
- ImmutableList< string > **EnabledMetricsSelection** [get]

  A sequence of POSIX fnmatch patterns that match the names of the metrics that should be collected and distributed for the observable resources selected by ***MonitoringMetricSelection.ResourceSelection*** *(p. 778).*
- ImmutableList< string > **DisabledMetricsSelection** [get]

  A sequence of POSIX fnmatch patterns that match the names of the metrics that should not be collected and distributed for the observable resources selected by ***MonitoringMetricSelection.ResourceSelection*** *(p. 778).*
- static **MonitoringMetricSelection Default** = CreateDefault() [get]

  Singleton containing the default value of a ***MonitoringMetricSelection*** *(p. 776)*

9.182.1 Detailed Description

Configures event and periodic metrics collection and distribution for a specific set of observable resources.

The full documentation is available in the C API: DDS_MonitoringMetricSelection

9.182.2 Member Function Documentation

9.182.2.1 With()

```
MonitoringMetricSelection Rti.Dds.Core.Policy.MonitoringMetricSelection.With (
            Action<  MonitoringMetricSelectionBuilder > build )  [inline]
```

Creates a new **MonitoringMetricSelection** (p. 776) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **MonitoringMetricSelection** (p. 776)

Returns

A new **MonitoringMetricSelection** (p. 776) with the changes applied by the Action

9.182.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringMetricSelection.Equals (
            object other )
```

Compares for equality

9.182.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringMetricSelection.Equals (
             MonitoringMetricSelection other )  [inline]
```

Compares for equality

9.182.2.4 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringMetricSelection.GetHashCode ( )  [inline]
```

Gets the hash code

9.182.3 Property Documentation

9.182.3.1 ResourceSelection

```
string Rti.Dds.Core.Policy.MonitoringMetricSelection.ResourceSelection  [get]
```

An expression pattern that selects a subset of resources by matching the pattern to the resource names. **MonitoringMetricSelection.EnabledMetricsSelection** (p. 778) and **MonitoringMetricSelection.DisabledMetricsSelection** (p. 778) are applied to this subset of resources.

The full documentation is available in the C API: DDS_MonitoringMetricSelection_resource_selection

9.182.3.2 EnabledMetricsSelection

```
ImmutableList<string> Rti.Dds.Core.Policy.MonitoringMetricSelection.EnabledMetricsSelection  [get]
```

A sequence of POSIX fnmatch patterns that match the names of the metrics that should be collected and distributed for the observable resources selected by **MonitoringMetricSelection.ResourceSelection** (p. 778).

The full documentation is available in the C API: DDS_MonitoringMetricSelection_enabled_metrics_selection

9.182.3.3 DisabledMetricsSelection

```
ImmutableList<string> Rti.Dds.Core.Policy.MonitoringMetricSelection.DisabledMetricsSelection
[get]
```

A sequence of POSIX fnmatch patterns that match the names of the metrics that should not be collected and distributed for the observable resources selected by **MonitoringMetricSelection.ResourceSelection** (p. 778).

The full documentation is available in the C API: DDS_MonitoringMetricSelection_disabled_↩ metrics_selection

9.182.3.4 Default

```
MonitoringMetricSelection Rti.Dds.Core.Policy.MonitoringMetricSelection.Default = CreateDefault()
[static], [get]
```

Singleton containing the default value of a **MonitoringMetricSelection** (p. 776)

9.183 Rti.Dds.Core.Policy.MonitoringMetricSelectionBuilder Class Reference

A modifiable type used to create an immutable **MonitoringMetricSelection** (p. 776).

Public Member Functions

- **MonitoringMetricSelectionBuilder** (**MonitoringMetricSelection** data)

  Creates a builder with the values of an existing immutable instance
- **MonitoringMetricSelection Build** ()

  *Creates a immutable object (**MonitoringMetricSelection** (p. 776)) from this one*

Properties

- string **ResourceSelection** [get, set]

  *An expression pattern that selects a subset of resources by matching the pattern to the resource names. **MonitoringMetricSelection.EnabledMetricsSelection** (p. 778) and **MonitoringMetricSelection.DisabledMetricsSelection** (p. 778) are applied to this subset of resources.*
- ImmutableList< string >.Builder **EnabledMetricsSelection** [get, set]

  *A sequence of POSIX fnmatch patterns that match the names of the metrics that should be collected and distributed for the observable resources selected by **MonitoringMetricSelection.ResourceSelection** (p. 778).*
- ImmutableList< string >.Builder **DisabledMetricsSelection** [get, set]

  *A sequence of POSIX fnmatch patterns that match the names of the metrics that should not be collected and distributed for the observable resources selected by **MonitoringMetricSelection.ResourceSelection** (p. 778).*

9.183.1 Detailed Description

A modifiable type used to create an immutable **MonitoringMetricSelection** (p. 776).

9.183.2 Constructor & Destructor Documentation

9.183.2.1 MonitoringMetricSelectionBuilder()

```
Rti.Dds.Core.Policy.MonitoringMetricSelectionBuilder.MonitoringMetricSelectionBuilder (
            MonitoringMetricSelection data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.183.3 Member Function Documentation

9.183.3.1 Build()

```
MonitoringMetricSelection Rti.Dds.Core.Policy.MonitoringMetricSelectionBuilder.Build ( )
```

Creates a immutable object (**MonitoringMetricSelection** (p. 776)) from this one

9.183.4 Property Documentation

9.183.4.1 ResourceSelection

```
string Rti.Dds.Core.Policy.MonitoringMetricSelectionBuilder.ResourceSelection [get], [set]
```

An expression pattern that selects a subset of resources by matching the pattern to the resource names. **MonitoringMetricSelection.EnabledMetricsSelection** (p. 778) and **MonitoringMetricSelection.DisabledMetricsSelection** (p. 778) are applied to this subset of resources.

The full documentation is available in the C API: DDS_MonitoringMetricSelection_resource_selection

9.183.4.2 EnabledMetricsSelection

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.MonitoringMetricSelectionBuilder.Enabled↩
MetricsSelection [get], [set]
```

A sequence of POSIX fnmatch patterns that match the names of the metrics that should be collected and distributed for the observable resources selected by **MonitoringMetricSelection.ResourceSelection** (p. 778).

The full documentation is available in the C API: `DDS_MonitoringMetricSelection_enabled_↩metrics_selection`

9.183.4.3 DisabledMetricsSelection

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.MonitoringMetricSelectionBuilder.Disabled↩
MetricsSelection [get], [set]
```

A sequence of POSIX fnmatch patterns that match the names of the metrics that should not be collected and distributed for the observable resources selected by **MonitoringMetricSelection.ResourceSelection** (p. 778).

The full documentation is available in the C API: `DDS_MonitoringMetricSelection_disabled_↩metrics_selection`

9.184 Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings Class Reference

Configures the distribution of periodic metrics

Inherits IEquatable< MonitoringPeriodicDistributionSettings >.

Public Member Functions

- **MonitoringPeriodicDistributionSettings With** (Action< **MonitoringPeriodicDistributionSettingsBuilder** > build)

  *Creates a new **MonitoringPeriodicDistributionSettings** (p. 781) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**MonitoringPeriodicDistributionSettings** other)

  Compares for equality

Properties

- string **DataWriterQosProfileName** [get]

  The fully qualified name of the profile used to configure the configure the DataWriter that distributes periodic metrics
- **ThreadSettings Thread** [get]

  The settings of the periodic metrics thread
- **Duration PollingPeriod** [get]

  Period at which the periodic metric thread polls and publishes the periodic metrics
- static **MonitoringPeriodicDistributionSettings Default** [get]

  *Singleton containing the default value of a **MonitoringPeriodicDistributionSettings** (p. 781)*

9.184.1 Detailed Description

Configures the distribution of periodic metrics

The full documentation is available in the C API: DDS_MonitoringPeriodicDistributionSettings

9.184.2 Member Function Documentation

9.184.2.1 With()

```
MonitoringPeriodicDistributionSettings Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.With (
            Action< MonitoringPeriodicDistributionSettingsBuilder > build ) [inline]
```

Creates a new **MonitoringPeriodicDistributionSettings** (p. 781) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **Monitoring** (p. 744)

Returns

A new **Monitoring** (p. 744) with the changes applied by the Action

9.184.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.Equals (
            object other )
```

Compares for equality

9.184.2.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.184.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.Equals (
            MonitoringPeriodicDistributionSettings other )  [inline]
```

Compares for equality

9.184.3 Property Documentation

9.184.3.1 DataWriterQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.DataWriterQosProfileName  [get]
```

The fully qualified name of the profile used to configure the configure the DataWriter that distributes periodic metrics

The full documentation is available in the C API: DDS_MonitoringPeriodicDistributionSettings_↩ datawriter_qos_profile_name

9.184.3.2 Thread

```
ThreadSettings Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.Thread  [get]
```

The settings of the periodic metrics thread

The full documentation is available in the C API: DDS_MonitoringPeriodicDistributionSettings_↩ thread

9.184.3.3 PollingPeriod

Duration Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.PollingPeriod [get]

Period at which the periodic metric thread polls and publishes the periodic metrics

The full documentation is available in the C API: DDS_MonitoringPeriodicDistributionSettings_↩ polling_period

9.184.3.4 Default

MonitoringPeriodicDistributionSettings Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings.↩ Default [static], [get]

Singleton containing the default value of a **MonitoringPeriodicDistributionSettings** (p. 781)

9.185 Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettingsBuilder Class Reference

A modifiable type used to create an immutable **MonitoringPeriodicDistributionSettings** (p. 781).

Public Member Functions

- **MonitoringPeriodicDistributionSettingsBuilder** (**MonitoringPeriodicDistributionSettings** data)
  Creates a builder with the values of an existing immutable instance
- **MonitoringPeriodicDistributionSettings Build** ()
  *Creates a immutable object (**MonitoringPeriodicDistributionSettings** (p. 781)) from this one*

Properties

- string **DataWriterQosProfileName** [get, set]
  The fully qualified name of the profile used to configure the configure the DataWriter that distributes periodic metrics
- **ThreadSettingsBuilder Thread** [get, set]
  The settings of the periodic metrics thread
- **Duration PollingPeriod** [get, set]
  Period at which the periodic metric thread polls and publishes the periodic metrics

9.185.1 Detailed Description

A modifiable type used to create an immutable **MonitoringPeriodicDistributionSettings** (p. 781).

9.185.2 Constructor & Destructor Documentation

9.185.2.1 MonitoringPeriodicDistributionSettingsBuilder()

```
Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettingsBuilder.MonitoringPeriodicDistribution↩
SettingsBuilder (
              MonitoringPeriodicDistributionSettings data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.185.3 Member Function Documentation

9.185.3.1 Build()

```
MonitoringPeriodicDistributionSettings Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettings↩
Builder.Build ( )
```

Creates a immutable object (**MonitoringPeriodicDistributionSettings** (p. 781)) from this one

9.185.4 Property Documentation

9.185.4.1 DataWriterQosProfileName

```
string Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettingsBuilder.DataWriterQosProfileName
[get], [set]
```

The fully qualified name of the profile used to configure the configure the DataWriter that distributes periodic metrics

The full documentation is available in the C API: DDS_MonitoringPeriodicDistributionSettings_↩ datawriter_qos_profile_name

9.185.4.2 Thread

```
ThreadSettingsBuilder Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettingsBuilder.Thread
[get], [set]
```

The settings of the periodic metrics thread

The full documentation is available in the C API: DDS_MonitoringPeriodicDistributionSettings_↩ thread

9.185.4.3 PollingPeriod

Duration Rti.Dds.Core.Policy.MonitoringPeriodicDistributionSettingsBuilder.PollingPeriod [get], [set]

Period at which the periodic metric thread polls and publishes the periodic metrics

The full documentation is available in the C API: DDS_MonitoringPeriodicDistributionSettings_↩ polling_period

9.186 Rti.Dds.Core.Policy.MonitoringTelemetryData Class Reference

Configures the telemetry data that will be distributed.

Inherits IEquatable< MonitoringTelemetryData >.

Public Member Functions

- **MonitoringTelemetryData With** (Action< **MonitoringTelemetryDataBuilder** > build)

  *Creates a new **MonitoringTelemetryData** (p. 786) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**MonitoringTelemetryData** other)

  Compares for equality.
- override int **GetHashCode** ()

  Gets the hash code

Properties

- ImmutableList< **MonitoringMetricSelection** > **Metrics** [get]

  *A sequence of **MonitoringMetricSelection** (p. 776) containing the event and periodic metrics that will be collected and distributed for a given set of observable resources.*
- **MonitoringLoggingForwardingSettings Logs** [get]

  *Contains the **Rti.Config.SyslogVerbosity** (p. 74) levels that will be forwarded for the different **Rti.Config.LogFacility** (p. 76).*
- static **MonitoringTelemetryData Default** [get]

  *Singleton containing the default value of a **MonitoringTelemetryData** (p. 786).*

9.186.1 Detailed Description

Configures the telemetry data that will be distributed.

The full documentation is available in the C API: DDS_MonitoringTelemetryData

9.186.2 Member Function Documentation

9.186.2.1 With()

```
MonitoringTelemetryData Rti.Dds.Core.Policy.MonitoringTelemetryData.With (
            Action< MonitoringTelemetryDataBuilder > build )  [inline]
```

Creates a new **MonitoringTelemetryData** (p. 786) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **MonitoringTelemetryData** (p. 786).

Returns

A new **MonitoringTelemetryData** (p. 786) with the changes applied by the Action.

9.186.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MonitoringTelemetryData.Equals (
            object other )
```

Compares for equality.

9.186.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MonitoringTelemetryData.Equals (
             MonitoringTelemetryData other )  [inline]
```

Compares for equality.

9.186.2.4 GetHashCode()

```
override int Rti.Dds.Core.Policy.MonitoringTelemetryData.GetHashCode ( )  [inline]
```

Gets the hash code

9.186.3 Property Documentation

9.186.3.1 Metrics

ImmutableList< **MonitoringMetricSelection**> Rti.Dds.Core.Policy.MonitoringTelemetryData.Metrics [get]

A sequence of **MonitoringMetricSelection** (p. 776) containing the event and periodic metrics that will be collected and distributed for a given set of observable resources.

*The full documentation is available in the C API:*DDS_MonitoringTelemetryData_metrics

9.186.3.2 Logs

MonitoringLoggingForwardingSettings Rti.Dds.Core.Policy.MonitoringTelemetryData.Logs [get]

Contains the **Rti.Config.SyslogVerbosity** (p. 74) levels that will be forwarded for the different **Rti.Config.LogFacility** (p. 76).

*The full documentation is available in the C API:*DDS_MonitoringTelemetryData_logs

9.186.3.3 Default

MonitoringTelemetryData Rti.Dds.Core.Policy.MonitoringTelemetryData.Default [static], [get]

Singleton containing the default value of a **MonitoringTelemetryData** (p. 786).

9.187 Rti.Dds.Core.Policy.MonitoringTelemetryDataBuilder Class Reference

A modifiable type used to create an immutable. **MonitoringTelemetryData** (p. 786).

Public Member Functions

- **MonitoringTelemetryDataBuilder** (**MonitoringTelemetryData** data)

  Creates a builder with the values of an existing immutable instance.
- **MonitoringTelemetryData Build** ()

  *Creates a immutable object (**MonitoringTelemetryData** (p. 786)) from this one.*

Properties

- ImmutableList< **MonitoringMetricSelection** >.Builder **Metrics** `[get, set]`

  *A sequence of **MonitoringMetricSelection** (p. 776) containing the event and periodic metrics that will be collected and distributed for a given set of observable resources.*

- **MonitoringLoggingForwardingSettingsBuilder Logs** `[get, set]`

  *Contains the **Rti.Config.SyslogVerbosity** (p. 74) levels that will be forwarded for the different **Rti.Config.LogFacility** (p. 76).*

9.187.1 Detailed Description

A modifiable type used to create an immutable. **MonitoringTelemetryData** (p. 786).

9.187.2 Constructor & Destructor Documentation

9.187.2.1 MonitoringTelemetryDataBuilder()

```
Rti.Dds.Core.Policy.MonitoringTelemetryDataBuilder.MonitoringTelemetryDataBuilder (
            MonitoringTelemetryData data )  [inline]
```

Creates a builder with the values of an existing immutable instance.

9.187.3 Member Function Documentation

9.187.3.1 Build()

```
MonitoringTelemetryData Rti.Dds.Core.Policy.MonitoringTelemetryDataBuilder.Build ( )
```

Creates a immutable object (**MonitoringTelemetryData** (p. 786)) from this one.

9.187.4 Property Documentation

9.187.4.1 Metrics

`ImmutableList< MonitoringMetricSelection>.Builder Rti.Dds.Core.Policy.MonitoringTelemetryData↩ Builder.Metrics [get], [set]`

A sequence of **MonitoringMetricSelection** (p. 776) containing the event and periodic metrics that will be collected and distributed for a given set of observable resources.

The full documentation is available in the C API: `DDS_MonitoringTelemetryData_metrics`

9.187.4.2 Logs

MonitoringLoggingForwardingSettingsBuilder `Rti.Dds.Core.Policy.MonitoringTelemetryDataBuilder.↩ Logs [get], [set]`

Contains the **Rti.Config.SyslogVerbosity** (p. 74) levels that will be forwarded for the different **Rti.Config.LogFacility** (p. 76).

The full documentation is available in the C API: `DDS_MonitoringTelemetryData_logs`

9.188 Rti.Dds.Core.Policy.MulticastMapping Class Reference

Maps topics to multicast addresses

Inherits IEquatable< MulticastMapping >.

Public Member Functions

- **MulticastMapping With** (Action< **MulticastMappingBuilder** > build)

  *Creates a new **TransportMulticastMapping** (p. 1192) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**MulticastMapping** other)

  Compares for equality

Properties

- string **Addresses** `[get]`

  *A string containing a comma-separated list of IP addresses or IP address ranges to be used to receive multicast traffic for the entity with a topic that matches the **TopicExpression** (p. 792).*
- string **TopicExpression** `[get]`

  A regular expression that will be used to map topic names to corresponding multicast receive addresses.
- **MulticastMappingFunction MappingFunction** `[get]`

  Specifies a function that will define the mapping between a topic name and a specific multicast address from a list of addresses.
- static **MulticastMapping Default** = CreateDefault() `[get]`

  *Singleton containing the default value of a **TransportMulticastMapping** (p. 1192)*

9.188.1 Detailed Description

Maps topics to multicast addresses

9.188.2 Member Function Documentation

9.188.2.1 With()

```
MulticastMapping Rti.Dds.Core.Policy.MulticastMapping.With (
            Action<  MulticastMappingBuilder > build )  [inline]
```

Creates a new **TransportMulticastMapping** (p. 1192) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportMulticastMapping** (p. 1192).

Returns

A new **TransportMulticastMapping** (p. 1192) with the changes applied by the Action

9.188.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.MulticastMapping.GetHashCode ( )  [inline]
```

Gets the hash code

9.188.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MulticastMapping.Equals (
            object other )
```

Compares for equality

9.188.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MulticastMapping.Equals (
            MulticastMapping other )  [inline]
```

Compares for equality

9.188.3 Property Documentation

9.188.3.1 Addresses

```
string Rti.Dds.Core.Policy.MulticastMapping.Addresses  [get]
```

A string containing a comma-separated list of IP addresses or IP address ranges to be used to receive *multicast* traffic for the entity with a topic that matches the **TopicExpression** (p. 792).

The full documentation is available in the C API: DDS_TransportMulticastMapping_t_addresses

9.188.3.2 TopicExpression

```
string Rti.Dds.Core.Policy.MulticastMapping.TopicExpression  [get]
```

A regular expression that will be used to map topic names to corresponding multicast receive addresses.

The full documentation is available in the C API: DDS_TransportMulticastMapping_t_topic_↩expression

9.188.3.3 MappingFunction

```
MulticastMappingFunction Rti.Dds.Core.Policy.MulticastMapping.MappingFunction  [get]
```

Specifies a function that will define the mapping between a topic name and a specific multicast address from a list of addresses.

The full documentation is available in the C API: DDS_TransportMulticastMapping_t_mapping_↩function

9.188.3.4 Default

```
MulticastMapping Rti.Dds.Core.Policy.MulticastMapping.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **TransportMulticastMapping** (p. 1192)

9.189 Rti.Dds.Core.Policy.MulticastMappingBuilder Class Reference

A modifiable type used to create an immutable **MulticastMapping** (p. 790)

Public Member Functions

- **MulticastMappingBuilder** (**MulticastMapping** data)

  Creates a builder with the values of an existing immutable instance
- **MulticastMapping Build** ()

  *Creates a new **MulticastMapping** (p. 790) immutable object from this one.*

Properties

- string **Addresses** `[get, set]`

  *A string containing a comma-separated list of IP addresses or IP address ranges to be used to receive multicast traffic for the entity with a topic that matches the **TopicExpression** (p. 794).*
- string **TopicExpression** `[get, set]`

  A regular expression that will be used to map topic names to corresponding multicast receive addresses.
- **MulticastMappingFunction MappingFunction** `[get, set]`

  Specifies a function that will define the mapping between a topic name and a specific multicast address from a list of addresses.

9.189.1 Detailed Description

A modifiable type used to create an immutable **MulticastMapping** (p. 790)

9.189.2 Constructor & Destructor Documentation

9.189.2.1 MulticastMappingBuilder()

```
Rti.Dds.Core.Policy.MulticastMappingBuilder.MulticastMappingBuilder (
            MulticastMapping data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.189.3 Member Function Documentation

9.189.3.1 Build()

```
MulticastMapping Rti.Dds.Core.Policy.MulticastMappingBuilder.Build ( )
```

Creates a new **MulticastMapping** (p. 790) immutable object from this one.

9.189.4 Property Documentation

9.189.4.1 Addresses

```
string Rti.Dds.Core.Policy.MulticastMappingBuilder.Addresses [get], [set]
```

A string containing a comma-separated list of IP addresses or IP address ranges to be used to receive *multicast* traffic for the entity with a topic that matches the **TopicExpression** (p. 794).

The full documentation is available in the C API: DDS_TransportMulticastMapping_t_addresses

9.189.4.2 TopicExpression

```
string Rti.Dds.Core.Policy.MulticastMappingBuilder.TopicExpression [get], [set]
```

A regular expression that will be used to map topic names to corresponding multicast receive addresses.

The full documentation is available in the C API: DDS_TransportMulticastMapping_t_topic_↩ expression

9.189.4.3 MappingFunction

```
MulticastMappingFunction Rti.Dds.Core.Policy.MulticastMappingBuilder.MappingFunction [get],
[set]
```

Specifies a function that will define the mapping between a topic name and a specific multicast address from a list of addresses.

The full documentation is available in the C API: DDS_TransportMulticastMapping_t_mapping_↩ function

9.190 Rti.Dds.Core.Policy.MulticastMappingFunction Struct Reference

Identifies an external function

Inherits IEquatable< MulticastMappingFunction >.

Public Member Functions

- **MulticastMappingFunction** (string dll, string functionName)

  *Creates a new **MulticastMappingFunction** (p. 794)*
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**MulticastMappingFunction** other)

  Compares for equality

Properties

- string **Dll** `[get]`

  Specifies a dynamic library that contains a mapping function.
- string **FunctionName** `[get]`

  Specifies the name of a mapping function.

9.190.1 Detailed Description

Identifies an external function

9.190.2 Constructor & Destructor Documentation

9.190.2.1 MulticastMappingFunction()

```
Rti.Dds.Core.Policy.MulticastMappingFunction.MulticastMappingFunction (
            string dll,
            string functionName )
```

Creates a new **MulticastMappingFunction** (p. 794)

Parameters

dll	The value for **Dll** (p. 796)
functionName	The value for **FunctionName** (p. 796)

9.190.3 Member Function Documentation

9.190.3.1 GetHashCode()

```
override int Rti.Dds.Core.Policy.MulticastMappingFunction.GetHashCode ( )  [inline]
```

Gets the hash code

9.190.3.2 Equals()

```
bool Rti.Dds.Core.Policy.MulticastMappingFunction.Equals (
            MulticastMappingFunction other )  [inline]
```

Compares for equality

9.190.4 Property Documentation

9.190.4.1 Dll

```
string Rti.Dds.Core.Policy.MulticastMappingFunction.Dll  [get]
```

Specifies a dynamic library that contains a mapping function.

The full documentation is available in the C API: DDS_TransportMulticastMappingFunction_t_dll

9.190.4.2 FunctionName

```
string Rti.Dds.Core.Policy.MulticastMappingFunction.FunctionName  [get]
```

Specifies the name of a mapping function.

The full documentation is available in the C API: DDS_TransportMulticastMappingFunction_t_↩
function_name

9.191 Rti.Dds.Core.Policy.MultiChannel Class Reference

Configures DataWriter to send data using different multicast groups (addresses) based on data value.

Inherits IEquatable< MultiChannel >.

Public Member Functions

- **MultiChannel With** (Action< **MultiChannelBuilder** > build)

  *Creates a new **MultiChannel** (p. 796) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**MultiChannel** other)

  Compares for equality

Properties

- ImmutableList< **ChannelSettings** > **Channels** [get]

  *A sequence of **ChannelSettings** (p. 212) used to configure the channels' properties. If the length of the sequence is zero, the QoS policy will be ignored.*
- string **FilterName** [get]

  *Name of the filter class used to describe the filter expressions of a **MultiChannel** (p. 796) DataWriter.*
- static **MultiChannel Default** [get]

  *Singleton containing the default value of a **MultiChannel** (p. 796)*

9.191.1 Detailed Description

Configures DataWriter to send data using different multicast groups (addresses) based on data value.

The full documentation is available in the C API: DDS_MultiChannelQosPolicy

9.191.2 Member Function Documentation

9.191.2.1 With()

```
MultiChannel Rti.Dds.Core.Policy.MultiChannel.With (
            Action< MultiChannelBuilder > build ) [inline]
```

Creates a new **MultiChannel** (p. 796) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **MultiChannel** (p. 796).

Returns

A new **MultiChannel** (p. 796) with the changes applied by the Action

9.191.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.MultiChannel.GetHashCode ( )  [inline]
```

Gets the hash code

9.191.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.MultiChannel.Equals (
            object other )
```

Compares for equality

9.191.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.MultiChannel.Equals (
             MultiChannel other )  [inline]
```

Compares for equality

9.191.3 Property Documentation

9.191.3.1 Channels

```
ImmutableList< ChannelSettings> Rti.Dds.Core.Policy.MultiChannel.Channels  [get]
```

A sequence of **ChannelSettings** (p. 212) used to configure the channels' properties. If the length of the sequence is zero, the QoS policy will be ignored.

The full documentation is available in the C API: DDS_MultiChannelQosPolicy_channels

9.191.3.2 FilterName

```
string Rti.Dds.Core.Policy.MultiChannel.FilterName [get]
```

Name of the filter class used to describe the filter expressions of a **MultiChannel** (p. 796) DataWriter.

The full documentation is available in the C API: `DDS_MultiChannelQosPolicy_filter_name`

9.191.3.3 Default

```
MultiChannel Rti.Dds.Core.Policy.MultiChannel.Default [static], [get]
```

Singleton containing the default value of a **MultiChannel** (p. 796)

9.192 Rti.Dds.Core.Policy.MultiChannelBuilder Class Reference

A modifiable type used to create an immutable **MultiChannel** (p. 796)

Public Member Functions

- **MultiChannelBuilder** (**MultiChannel** data)

  Creates a builder with the values of an existing immutable instance
- **MultiChannel Build** ()

  *Creates a new **MultiChannel** (p. 796) immutable object from this one.*

Properties

- ImmutableList< **ChannelSettings** >.Builder **Channels** `[get, set]`

  *A sequence of **ChannelSettings** (p. 212) used to configure the channels' properties. If the length of the sequence is zero, the QoS policy will be ignored.*
- string **FilterName** `[get, set]`

  *Name of the filter class used to describe the filter expressions of a **MultiChannel** (p. 796) DataWriter.*

9.192.1 Detailed Description

A modifiable type used to create an immutable **MultiChannel** (p. 796)

9.192.2 Constructor & Destructor Documentation

9.192.2.1 MultiChannelBuilder()

```
Rti.Dds.Core.Policy.MultiChannelBuilder.MultiChannelBuilder (
            MultiChannel data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.192.3 Member Function Documentation

9.192.3.1 Build()

```
MultiChannel Rti.Dds.Core.Policy.MultiChannelBuilder.Build ( )
```

Creates a new **MultiChannel** (p. 796) immutable object from this one.

9.192.4 Property Documentation

9.192.4.1 Channels

```
ImmutableList< ChannelSettings>.Builder Rti.Dds.Core.Policy.MultiChannelBuilder.Channels  [get],
[set]
```

A sequence of **ChannelSettings** (p. 212) used to configure the channels' properties. If the length of the sequence is zero, the QoS policy will be ignored.

The full documentation is available in the C API: `DDS_MultiChannelQosPolicy_channels`

9.192.4.2 FilterName

```
string Rti.Dds.Core.Policy.MultiChannelBuilder.FilterName  [get], [set]
```

Name of the filter class used to describe the filter expressions of a **MultiChannel** (p. 796) DataWriter.

The full documentation is available in the C API: `DDS_MultiChannelQosPolicy_filter_name`

9.193 Omg.Types.MustUnderstandAttribute Class Reference

Indicates that a field in a topic-type is "must understand" (IDL @must_understand annotation)

Inherits Attribute.

9.193.1 Detailed Description

Indicates that a field in a topic-type is "must understand" (IDL @must_understand annotation)

9.194 Example.MyType Struct Reference

Example (p. 61) C# class generated from the IDL `struct` **`MyType`** (p. 801)

Inherits IEquatable< MyType >.

Public Member Functions

- **MyType** ()

  Creates a fully initialized new instance with the default values
- **MyType** (int **MyKey**, string **MyString**, **Example.Point** **MyPoint**, **ISequence**< int > **MyIntSequence**, **ISequence**< **Example.Point** > **MyPointSequence**, **Example.Point**[ ] **MyPointArray**, int? **MyOptionalInt**, **Example.Point** **MyOptionalPoint**)

  Creates a new instance with a given value for each property
- **MyType** (**MyType** other_)

  Creates a new instance by making a deep copy of an existing one
- bool **Equals** (**MyType** other)

  *Compares two **MyType** (p. 801) instances for equality (IEquatable implementation). The comparison is deep.*
- override bool **Equals** (object obj)

  Compares this instance with another object (override of object.Equals)
- override string **ToString** ()

  Provides a readable string representation
- override int **GetHashCode** ()

  Calculates the hash code based on the values of each property

Properties

- int **MyKey** `[get, set]`

  Gets or sets the value for the field MyKey
- string **MyString** = string.Empty `[get, set]`

  Gets or sets the value for the field MyString
- **Example.Point** **MyPoint** `[get, set]`

  Gets or sets the value for the field MyPoint.
- **ISequence**< int > **MyIntSequence** `[get]`

  Gets the sequence MyIntSequence
- **ISequence**< **Example.Point** > **MyPointSequence** `[get]`

  Gets the sequence MyPointSequence
- **Example.Point**[ ] **MyPointArray** `[get, set]`

  Gets or sets the array MyPointArray.
- int? **MyOptionalInt** `[get, set]`

  Gets or sets the optional value of MyOptionalInt. A null value is allowed.
- **Example.Point** **MyOptionalPoint** `[get, set]`

  Gets or sets the optional value of MyOptionalPoint. A null value is allowed.

9.194.1 Detailed Description

Example (p. 61) C# class generated from the IDL `struct` **`MyType`** (p. 801)

Use the documentation of this example class as a guide to understand the IDL-to-C# mapping of user data types, based on the `OMG IDL4-CSHARP` specification.

The IDL definition of **MyType** (p. 801) is the following:

```
// MyType.idl
module Example {
    struct Point {
        int32 X;
        int32 Y;
    };
    struct MyType {
        @key int32 MyKey;
        string<512> MyString;
        Point MyPoint;
        sequence<int32, 128> MyIntSequence;
        sequence<Point, 8> MyPointSequence;
        Point MyPointArray[5];
        @optional int32 MyOptionalInt;
        @optional Point MyOptionalPoint;
    };
};
```

The code generation tool (**rtiddsgen**) generates the C# types:

```
rtiddsgen -language c# MyType.idl
```

See also

IDL examples (p. 49)

9.194.2 Constructor & Destructor Documentation

9.194.2.1 MyType() [1/3]

```
Example.MyType.MyType ( )  [inline]
```

Creates a fully initialized new instance with the default values

Each member is fully initialized as follows:

- `MyKey` is set to `0`
- `MyString` is set to `string.Empty`
- `MyPoint` is created with the default constructor (which sets `X` and `Y` to 0)
- `MyIntSequence` is created as an empty **Rti.Types.Sequence** (p. 1044).
- `MyPointSequence` is created as an empty **Rti.Types.Sequence** (p. 1044).
- `MyPointArray` is created as an array of 5 **`Point`** (p. 848)s, each created using **`Point`** (p. 848)'s default constructor
- `MyOptionalInt` is set to `null`
- `MyOptionalPoint` is set to `null`

9.194.2.2 MyType() [2/3]

```
Example.MyType.MyType (
            int MyKey,
            string MyString,
             Example.Point MyPoint,
             ISequence< int > MyIntSequence,
             ISequence<  Example.Point > MyPointSequence,
             Example.Point[] MyPointArray,
            int?  MyOptionalInt,
             Example.Point MyOptionalPoint )  [inline]
```

Creates a new instance with a given value for each property

The parameters are directly assigned to the properties; they're not deeply copied.

9.194.2.3 MyType() [3/3]

```
Example.MyType.MyType (
             MyType other_ )  [inline]
```

Creates a new instance by making a deep copy of an existing one

Parameters

*other_*	The object to copy

Each property is deeply copied. For example:

```
var a = new MyType();
a.MyPoint = new Point(x: 5, y: 7);
var b = new MyType(a);
Debug.Assert(!ReferenceEquals(a.MyPoint, b.MyPoint);
Debug.Assert(Equals(a.MyPoint, b.MyPoint);
```

9.194.3 Member Function Documentation

9.194.3.1 Equals() [1/2]

```
bool Example.MyType.Equals (
             MyType other )  [inline]
```

Compares two **MyType** (p. 801) instances for equality (IEquatable implementation). The comparison is deep.

Parameters

other	The instance to compare

Returns

Whether the two instances have the same values for all their properties and all the elements in the sequence and array fields.

9.194.3.2 Equals() [2/2]

```
override bool Example.MyType.Equals (
            object obj )
```

Compares this instance with another object (override of object.Equals)

Parameters

obj	Any object

Returns

True only if obj is of type **MyType** (p. 801) and both are equal

9.194.3.3 ToString()

```
override string Example.MyType.ToString ( )
```

Provides a readable string representation

MyTypeSupport (p. 807) provides additional options (such as XML and JSON formatting) via **Rti.Dds.Topics.Type↩ Support<T>.ToString(T, Rti.Dds.Topics.PrintFormatProperty)** (p. 1226).

9.194.3.4 GetHashCode()

```
override int Example.MyType.GetHashCode ( )  [inline]
```

Calculates the hash code based on the values of each property

For sequence types only the sequence length is used in the hash; for arrays only the first element is used to calculate the hash.

9.194.4 Property Documentation

9.194.4.1 MyKey

```
int Example.MyType.MyKey  [get], [set]
```

Gets or sets the value for the field MyKey

This property is defined as follows:

```
[Key]
public int MyKey { get; set; }
```

See also

Omg.Types.KeyAttribute (p. 687)

9.194.4.2 MyString

```
string Example.MyType.MyString = string.Empty  [get], [set]
```

Gets or sets the value for the field MyString

This property is defined as follows:

```
[Bound(512)]
public string MyString { get; set; } = string.Empty;
```

The property can't be set to null (because it's not ``) and can't contain more bytes than its bound (512). In any of these cases **Rti.Dds.Publication.DataWriter<T>.Write(T)** (p. 338) would fail.

Note

Both IDL `string` and `wstring` map to C# `string`. However, an IDL `string` is encoded in UTF-8, whereas a `wstring` is encoded in UTF-16. The bound of a `string` refers to the total number of bytes in UTF-8, after being encoded. In the case of `wstring`, the bound refers to the total number of characters.

See also

Omg.Types.BoundAttribute (p. 197)

9.194.4.3 MyPoint

```
Example.Point Example.MyType.MyPoint  [get], [set]
```

Gets or sets the value for the field MyPoint.

The property can't be set to null unless the field is optional. Otherwise **Rti.Dds.Publication.DataWriter<T>.Write(T)** (p. 338) will fail.

9.194.4.4 MyIntSequence

```
ISequence<int> Example.MyType.MyIntSequence  [get]
```

Gets the sequence MyIntSequence

This property is defined as follows:

```
[Bound(128)]
public ISequence<int> MyIntSequence { get; }
```

Sequences do not provide a setter, only a getter, which allows adding or removing elements.

If a bounded sequence contains more elements than its bound (in this case, 128), **Rti.Dds.Publication.DataWriter<↩ T>.Write(T)** (p. 338) will fail.

See also

Omg.Types.BoundAttribute (p. 197)

9.194.4.5 MyPointSequence

```
ISequence< Example.Point> Example.MyType.MyPointSequence  [get]
```

Gets the sequence MyPointSequence

This property is defined as follows:

```
[Bound(8)]
public ISequence<Example.Point> MyPointSequence { get; }
```

Sequences do not provide a setter, only a getter, which allows adding or removing elements.

If a bounded sequence contains more elements than its bound (in this case, 8), **Rti.Dds.Publication.DataWriter<↩ T>.Write(T)** (p. 338) will fail.

See also

Omg.Types.BoundAttribute (p. 197)

9.194.4.6 MyPointArray

```
Example.Point [] Example.MyType.MyPointArray  [get], [set]
```

Gets or sets the array MyPointArray.

If a new array is set, it must contain exactly the number of elements that was specified in the IDL file (5). Otherwise **Rti.Dds.Publication.DataWriter<T>.Write(T)** (p. 338) will fail.

9.194.4.7 MyOptionalInt

```
int?  Example.MyType.MyOptionalInt  [get], [set]
```

Gets or sets the optional value of MyOptionalInt. A null value is allowed.

This property is defined as follows:

```
[Optional]
public int? MyOptionalInt { get; set; }
```

See also

Omg.Types.OptionalAttribute (p. 823)

9.194.4.8 MyOptionalPoint

```
Example.Point Example.MyType.MyOptionalPoint  [get], [set]
```

Gets or sets the optional value of MyOptionalPoint. A null value is allowed.

This property is defined as follows:

```
[Optional]
public Example.Point MyOptionalPoint { get; set; }
```

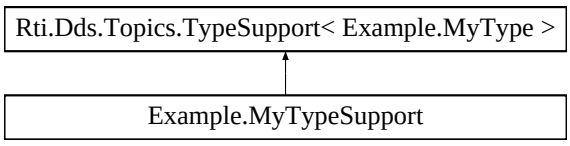
See also

Omg.Types.OptionalAttribute (p. 823)

9.195 Example.MyTypeSupport Class Reference

Provides utilities for **MyType** (p. 801) (this class is a singleton).

Inheritance diagram for Example.MyTypeSupport:



Properties

- static **MyTypeSupport Instance** [get]

  The singleton instance

Additional Inherited Members

9.195.1 Detailed Description

Provides utilities for **MyType** (p. 801) (this class is a singleton).

All the methods are properties are defined in the base class, Rti.Dds.Topics.TypeSupport<T>

9.195.2 Property Documentation

9.195.2.1 Instance

```
MyTypeSupport Example.MyTypeSupport.Instance  [static], [get]
```

Initial value:

```
=
            ServiceEnvironment.Instance.Internal.TypeSupportFactory.CreateTypeSupport<MyTypeSupport,
       Example.MyType>()
```

The singleton instance

9.196 Rti.Utility.NetworkCapture Class Reference

Allows capturing the network traffic that one or more DomainParticipants send or receive into a pcap file.

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()

  Stop capturing traffic.
- void **Pause** ()

  Pause capturing traffic.
- void **Resume** ()

  Resume capturing traffic.

Static Public Member Functions

- static void **Enable** ()

  Enable Network Capture. To enable, this function must be called before Start and before the creation of any Domain↩ Participant for which you want to capture traffic.
- static void **Disable** ()

  Disable Network Capture.
- static void **SetDefaultParams** (**NetworkCaptureParams** parameters)

  *Set the default **NetworkCaptureParams** (p. 811) to be used when the parameters are not specified in **Start()** (p. 810).*
- static **NetworkCapture Start** (string fileName)

  *Start capturing traffic for all DomainParticipants, with the default parameters. The method **Enable** (p. 809) must be called before this.*
- static **NetworkCapture Start** (**DomainParticipant** participant, string fileName)

  *Start capturing traffic for a DomainParticipant, with the default parameters. The method **Enable** (p. 809) must be called before this.*
- static **NetworkCapture Start** (string fileName, **NetworkCaptureParams** parameters)

  *Start capturing traffic for all DomainParticipants, with specific parameters. The method **Enable** (p. 809) must be called before this.*
- static **NetworkCapture Start** (**DomainParticipant** participant, string fileName, **NetworkCaptureParams** parameters)

  *Start capturing traffic for a DomainParticipant, with specific parameters. The method **Enable** (p. 809) must be called before this.*

9.196.1 Detailed Description

Allows capturing the network traffic that one or more DomainParticipants send or receive into a pcap file.

The full documentation is available in the C API: `NDDSNetworkCapture`

9.196.2 Member Function Documentation

9.196.2.1 Enable()

```
static void Rti.Utility.NetworkCapture.Enable ( )  [inline], [static]
```

Enable Network Capture. To enable, this function must be called before Start and before the creation of any Domain↩ Participant for which you want to capture traffic.

The full documentation is available in the C API: `NDDSNetworkCapture_enable`

9.196.2.2 Disable()

```
static void Rti.Utility.NetworkCapture.Disable ( )  [inline], [static]
```

Disable Network Capture.

The full documentation is available in the C API: `NDDSNetworkCapture_disable`

9.196.2.3 SetDefaultParams()

```
static void Rti.Utility.NetworkCapture.SetDefaultParams (
              NetworkCaptureParams parameters )  [inline], [static]
```

Set the default **NetworkCaptureParams** (p. 811) to be used when the parameters are not specified in **Start()** (p. 810).

9.196.2.4 Start() [1/4]

```
static  NetworkCapture Rti.Utility.NetworkCapture.Start (
             string fileName )  [inline], [static]
```

Start capturing traffic for all DomainParticipants, with the default parameters. The method **Enable** (p. 809) must be called before this.

Returns

An object that allows pausing or stoping the capture

The full documentation is available in the C API: `NDDSNetworkCapture_start`

9.196.2.5 Start() [2/4]

```
static  NetworkCapture Rti.Utility.NetworkCapture.Start (
              DomainParticipant participant,
             string fileName )  [inline], [static]
```

Start capturing traffic for a DomainParticipant, with the default parameters. The method **Enable** (p. 809) must be called before this.

Returns

An object that allows pausing or stoping the capture

The full documentation is available in the C API: `NDDSNetworkCapturestart(DDSDomainParticipant^, SystemString^)`

9.196.2.6 Start() [3/4]

```
static  NetworkCapture Rti.Utility.NetworkCapture.Start (
             string fileName,
              NetworkCaptureParams parameters )  [inline], [static]
```

Start capturing traffic for all DomainParticipants, with specific parameters. The method **Enable** (p. 809) must be called before this.

Returns

An object that allows pausing or stoping the capture

The full documentation is available in the C API: `NDDSNetworkCapture_start`

9.196.2.7 Start() [4/4]

```
static NetworkCapture Rti.Utility.NetworkCapture.Start (
            DomainParticipant participant,
           string fileName,
            NetworkCaptureParams parameters ) [inline], [static]
```

Start capturing traffic for a DomainParticipant, with specific parameters. The method **Enable** (p. 809) must be called before this.

Returns

An object that allows pausing or stoping the capture

The full documentation is available in the C API:`NDDSNetworkCapturestart(DDSDomainParticipant^, SystemString^)`

9.196.2.8 Dispose()

```
void Rti.Utility.NetworkCapture.Dispose ( ) [inline]
```

Stop capturing traffic.

The full documentation is available in the C API:`NDDSNetworkCapture_stop`

9.196.2.9 Pause()

```
void Rti.Utility.NetworkCapture.Pause ( ) [inline]
```

Pause capturing traffic.

The full documentation is available in the C API:`NDDSNetworkCapture_pause`

9.196.2.10 Resume()

```
void Rti.Utility.NetworkCapture.Resume ( ) [inline]
```

Resume capturing traffic.

The full documentation is available in the C API:`NDDSNetworkCapture_pause`

9.197 Rti.Utility.NetworkCaptureParams Class Reference

Configures the options of a **NetworkCapture** (p. 808).

Inherits IEquatable< NetworkCaptureParams >.

Public Types

- enum **TrafficKind** {
  None = 0 ,
  Out = 1 ,
  In = 2 ,
  Default = All ,
  All = Out | In }

  *Indicates the traffic direction in **Traffic** (p. 815)*
- enum **ContentKind** {
  None = 0 ,
  Default = None ,
  User = 1 ,
  Encrypted = 2 ,
  All = User | Encrypted }

  *Indicates the kind of content in **DroppedContent** (p. 814)*

Public Member Functions

- **NetworkCaptureParams** ()

  Creates a new instance with the default parameters
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**NetworkCaptureParams** other)

  Compares for equality

Properties

- IList< string > **Transports** `[get, set]`

  List of transports to capture
- **ContentKind DroppedContent** `[get, set]`

  Exclude contents from the capture file.
- **TrafficKind Traffic** `[get, set]`

  Traffic direction to capture
- bool **ParseEncryptedContent** `[get, set]`

  If secure traffic should be decrypted or not.
- **ThreadSettings CheckpointThreadSettings** `[get, set]`

  The properties of the checkpoint thread.
- int **FrameQueueSize** `[get, set]`

  Size of the frame queue (Bytes).

9.197.1 Detailed Description

Configures the options of a **NetworkCapture** (p. 808).

9.197.2 Member Enumeration Documentation

9.197.2.1 TrafficKind

enum **Rti.Utility.NetworkCaptureParams.TrafficKind**

Indicates the traffic direction in **Traffic** (p. 815)

Enumerator

None	None
Out	Output traffic
In	Input traffic
Default	Default configuration (All)
All	Input and output traffic

9.197.2.2 ContentKind

enum **Rti.Utility.NetworkCaptureParams.ContentKind**

Indicates the kind of content in **DroppedContent** (p. 814)

Enumerator

None	None
Default	Default configuration (None)
User	User content
Encrypted	Encrypted content
All	All content

9.197.3 Constructor & Destructor Documentation

9.197.3.1 NetworkCaptureParams()

Rti.Utility.NetworkCaptureParams.NetworkCaptureParams ( ) [inline]

Creates a new instance with the default parameters

9.197.4 Member Function Documentation

9.197.4.1 GetHashCode()

```
override int Rti.Utility.NetworkCaptureParams.GetHashCode ( )  [inline]
```

Gets the hash code

9.197.4.2 Equals() [1/2]

```
override bool Rti.Utility.NetworkCaptureParams.Equals (
            object other )
```

Compares for equality

9.197.4.3 Equals() [2/2]

```
bool Rti.Utility.NetworkCaptureParams.Equals (
             NetworkCaptureParams other )  [inline]
```

Compares for equality

9.197.5 Property Documentation

9.197.5.1 Transports

```
IList<string> Rti.Utility.NetworkCaptureParams.Transports  [get], [set]
```

List of transports to capture

The full documentation is available in the `C API:` NDDSNetworkCaptureParams_t_transports

9.197.5.2 DroppedContent

ContentKind Rti.Utility.NetworkCaptureParams.DroppedContent [get], [set]

Exclude contents from the capture file.

The full documentation is available in the C API: NDDSNetworkCaptureParams_t_dropped_content

9.197.5.3 Traffic

TrafficKind Rti.Utility.NetworkCaptureParams.Traffic [get], [set]

Traffic direction to capture

The full documentation is available in the C API: NDDSNetworkCaptureParams_t_traffic

9.197.5.4 ParseEncryptedContent

bool Rti.Utility.NetworkCaptureParams.ParseEncryptedContent [get], [set]

If secure traffic should be decrypted or not.

The full documentation is available in the C API: NDDSNetworkCaptureParams_t_parse_encrypted_↩ content

9.197.5.5 CheckpointThreadSettings

ThreadSettings Rti.Utility.NetworkCaptureParams.CheckpointThreadSettings [get], [set]

The properties of the checkpoint thread.

The full documentation is available in the C API: NDDSNetworkCaptureParams_t_checkpoint_↩ thread_settings

9.197.5.6 FrameQueueSize

int Rti.Utility.NetworkCaptureParams.FrameQueueSize [get], [set]

Size of the frame queue (Bytes).

The full documentation is available in the C API: NDDSNetworkCaptureParams_t_frame_queue_size

9.198 Omg.Dds.Core.NotAllowedBySecurityException Class Reference

Indicates that a DDS operation failed because the security plugins do not allow it.

Inherits InvalidOperationException.

9.198.1 Detailed Description

Indicates that a DDS operation failed because the security plugins do not allow it.

9.199 Omg.Dds.Core.NotEnabledException Class Reference

Exception thrown when an operation is invoked on an **Rti.Dds.Core.Entity** (p. 596) that is not enabled.

Inherits InvalidOperationException.

9.199.1 Detailed Description

Exception thrown when an operation is invoked on an **Rti.Dds.Core.Entity** (p. 596) that is not enabled.

9.200 Rti.Types.Octet Struct Reference

A special template type to represent an IDL octet (opaque byte).

9.200.1 Detailed Description

A special template type to represent an IDL octet (opaque byte).

A special type to obtain an IDL octet DynamicType from DynamicTypeFactory.GetPrimitiveType()..

Use this struct as the type parameter for `GetPrimitiveType<T>` when creating a DynamicType for an IDL octet type. For example:

```
using Rti.Types;
using Rti.Core.Xtypes;
var myStruct = typeFactory.BuildStruct()
   .WithName("MyStruct")
   .AddMember(new StructMember("octet_member", typeFactory.GetPrimitiveType<Octet>()))
   .AddMember(new StructMember("uint8_member", typeFactory.GetPrimitiveType<byte>()))
   .Create();
```

9.201 Rti.Types.Builtin.OctetsTopicType Class Reference

An un-keyed topic-type consisting of a sequence of bytes. This type can be used to instantiate a Dds.Topics.Topic<T>.

Inherits IEquatable< OctetsTopicType >.

Public Member Functions

- **OctetsTopicType** ()
  Creates an empty sequence
- **OctetsTopicType** (**Sequence**< byte > sharedSequence)
  Creates an object that shares the sequence
- **OctetsTopicType** (**OctetsTopicType** other)
  Creates an object with a copy of the elements of another object
- bool **Equals** (**OctetsTopicType** other)
  Compares for equality
- override bool **Equals** (object obj)
  Compares for equality
- override string **ToString** ()
  Displays the sequence of bytes
- override int **GetHashCode** ()
  Calculates a simple hash code

Properties

- **ISequence**< byte > **Value** `[get]`
  The sequence of bytes

9.201.1 Detailed Description

An un-keyed topic-type consisting of a sequence of bytes. This type can be used to instantiate a Dds.Topics.Topic<T>.

This type is equivalent to the following IDL type:

```
struct OctetsTopicType {
    sequence<octet, 2048> value;
};
```

Note that the maximum sequence size that can be published with this type is 2048 bytes.

9.201.2 Constructor & Destructor Documentation

9.201.2.1 OctetsTopicType() [1/3]

```
Rti.Types.Builtin.OctetsTopicType.OctetsTopicType ( )  [inline]
```

Creates an empty sequence

9.201.2.2 OctetsTopicType() [2/3]

```
Rti.Types.Builtin.OctetsTopicType.OctetsTopicType (
            Sequence< byte > sharedSequence )  [inline]
```

Creates an object that shares the sequence

9.201.2.3 OctetsTopicType() [3/3]

```
Rti.Types.Builtin.OctetsTopicType.OctetsTopicType (
            OctetsTopicType other )  [inline]
```

Creates an object with a copy of the elements of another object

9.201.3 Member Function Documentation

9.201.3.1 Equals() [1/2]

```
bool Rti.Types.Builtin.OctetsTopicType.Equals (
            OctetsTopicType other )  [inline]
```

Compares for equality

9.201.3.2 Equals() [2/2]

```
override bool Rti.Types.Builtin.OctetsTopicType.Equals (
            object obj )
```

Compares for equality

9.201.3.3 ToString()

```
override string Rti.Types.Builtin.OctetsTopicType.ToString ( )
```

Displays the sequence of bytes

9.201.3.4 GetHashCode()

```
override int Rti.Types.Builtin.OctetsTopicType.GetHashCode ( )  [inline]
```

Calculates a simple hash code

Returns

A hash code based on the length and the first and last bytes

9.201.4 Property Documentation

9.201.4.1 Value

```
ISequence<byte> Rti.Types.Builtin.OctetsTopicType.Value  [get]
```

The sequence of bytes

9.202 Rti.Dds.Core.Status.OfferedDeadlineMissedStatus Class Reference

Notifies of a change in the **StatusMask.OfferedDeadlineMissed** (p. 108) status

Inherits IEquatable< OfferedDeadlineMissedStatus >.

Public Member Functions

- override bool **Equals** (object other)
  Compares for equality
- override int **GetHashCode** ()
  Gets the hash code
- bool **Equals** (**OfferedDeadlineMissedStatus** other)
  Compares for equality
- override string **ToString** ()
  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  Total cumulative count of the number of times the DataWriter failed to write within its offered deadline.
- **InstanceHandle LastInstanceHandle** [get]

  Handle to the last instance in the DataWriter for which an offered deadline was missed.

9.202.1 Detailed Description

Notifies of a change in the **StatusMask.OfferedDeadlineMissed** (p. 108) status

9.202.2 Member Function Documentation

9.202.2.1 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.OfferedDeadlineMissedStatus.Equals (
            object other )
```

Compares for equality

9.202.2.2 GetHashCode()

```
override int Rti.Dds.Core.Status.OfferedDeadlineMissedStatus.GetHashCode ( )
```

Gets the hash code

9.202.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.OfferedDeadlineMissedStatus.Equals (
             OfferedDeadlineMissedStatus other )  [inline]
```

Compares for equality

9.202.2.4 ToString()

```
override string Rti.Dds.Core.Status.OfferedDeadlineMissedStatus.ToString ( )
```

Returns a readable summary of the status

9.202.3 Property Documentation

9.202.3.1 TotalCount

EventCount<int> Rti.Dds.Core.Status.OfferedDeadlineMissedStatus.TotalCount [get]

Total cumulative count of the number of times the DataWriter failed to write within its offered deadline.

*The full documentation is available in the C API:*DDS_OfferedDeadlineMissedStatus_total_count

9.202.3.2 LastInstanceHandle

InstanceHandle Rti.Dds.Core.Status.OfferedDeadlineMissedStatus.LastInstanceHandle [get]

Handle to the last instance in the DataWriter for which an offered deadline was missed.

The full documentation is available in the C API: DDS_OfferedDeadlineMissedStatus_last_↩ instance_handle

9.203 Rti.Dds.Core.Status.OfferedIncompatibleQosStatus Class Reference

A QosPolicy value was incompatible with what was requested.

Inherits IEquatable< OfferedIncompatibleQosStatus >.

Public Member Functions

- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**OfferedIncompatibleQosStatus** other)
  Compares for equality
- override string **ToString** ()
  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  Total cumulative number of times the concerned DataWriter discovered a DataReader for the same Topic, common partition with a requested QoS that is incompatible with that offered by the DataWriter.
- Type **LastPolicy** [get]

  The type of one of the last policy that was found to be incompatible the last time an incompatibility was detected.
- ImmutableDictionary< Type, int > **Policies** [get]

  A dictionary containing for each policy the total number of times that the concerned DataWriter discovered a DataReader for the same Topic and common partition with a requested QoS that is incompatible with that offered by the DataWriter.

9.203.1 Detailed Description

A QosPolicy value was incompatible with what was requested.

The full documentation is available in the C API: `DDS_OfferedIncompatibleQosStatus`

9.203.2 Member Function Documentation

9.203.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.OfferedIncompatibleQosStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.203.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.OfferedIncompatibleQosStatus.Equals (
            object other )
```

Compares for equality

9.203.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.OfferedIncompatibleQosStatus.Equals (
             OfferedIncompatibleQosStatus other )  [inline]
```

Compares for equality

9.203.2.4 ToString()

```
override string Rti.Dds.Core.Status.OfferedIncompatibleQosStatus.ToString ( )
```

Returns a readable summary of the status

9.203.3 Property Documentation

9.203.3.1 TotalCount

```
EventCount<int> Rti.Dds.Core.Status.OfferedIncompatibleQosStatus.TotalCount [get]
```

Total cumulative number of times the concerned DataWriter discovered a DataReader for the same Topic, common partition with a requested QoS that is incompatible with that offered by the DataWriter.

The full documentation is available in the C API: `DDS_OfferedIncompatibleQosStatus_total_count`

9.203.3.2 LastPolicy

```
Type Rti.Dds.Core.Status.OfferedIncompatibleQosStatus.LastPolicy [get]
```

The type of one of the last policy that was found to be incompatible the last time an incompatibility was detected.

The full documentation is available in the C API: `DDS_OfferedIncompatibleQosStatus_last_policy_id`

9.203.3.3 Policies

```
ImmutableDictionary<Type, int> Rti.Dds.Core.Status.OfferedIncompatibleQosStatus.Policies [get]
```

A dictionary containing for each policy the total number of times that the concerned DataWriter discovered a DataReader for the same Topic and common partition with a requested QoS that is incompatible with that offered by the DataWriter.

The full documentation is available in the C API: `DDS_OfferedIncompatibleQosStatus_policies`

9.204 Omg.Types.OptionalAttribute Class Reference

Indicates that a field in a topic-type is optional (IDL @optional annotation) annotation)

Inherits Attribute.

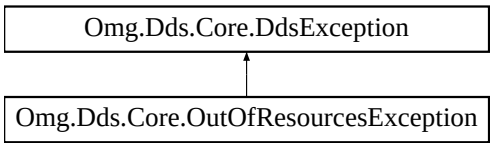
9.204.1 Detailed Description

Indicates that a field in a topic-type is optional (IDL @optional annotation) annotation)

9.205 Omg.Dds.Core.OutOfResourcesException Class Reference

Indicates that a DDS operation ran out of the resources needed to complete

Inheritance diagram for Omg.Dds.Core.OutOfResourcesException:



Additional Inherited Members

9.205.1 Detailed Description

Indicates that a DDS operation ran out of the resources needed to complete

9.206 Rti.Dds.Core.Policy.Ownership Class Reference

Specifies whether it is allowed for multiple Publication.DataWriter<T> entities to write the same instance of the data and if so, how these modifications should be arbitrated.

Inherits IEquatable< Ownership >.

Public Member Functions

- **Ownership** (**OwnershipKind** kind)

  Creates a new instance
- **Ownership With** (Action< **OwnershipBuilder** > build)

  *Creates a new **Ownership** (p. 824) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Ownership** other)

  Compares for equality

Properties

- **OwnershipKind Kind** [get]

  The kind of ownership
- static **Ownership Default** [get]

  *Singleton containing the default value of a **Ownership** (p. 824)*

9.206.1 Detailed Description

Specifies whether it is allowed for multiple Publication.DataWriter<T> entities to write the same instance of the data and if so, how these modifications should be arbitrated.

9.206.2 Constructor & Destructor Documentation

9.206.2.1 Ownership()

```
Rti.Dds.Core.Policy.Ownership.Ownership (
              OwnershipKind kind )
```

Creates a new instance

Parameters

kind	The value for **Kind** (p. 826)

9.206.3 Member Function Documentation

9.206.3.1 With()

```
Ownership Rti.Dds.Core.Policy.Ownership.With (
            Action<  OwnershipBuilder > build )  [inline]
```

Creates a new **Ownership** (p. 824) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Ownership** (p. 824).

Returns

A new **Ownership** (p. 824) with the changes applied by the Action

9.206.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Ownership.GetHashCode ( )  [inline]
```

Gets the hash code

9.206.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Ownership.Equals (
            object other )
```

Compares for equality

9.206.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Ownership.Equals (
             Ownership other )  [inline]
```

Compares for equality

9.206.4 Property Documentation

9.206.4.1 Kind

```
OwnershipKind Rti.Dds.Core.Policy.Ownership.Kind  [get]
```

The kind of ownership

The full documentation is available in the C API: DDS_OwnershipQosPolicy_kind

9.206.4.2 Default

```
Ownership Rti.Dds.Core.Policy.Ownership.Default  [static], [get]
```

Singleton containing the default value of a **Ownership** (p. 824)

9.207 Rti.Dds.Core.Policy.OwnershipBuilder Class Reference

A modifiable type used to create an immutable **Ownership** (p. 824)

Public Member Functions

- **OwnershipBuilder** (**Ownership** data)

  Creates a builder with the values of an existing immutable instance
- **Ownership Build** ()

  *Creates a new **Ownership** (p. 824) immutable object from this one.*

Properties

- **OwnershipKind Kind** `[get, set]`

  The kind of ownership

9.207.1 Detailed Description

A modifiable type used to create an immutable **Ownership** (p. 824)

9.207.2 Constructor & Destructor Documentation

9.207.2.1 OwnershipBuilder()

```
Rti.Dds.Core.Policy.OwnershipBuilder.OwnershipBuilder (
            Ownership data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.207.3 Member Function Documentation

9.207.3.1 Build()

```
Ownership Rti.Dds.Core.Policy.OwnershipBuilder.Build ( )
```

Creates a new **Ownership** (p. 824) immutable object from this one.

9.207.4 Property Documentation

9.207.4.1 Kind

```
OwnershipKind Rti.Dds.Core.Policy.OwnershipBuilder.Kind  [get], [set]
```

The kind of ownership

The full documentation is available in the C API:`DDS_OwnershipQosPolicy_kind`

9.208 Rti.Dds.Core.Policy.OwnershipStrength Class Reference

Specifies the value of the strength used to arbitrate among multiple Publication.DataWriter<T> objects that attempt to modify the same instance of a data type.

Inherits IEquatable< OwnershipStrength >.

Public Member Functions

- **OwnershipStrength** (int value)

  *Creates a new **OwnershipStrength** (p. 828) object using its value*
- **OwnershipStrength With** (Action< **OwnershipStrengthBuilder** > build)

  *Creates a new **OwnershipStrength** (p. 828) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**OwnershipStrength** other)

  Compares for equality

Properties

- int **Value** [get]

  The strength value used to arbitrate among multiple writers.
- static **OwnershipStrength Default** [get]

  *Singleton containing the default value of a **OwnershipStrength** (p. 828)*

9.208.1 Detailed Description

Specifies the value of the strength used to arbitrate among multiple Publication.DataWriter<T> objects that attempt to modify the same instance of a data type.

The full documentation is available in the C API: `DDS_OwnershipStrengthQosPolicy`

9.208.2 Constructor & Destructor Documentation

9.208.2.1 OwnershipStrength()

```
Rti.Dds.Core.Policy.OwnershipStrength.OwnershipStrength (
            int value )
```

Creates a new **OwnershipStrength** (p. 828) object using its value

9.208.3 Member Function Documentation

9.208.3.1 With()

```
OwnershipStrength Rti.Dds.Core.Policy.OwnershipStrength.With (
            Action< OwnershipStrengthBuilder > build )  [inline]
```

Creates a new **OwnershipStrength** (p. 828) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **OwnershipStrength** (p. 828).

Returns

A new **OwnershipStrength** (p. 828) with the changes applied by the Action

9.208.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.OwnershipStrength.GetHashCode ( )  [inline]
```

Gets the hash code

9.208.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.OwnershipStrength.Equals (
            object other )
```

Compares for equality

9.208.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.OwnershipStrength.Equals (
             OwnershipStrength other )  [inline]
```

Compares for equality

9.208.4 Property Documentation

9.208.4.1 Value

```
int Rti.Dds.Core.Policy.OwnershipStrength.Value  [get]
```

The strength value used to arbitrate among multiple writers.

The full documentation is available in the C API: `DDS_OwnershipStrengthQosPolicy_value`

9.208.4.2 Default

```
OwnershipStrength Rti.Dds.Core.Policy.OwnershipStrength.Default  [static], [get]
```

Singleton containing the default value of a **OwnershipStrength** (p. 828)

9.209 Rti.Dds.Core.Policy.OwnershipStrengthBuilder Class Reference

A modifiable type used to create an immutable **OwnershipStrength** (p. 828)

Public Member Functions

- **OwnershipStrengthBuilder** (**OwnershipStrength** data)

  Creates a builder with the values of an existing immutable instance
- **OwnershipStrength Build** ()

  *Creates a new **OwnershipStrength** (p. 828) immutable object from this one.*

Properties

- int **Value** `[get, set]`

  The strength value used to arbitrate among multiple writers.

9.209.1 Detailed Description

A modifiable type used to create an immutable **OwnershipStrength** (p. 828)

9.209.2 Constructor & Destructor Documentation

9.209.2.1 OwnershipStrengthBuilder()

```
Rti.Dds.Core.Policy.OwnershipStrengthBuilder.OwnershipStrengthBuilder (
            OwnershipStrength data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.209.3 Member Function Documentation

9.209.3.1 Build()

```
OwnershipStrength Rti.Dds.Core.Policy.OwnershipStrengthBuilder.Build ( )
```

Creates a new **OwnershipStrength** (p. 828) immutable object from this one.

9.209.4 Property Documentation

9.209.4.1 Value

```
int Rti.Dds.Core.Policy.OwnershipStrengthBuilder.Value  [get], [set]
```

The strength value used to arbitrate among multiple writers.

The full documentation is available in the `C API:DDS_OwnershipStrengthQosPolicy_value`

9.210 Rti.Dds.Topics.ParticipantBuiltinTopicData Class Reference

Entry created when a **Domain.DomainParticipant** (p. 451) is discovered.

Inherits IEquatable< ParticipantBuiltinTopicData >.

Public Member Functions

- **ParticipantBuiltinTopicData** (in **BuiltinTopicKey** key)

  *Creates a new **ParticipantBuiltinTopicData** (p. 832) using a **BuiltinTopicKey** (p. 199).*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ParticipantBuiltinTopicData** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the data

Properties

- **BuiltinTopicKey Key** `[get]`

  DCPS key to distinguish entries.
- **UserData UserData** `[get]`

  Policy of the corresponding DomainParticipant.
- **Property Property** `[get]`

  Name value pair properties to be stored with domain participant
- Version **RtpsProtocolVersion** `[get]`

  Version number of the RTPS wire protocol used.
- **VendorId RtpsVendorId** `[get]`

  ID of vendor implementing the RTPS wire protocol.
- uint **DdsBuiltinEndpoints** `[get]`

  Bitmap of builtin endpoints supported by the participant.
- uint **AvailableBuiltinEndpointsExt** `[get]`

  Extended bitmap of builtin endpoints available in the participant.
- ImmutableList< **Locator** > **DefaultUnicastLocators** `[get]`

Unicast locators used when individual entities do not specify unicast locators.

- Version **ProductVersion** [get]

  This is a vendor specific parameter. It gives the current version for rti-dds.

- **EntityName ParticipantName** [get]

  The participant name and role name.

- **Partition Partition** [get]

  The partition

- int **DomainId** [get]

  Domain *(p. 110) ID associated with the discovered participant.*

- ImmutableList< **TransportInfo** > **TransportInfos** [get]

  A sequence of TransportInfo containing information about each of the installed transports of the discovered participant.

- **Duration ReachabilityLeaseDuration** [get]

  Locator reachability lease duration.

- bool **PartialConfiguration** [get]

  Flag that indicates whether a ***ParticipantBuiltinTopicData*** *(p. 832) only contains bootstrapping information.*

- static **ParticipantBuiltinTopicData Default** = CreateDefault() [get]

  Singleton containing the default value of a ***ParticipantBuiltinTopicData*** *(p. 832)*

9.210.1 Detailed Description

Entry created when a **Domain.DomainParticipant** (p. 451) is discovered.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData

9.210.2 Constructor & Destructor Documentation

9.210.2.1 ParticipantBuiltinTopicData()

```
Rti.Dds.Topics.ParticipantBuiltinTopicData.ParticipantBuiltinTopicData (
            in  BuiltinTopicKey key )
```

Creates a new **ParticipantBuiltinTopicData** (p. 832) using a **BuiltinTopicKey** (p. 199).

The rest of elements are not initialized. This constructor can be used to create a key holder for **Subscription.Data↩ Reader<T>.LookupInstance(T)** (p. 246).

9.210.3 Member Function Documentation

9.210.3.1 GetHashCode()

```
override int Rti.Dds.Topics.ParticipantBuiltinTopicData.GetHashCode ( )
```

Gets the hash code

9.210.3.2 Equals() [1/2]

```
override bool Rti.Dds.Topics.ParticipantBuiltinTopicData.Equals (
            object other )
```

Compares for equality

9.210.3.3 Equals() [2/2]

```
bool Rti.Dds.Topics.ParticipantBuiltinTopicData.Equals (
             ParticipantBuiltinTopicData other )  [inline]
```

Compares for equality

9.210.3.4 ToString()

```
override string Rti.Dds.Topics.ParticipantBuiltinTopicData.ToString ( )  [inline]
```

Returns a readable summary of the data

9.210.4 Property Documentation

9.210.4.1 Key

```
BuiltinTopicKey Rti.Dds.Topics.ParticipantBuiltinTopicData.Key  [get]
```

DCPS key to distinguish entries.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_key

9.210.4.2 UserData

UserData Rti.Dds.Topics.ParticipantBuiltinTopicData.UserData [get]

Policy of the corresponding DomainParticipant.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_user_data

9.210.4.3 Property

Property Rti.Dds.Topics.ParticipantBuiltinTopicData.Property [get]

Name value pair properties to be stored with domain participant

The full documentation is available in the C API: property_qos

9.210.4.4 RtpsProtocolVersion

Version Rti.Dds.Topics.ParticipantBuiltinTopicData.RtpsProtocolVersion [get]

Version number of the RTPS wire protocol used.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_rtps_protocol_version

9.210.4.5 RtpsVendorId

VendorId Rti.Dds.Topics.ParticipantBuiltinTopicData.RtpsVendorId [get]

ID of vendor implementing the RTPS wire protocol.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_rtps_vendor_id

9.210.4.6 DdsBuiltinEndpoints

uint Rti.Dds.Topics.ParticipantBuiltinTopicData.DdsBuiltinEndpoints [get]

Bitmap of builtin endpoints supported by the participant.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_dds_builtin_endpoints

9.210.4.7 AvailableBuiltinEndpointsExt

```
uint Rti.Dds.Topics.ParticipantBuiltinTopicData.AvailableBuiltinEndpointsExt [get]
```

Extended bitmap of builtin endpoints available in the participant.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_available_↩builtin_endpoints_ext

9.210.4.8 DefaultUnicastLocators

```
ImmutableList< Locator> Rti.Dds.Topics.ParticipantBuiltinTopicData.DefaultUnicastLocators [get]
```

Unicast locators used when individual entities do not specify unicast locators.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_default_↩unicast_locators

9.210.4.9 ProductVersion

```
Version Rti.Dds.Topics.ParticipantBuiltinTopicData.ProductVersion [get]
```

This is a vendor specific parameter. It gives the current version for rti-dds.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_product_↩version

9.210.4.10 ParticipantName

```
EntityName Rti.Dds.Topics.ParticipantBuiltinTopicData.ParticipantName [get]
```

The participant name and role name.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_participant↩_name

9.210.4.11 Partition

```
Partition Rti.Dds.Topics.ParticipantBuiltinTopicData.Partition [get]
```

The partition

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_partition

9.210.4.12 DomainId

```
int Rti.Dds.Topics.ParticipantBuiltinTopicData.DomainId [get]
```

Domain (p. 110) ID associated with the discovered participant.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_domain_id

9.210.4.13 TransportInfos

```
ImmutableList< TransportInfo> Rti.Dds.Topics.ParticipantBuiltinTopicData.TransportInfos [get]
```

A sequence of TransportInfo containing information about each of the installed transports of the discovered participant.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_transport_↩ info

9.210.4.14 ReachabilityLeaseDuration

```
Duration Rti.Dds.Topics.ParticipantBuiltinTopicData.ReachabilityLeaseDuration [get]
```

Locator reachability lease duration.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_reachability↩ _lease_duration

9.210.4.15 PartialConfiguration

```
bool Rti.Dds.Topics.ParticipantBuiltinTopicData.PartialConfiguration [get]
```

Flag that indicates whether a **ParticipantBuiltinTopicData** (p. 832) only contains bootstrapping information.

The full documentation is available in the C API: DDS_ParticipantBuiltinTopicData_partial_↩ configuration

9.210.4.16 Default

```
ParticipantBuiltinTopicData Rti.Dds.Topics.ParticipantBuiltinTopicData.Default = CreateDefault()
[static], [get]
```

Singleton containing the default value of a **ParticipantBuiltinTopicData** (p. 832)

9.211 Rti.Dds.Core.Policy.Partition Class Reference

Set of strings that introduces logical partitions in DomainParticipant, Publisher, or Subscriber entities

Inherits IEquatable< Partition >.

Public Member Functions

- **Partition** (IEnumerable< string > value)
  *Creates a **Partition** (p. 838) object with a list of settings*
- **Partition** (ImmutableList< string > value)
  *Creates a **Partition** (p. 838) object with a list of settings*
- **Partition With** (Action< ImmutableList< string >.Builder > build)
  *Creates a new **Partition** (p. 838) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**Partition** other)
  Compares for equality

Properties

- ImmutableList< string > **Name** `[get]`
  A list of partition names
- static **Partition Default** = new **Partition**(ImmutableList<string>.Empty) `[get]`
  *Singleton containing the default value of a **Partition** (p. 838)*

9.211.1 Detailed Description

Set of strings that introduces logical partitions in DomainParticipant, Publisher, or Subscriber entities

The full documentation is available in the C API: `DDS_PartitionQosPolicy`

9.211.2 Constructor & Destructor Documentation

9.211.2.1 Partition() [1/2]

```
Rti.Dds.Core.Policy.Partition.Partition (
            IEnumerable< string > value )  [inline]
```

Creates a **Partition** (p. 838) object with a list of settings

9.211.2.2 Partition() [2/2]

```
Rti.Dds.Core.Policy.Partition.Partition (
            ImmutableList< string > value )
```

Creates a **Partition** (p. 838) object with a list of settings

9.211.3 Member Function Documentation

9.211.3.1 With()

```
Partition Rti.Dds.Core.Policy.Partition.With (
            Action< ImmutableList< string >.Builder > build )  [inline]
```

Creates a new **Partition** (p. 838) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable list with the current values of this object's **Name** (p. 840).

Returns

A new **Partition** (p. 838) with the changes applied by the Action

9.211.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Partition.GetHashCode ( )
```

Gets the hash code

9.211.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Partition.Equals (
            object other )
```

Compares for equality

9.211.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Partition.Equals (
            Partition other )  [inline]
```

Compares for equality

9.211.4 Property Documentation

9.211.4.1 Name

```
ImmutableList<string> Rti.Dds.Core.Policy.Partition.Name  [get]
```

A list of partition names

The full documentation is available in the C API: DDS_PartitionQosPolicy_name

9.211.4.2 Default

```
Partition Rti.Dds.Core.Policy.Partition.Default = new Partition(ImmutableList<string>.Empty)
[static], [get]
```

Singleton containing the default value of a **Partition** (p. 838)

9.212 Rti.Dds.Core.Policy.PersistentStorageSettings Class Reference

Configures durable writer history and durable reader state.

Inherits IEquatable< PersistentStorageSettings >.

Public Member Functions

- **PersistentStorageSettings With** (Action< **PersistentStorageSettingsBuilder** > build)

  *Creates a new **PersistentStorageSettings** (p. 840) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**PersistentStorageSettings** other)

  Compares for equality

Properties

- bool **Enable** [get]

  Enables durable writer history in a DataWriter and durable reader state in a DataReader.
- string **FileName** [get]

  The file name where the durable writer history or durable reader state will be stored.
- string **TraceFileName** [get]

  The file name where to store the SQL statements executed when loading and storing the durable writer history or durable reader state.
- **PersistentJournalKind JournalKind** [get]

  Sets the journal mode of the persistent storage.
- **PersistentSynchronizationKind SynchronizationKind** [get]

  Sets the level of synchronization with the physical disk.
- bool **Vacuum** [get]

  Sets the auto-vacuum status of the storage.
- bool **Restore** [get]

  Indicates if the persisted writer history or reader state must be restored.
- **AllocationSettings WriterInstanceCacheAllocation** [get]

  Configures the resource limits associated with the instance durable writer history cache.
- **AllocationSettings WriterSampleCacheAllocation** [get]

  Configures the resource limits associated with the sample durable writer history cache.
- bool **WriterMemoryState** [get]

  Determines how much state will be kept in memory by the durable writer history in order to avoid accessing the persistent storage in disk.
- uint **ReaderCheckpointFrequency** [get]

  Controls how often the reader state is stored into the database.
- static **PersistentStorageSettings Default** [get]

  Singleton containing the default value of a ***PersistentStorageSettings*** *(*p. 840*)*

9.212.1 Detailed Description

Configures durable writer history and durable reader state.

The full documentation is available in the C API: `DDS_PersistentStorageSettings`

9.212.2 Member Function Documentation

9.212.2.1 With()

```
PersistentStorageSettings Rti.Dds.Core.Policy.PersistentStorageSettings.With (
            Action< PersistentStorageSettingsBuilder > build ) [inline]
```

Creates a new **PersistentStorageSettings** (p. 840) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **PersistentStorageSettings** (p. 840)

Returns

A new **PersistentStorageSettings** (p. 840) with the changes applied by the Action

9.212.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.PersistentStorageSettings.Equals (
            object other )
```

Compares for equality

9.212.2.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.PersistentStorageSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.212.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.PersistentStorageSettings.Equals (
             PersistentStorageSettings other )  [inline]
```

Compares for equality

9.212.3 Property Documentation

9.212.3.1 Enable

```
bool Rti.Dds.Core.Policy.PersistentStorageSettings.Enable  [get]
```

Enables durable writer history in a DataWriter and durable reader state in a DataReader.

The full documentation is available in the C API: DDS_PersistentStorageSettings_enable

9.212.3.2 FileName

```
string Rti.Dds.Core.Policy.PersistentStorageSettings.FileName [get]
```

The file name where the durable writer history or durable reader state will be stored.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_file_name`

9.212.3.3 TraceFileName

```
string Rti.Dds.Core.Policy.PersistentStorageSettings.TraceFileName [get]
```

The file name where to store the SQL statements executed when loading and storing the durable writer history or durable reader state.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_trace_file_name`

9.212.3.4 JournalKind

```
PersistentJournalKind Rti.Dds.Core.Policy.PersistentStorageSettings.JournalKind [get]
```

Sets the journal mode of the persistent storage.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_journal_kind`

9.212.3.5 SynchronizationKind

```
PersistentSynchronizationKind Rti.Dds.Core.Policy.PersistentStorageSettings.SynchronizationKind
[get]
```

Sets the level of synchronization with the physical disk.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_synchronization_kind`

9.212.3.6 Vacuum

```
bool Rti.Dds.Core.Policy.PersistentStorageSettings.Vacuum [get]
```

Sets the auto-vacuum status of the storage.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_vacuum`

9.212.3.7 Restore

```
bool Rti.Dds.Core.Policy.PersistentStorageSettings.Restore [get]
```

Indicates if the persisted writer history or reader state must be restored.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_restore`

9.212.3.8 WriterInstanceCacheAllocation

```
AllocationSettings Rti.Dds.Core.Policy.PersistentStorageSettings.WriterInstanceCacheAllocation
[get]
```

Configures the resource limits associated with the instance durable writer history cache.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_writer_instance_cache_allocation`

9.212.3.9 WriterSampleCacheAllocation

```
AllocationSettings Rti.Dds.Core.Policy.PersistentStorageSettings.WriterSampleCacheAllocation
[get]
```

Configures the resource limits associated with the sample durable writer history cache.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_writer_sample_cache_allocation`

9.212.3.10 WriterMemoryState

```
bool Rti.Dds.Core.Policy.PersistentStorageSettings.WriterMemoryState [get]
```

Determines how much state will be kept in memory by the durable writer history in order to avoid accessing the persistent storage in disk.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_writer_memory_state`

9.212.3.11 ReaderCheckpointFrequency

```
uint Rti.Dds.Core.Policy.PersistentStorageSettings.ReaderCheckpointFrequency [get]
```

Controls how often the reader state is stored into the database.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_reader_checkpoint_frequency`

9.212.3.12 Default

PersistentStorageSettings Rti.Dds.Core.Policy.PersistentStorageSettings.Default [static], [get]

Singleton containing the default value of a **PersistentStorageSettings** (p. 840)

9.213 Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder Class Reference

A modifiable type used to create an immutable **PersistentStorageSettings** (p. 840).

Public Member Functions

- **PersistentStorageSettingsBuilder** (**PersistentStorageSettings** data)

  Creates a builder with the values of an existing immutable instance
- **PersistentStorageSettings Build** ()

  *Creates a immutable object (**PersistentStorageSettings** (p. 840)) from this one*

Properties

- bool **Enable** [get, set]

  Enables durable writer history in a DataWriter and durable reader state in a DataReader.
- string **FileName** [get, set]

  The file name where the durable writer history or durable reader state will be stored.
- string **TraceFileName** [get, set]

  The file name where to store the SQL statements executed when loading and storing the durable writer history or durable reader state.
- **PersistentJournalKind JournalKind** [get, set]

  Sets the journal mode of the persistent storage.
- **PersistentSynchronizationKind SynchronizationKind** [get, set]

  Sets the level of synchronization with the physical disk.
- bool **Vacuum** [get, set]

  Sets the auto-vacuum status of the storage.
- bool **Restore** [get, set]

  Indicates if the persisted writer history or reader state must be restored.
- **AllocationSettingsBuilder WriterInstanceCacheAllocation** [get, set]

  Configures the resource limits associated with the instance durable writer history cache.
- **AllocationSettingsBuilder WriterSampleCacheAllocation** [get, set]

  Configures the resource limits associated with the sample durable writer history cache.
- bool **WriterMemoryState** [get, set]

  Determines how much state will be kept in memory by the durable writer history in order to avoid accessing the persistent storage in disk.
- uint **ReaderCheckpointFrequency** [get, set]

  Controls how often the reader state is stored into the database.

9.213.1 Detailed Description

A modifiable type used to create an immutable **PersistentStorageSettings** (p. 840).

9.213.2 Constructor & Destructor Documentation

9.213.2.1 PersistentStorageSettingsBuilder()

```
Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.PersistentStorageSettingsBuilder (
            PersistentStorageSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.213.3 Member Function Documentation

9.213.3.1 Build()

```
PersistentStorageSettings Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.Build ( )
```

Creates a immutable object (**PersistentStorageSettings** (p. 840)) from this one

9.213.4 Property Documentation

9.213.4.1 Enable

```
bool Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.Enable  [get], [set]
```

Enables durable writer history in a DataWriter and durable reader state in a DataReader.

The full documentation is available in the C API: DDS_PersistentStorageSettings_enable

9.213.4.2 FileName

```
string Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.FileName  [get], [set]
```

The file name where the durable writer history or durable reader state will be stored.

The full documentation is available in the C API: DDS_PersistentStorageSettings_file_name

9.213.4.3 TraceFileName

```
string Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.TraceFileName [get], [set]
```

The file name where to store the SQL statements executed when loading and storing the durable writer history or durable reader state.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_trace_file_name`

9.213.4.4 JournalKind

```
PersistentJournalKind Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.JournalKind [get],
[set]
```

Sets the journal mode of the persistent storage.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_journal_kind`

9.213.4.5 SynchronizationKind

```
PersistentSynchronizationKind Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.Synchronization↩
Kind [get], [set]
```

Sets the level of synchronization with the physical disk.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_synchronization↩
_kind`

9.213.4.6 Vacuum

```
bool Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.Vacuum [get], [set]
```

Sets the auto-vacuum status of the storage.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_vacuum`

9.213.4.7 Restore

```
bool Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.Restore [get], [set]
```

Indicates if the persisted writer history or reader state must be restored.

The full documentation is available in the C API: `DDS_PersistentStorageSettings_restore`

9.213.4.8 WriterInstanceCacheAllocation

AllocationSettingsBuilder Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.WriterInstanceCacheAllocation [get], [set]

Configures the resource limits associated with the instance durable writer history cache.

The full documentation is available in the C API: DDS_PersistentStorageSettings_writer_instance_cache_allocation

9.213.4.9 WriterSampleCacheAllocation

AllocationSettingsBuilder Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.WriterSampleCacheAllocation [get], [set]

Configures the resource limits associated with the sample durable writer history cache.

The full documentation is available in the C API: DDS_PersistentStorageSettings_writer_sample_cache_allocation

9.213.4.10 WriterMemoryState

bool Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.WriterMemoryState [get], [set]

Determines how much state will be kept in memory by the durable writer history in order to avoid accessing the persistent storage in disk.

The full documentation is available in the C API: DDS_PersistentStorageSettings_writer_memory_state

9.213.4.11 ReaderCheckpointFrequency

uint Rti.Dds.Core.Policy.PersistentStorageSettingsBuilder.ReaderCheckpointFrequency [get], [set]

Controls how often the reader state is stored into the database.

The full documentation is available in the C API: DDS_PersistentStorageSettings_reader_checkpoint_frequency

9.214 Example.Point Struct Reference

Example (p. 61) C# class generated from the IDL struct **Point** (p. 848), used by **MyType** (p. 801).

Inherits IEquatable< Point >.

Public Member Functions

- **Point** ()
  Creates an new instance with the default values (X and Y are 0)
- **Point** (int **X**, int **Y**)
  Creates an new instance with the given values for each property
- **Point** (**Point** other_)
  Creates a new instance by making a deep copy of an existing one
- bool **Equals** (**Point** other)
  *Compares two **Point** (p. 848) instances for equality (IEquatable implementation)*
- override bool **Equals** (object obj)
  Compares this instance with another object (override of object.Equals)
- override string **ToString** ()
  Provides a readable string representation
- override int **GetHashCode** ()
  Calculates the hash code based on the values of X and Y

Properties

- int **X** `[get, set]`
  Gets or sets the value for the field X
- int **Y** `[get, set]`
  Gets or sets the value for the field Y

9.214.1 Detailed Description

Example (p. 61) C# class generated from the IDL `struct` **`Point`** (p. 848), used by **MyType** (p. 801).

See also

Example.MyType (p. 801)

9.214.2 Constructor & Destructor Documentation

9.214.2.1 Point() [1/3]

```
Example.Point.Point ( )  [inline]
```

Creates an new instance with the default values (X and Y are 0)

9.214.2.2 Point() [2/3]

```
Example.Point.Point (
            int X,
            int Y )  [inline]
```

Creates an new instance with the given values for each property

Parameters

X	The value for the property X
Y	The value for the property Y

9.214.2.3 Point() [3/3]

```
Example.Point.Point (
              Point other_ )  [inline]
```

Creates a new instance by making a deep copy of an existing one

Parameters

*other_*	The object to copy

9.214.3 Member Function Documentation

9.214.3.1 Equals() [1/2]

```
bool Example.Point.Equals (
              Point other )  [inline]
```

Compares two **Point** (p. 848) instances for equality (IEquatable implementation)

Parameters

other	The instance to compare

Returns

Whether the two instances have the same values of X and Y

9.214.3.2 Equals() [2/2]

```
override bool Example.Point.Equals (
             object obj )
```

Compares this instance with another object (override of object.Equals)

Parameters

obj	Any object

Returns

True only if obj is of type **Point** (p. 848) and both are equal

9.214.3.3 ToString()

```
override string Example.Point.ToString ( )
```

Provides a readable string representation

PointSupport (p. 852) provides additional options (such as XML and JSON formatting) via **Rti.Dds.Topics.Type↩ Support<T>.ToString(T, Rti.Dds.Topics.PrintFormatProperty)** (p. 1226).

9.214.3.4 GetHashCode()

```
override int Example.Point.GetHashCode ( )  [inline]
```

Calculates the hash code based on the values of X and Y

9.214.4 Property Documentation

9.214.4.1 X

```
int Example.Point.X  [get], [set]
```

Gets or sets the value for the field X

9.214.4.2 Y

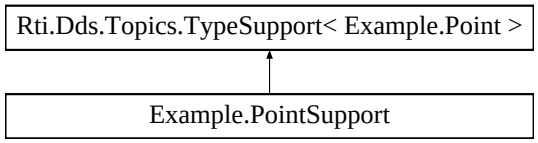
```
int Example.Point.Y  [get], [set]
```

Gets or sets the value for the field Y

9.215 Example.PointSupport Class Reference

Provides utilities for **Point** (p. 848) (this class is a singleton).

Inheritance diagram for Example.PointSupport:



Properties

- static **PointSupport Instance** [get]
  The singleton instance

Additional Inherited Members

9.215.1 Detailed Description

Provides utilities for **Point** (p. 848) (this class is a singleton).

All the methods are properties are defined in the base class, Rti.Dds.Topics.TypeSupport<T>

9.215.2 Property Documentation

9.215.2.1 Instance

```
PointSupport Example.PointSupport.Instance  [static], [get]
```

Initial value:

```
=
          ServiceEnvironment.Instance.Internal.TypeSupportFactory.CreateTypeSupport<PointSupport,
      Example.Point>()
```

The singleton instance

9.216 Omg.Dds.Core.PreconditionNotMetException Class Reference

Exception thrown when a precondition for an operation is not met.

Inherits InvalidOperationException.

9.216.1 Detailed Description

Exception thrown when a precondition for an operation is not met.

9.217 Rti.Dds.Core.Policy.Presentation Class Reference

Specifies how the samples representing changes to data instances are presented to a subscribing application.

Inherits IEquatable< Presentation >.

Public Member Functions

- **Presentation With** (Action< **PresentationBuilder** > build)

  *Creates a new **Presentation** (p. 853) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Presentation** other)

  Compares for equality

Properties

- **PresentationAccessScopeKind AccessScope** `[get]`

  Determines the largest scope spanning the entities for which the order and coherency of changes can be preserved.
- bool **CoherentAccess** `[get]`

  Specifies support for coherent access. Controls whether coherent access is supported within the scope `access_scope`.
- bool **OrderedAccess** `[get]`

  Specifies support for ordered access to the samples received at the subscription end. Controls whether ordered access is supported within the scope `access_scope`.
- bool **DropIncompleteCoherentSet** `[get]`

  *Indicates whether or not a Subscription.DataReader<T> should lose samples from an incomplete coherent set (one for which not all the samples were received). Such samples are reported as lost in the SAMPLE_LOST **Status** (p. 103).*
- static **Presentation Default** `[get]`

  *Singleton containing the default value of a **Presentation** (p. 853)*

9.217.1 Detailed Description

Specifies how the samples representing changes to data instances are presented to a subscribing application.

The full documentation is available in the C API: `DDS_PresentationQosPolicy`

9.217.2 Member Function Documentation

9.217.2.1 With()

```
Presentation Rti.Dds.Core.Policy.Presentation.With (
            Action< PresentationBuilder > build )  [inline]
```

Creates a new **Presentation** (p. 853) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Presentation** (p. 853).

Returns

A new **Presentation** (p. 853) with the changes applied by the Action

9.217.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Presentation.GetHashCode ( )  [inline]
```

Gets the hash code

9.217.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Presentation.Equals (
            object other )
```

Compares for equality

9.217.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Presentation.Equals (
             Presentation other )  [inline]
```

Compares for equality

9.217.3 Property Documentation

9.217.3.1 AccessScope

PresentationAccessScopeKind Rti.Dds.Core.Policy.Presentation.AccessScope [get]

Determines the largest scope spanning the entities for which the order and coherency of changes can be preserved.

The full documentation is available in the C API: DDS_PresentationQosPolicy_access_scope

9.217.3.2 CoherentAccess

bool Rti.Dds.Core.Policy.Presentation.CoherentAccess [get]

Specifies support for *coherent* access. Controls whether coherent access is supported within the scope access_scope.

The full documentation is available in the C API: DDS_PresentationQosPolicy_coherent_access

9.217.3.3 OrderedAccess

bool Rti.Dds.Core.Policy.Presentation.OrderedAccess [get]

Specifies support for *ordered* access to the samples received at the subscription end. Controls whether ordered access is supported within the scope access_scope.

The full documentation is available in the C API: DDS_PresentationQosPolicy_ordered_access

9.217.3.4 DropIncompleteCoherentSet

bool Rti.Dds.Core.Policy.Presentation.DropIncompleteCoherentSet [get]

Indicates whether or not a Subscription.DataReader<T> should lose samples from an incomplete coherent set (one for which not all the samples were received). Such samples are reported as lost in the SAMPLE_LOST **Status** (p. 103).

The full documentation is available in the C API: DDS_PresentationQosPolicy_drop_incomplete_coherent_set

9.217.3.5 Default

Presentation Rti.Dds.Core.Policy.Presentation.Default [static], [get]

Singleton containing the default value of a **Presentation** (p. 853)

9.218 Rti.Dds.Core.Policy.PresentationBuilder Class Reference

A modifiable type used to create an immutable **Presentation** (p. 853)

Public Member Functions

- **PresentationBuilder** (**Presentation** data)

  Creates a builder with the values of an existing immutable instance
- **Presentation Build** ()

  *Creates a new **Presentation** (p. 853) immutable object from this one.*

Properties

- **PresentationAccessScopeKind AccessScope** `[get, set]`

  Determines the largest scope spanning the entities for which the order and coherency of changes can be preserved.
- bool **CoherentAccess** `[get, set]`

  Specifies support for coherent access. Controls whether coherent access is supported within the scope `access_scope`.
- bool **OrderedAccess** `[get, set]`

  Specifies support for ordered access to the samples received at the subscription end. Controls whether ordered access is supported within the scope `access_scope`.
- bool **DropIncompleteCoherentSet** `[get, set]`

  *Indicates whether or not a Subscription.DataReader<T> should lose samples from an incomplete coherent set (one for which not all the samples were received). Such samples are reported as lost in the SAMPLE_LOST **Status** (p. 103).*

9.218.1 Detailed Description

A modifiable type used to create an immutable **Presentation** (p. 853)

9.218.2 Constructor & Destructor Documentation

9.218.2.1 PresentationBuilder()

```
Rti.Dds.Core.Policy.PresentationBuilder.PresentationBuilder (
            Presentation data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.218.3 Member Function Documentation

9.218.3.1 Build()

```
Presentation Rti.Dds.Core.Policy.PresentationBuilder.Build ( )
```

Creates a new **Presentation** (p. 853) immutable object from this one.

9.218.4 Property Documentation

9.218.4.1 AccessScope

```
PresentationAccessScopeKind Rti.Dds.Core.Policy.PresentationBuilder.AccessScope [get], [set]
```

Determines the largest scope spanning the entities for which the order and coherency of changes can be preserved.

The full documentation is available in the C API: `DDS_PresentationQosPolicy_access_scope`

9.218.4.2 CoherentAccess

```
bool Rti.Dds.Core.Policy.PresentationBuilder.CoherentAccess [get], [set]
```

Specifies support for *coherent* access. Controls whether coherent access is supported within the scope `access_scope`.

The full documentation is available in the C API: `DDS_PresentationQosPolicy_coherent_access`

9.218.4.3 OrderedAccess

```
bool Rti.Dds.Core.Policy.PresentationBuilder.OrderedAccess [get], [set]
```

Specifies support for *ordered* access to the samples received at the subscription end. Controls whether ordered access is supported within the scope `access_scope`.

The full documentation is available in the C API: `DDS_PresentationQosPolicy_ordered_access`

9.218.4.4 DropIncompleteCoherentSet

```
bool Rti.Dds.Core.Policy.PresentationBuilder.DropIncompleteCoherentSet [get], [set]
```

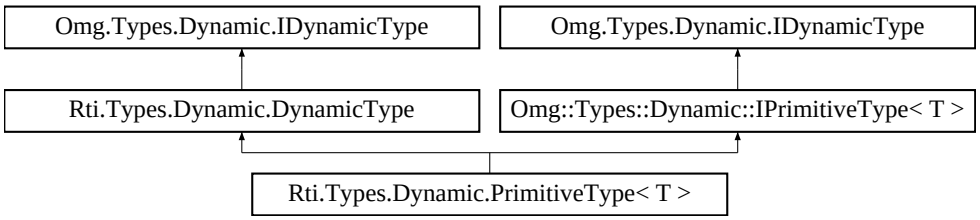
Indicates whether or not a Subscription.DataReader<T> should lose samples from an incomplete coherent set (one for which not all the samples were received). Such samples are reported as lost in the SAMPLE_LOST **Status** (p. 103).

The full documentation is available in the C API: `DDS_PresentationQosPolicy_drop_incomplete_coherent_set`

9.219 Rti.Types.Dynamic.PrimitiveType< T > Class Template Reference

Represents an IDL primitive type. Use **DynamicTypeFactory.GetPrimitiveType<T>** (p. 587).

Inheritance diagram for Rti.Types.Dynamic.PrimitiveType< T >:



Additional Inherited Members

9.219.1 Detailed Description

Represents an IDL primitive type. Use **DynamicTypeFactory.GetPrimitiveType<T>** (p. 587).

Template Parameters

T	The primitive type

9.220 Rti.Dds.Topics.PrintFormatProperty Class Reference

A collection of attributes used to configure how data samples will be formatted when converted to a string.

Inherits IEquatable< PrintFormatProperty >.

Public Member Functions

- override bool **Equals** (object other)

  Compares for equality.
- override int **GetHashCode** ()

  Calculates a hash code.
- bool **Equals** (**PrintFormatProperty** other)

  Compares for equality.

Properties

- **PrintFormatKind Kind** = **PrintFormatKind.Default** `[get, set]`

  The kind of format to be used when converting a data sample to a string.
- bool **PrettyPrint** = true `[get, set]`

  Choose whether to print a data sample in a more readable format or to eliminate all white space.
- bool **EnumAsInt** = false `[get, set]`

  Choose whether to print enum values as integers or as strings.
- bool **IncludeRootElements** = true `[get, set]`

  Choose whether or not to include the root elements of the print format in the output string.

9.220.1 Detailed Description

A collection of attributes used to configure how data samples will be formatted when converted to a string.

See also

Rti.Types.Dynamic.DynamicData.ToString(PrintFormatProperty) (p. 576).

TypeSupport<T>.ToString(T, PrintFormatProperty) (p. 1226)

9.220.2 Member Function Documentation

9.220.2.1 Equals() [1/2]

```
override bool Rti.Dds.Topics.PrintFormatProperty.Equals (
            object other )
```

Compares for equality.

9.220.2.2 GetHashCode()

```
override int Rti.Dds.Topics.PrintFormatProperty.GetHashCode ( )  [inline]
```

Calculates a hash code.

9.220.2.3 Equals() [2/2]

```
bool Rti.Dds.Topics.PrintFormatProperty.Equals (
            PrintFormatProperty other ) [inline]
```

Compares for equality.

9.220.3 Property Documentation

9.220.3.1 Kind

```
PrintFormatKind Rti.Dds.Topics.PrintFormatProperty.Kind = PrintFormatKind.Default [get], [set]
```

The kind of format to be used when converting a data sample to a string.

The full documentation is available in the C API: DDS_PrintFormatProperty_kind

9.220.3.2 PrettyPrint

```
bool Rti.Dds.Topics.PrintFormatProperty.PrettyPrint = true [get], [set]
```

Choose whether to print a data sample in a more readable format or to eliminate all white space.

The full documentation is available in the C API: DDS_PrintFormatProperty_pretty_print

9.220.3.3 EnumAsInt

```
bool Rti.Dds.Topics.PrintFormatProperty.EnumAsInt = false [get], [set]
```

Choose whether to print enum values as integers or as strings.

The full documentation is available in the C API: DDS_PrintFormatProperty_enum_as_int

9.220.3.4 IncludeRootElements

```
bool Rti.Dds.Topics.PrintFormatProperty.IncludeRootElements = true [get], [set]
```

Choose whether or not to include the root elements of the print format in the output string.

The full documentation is available in the C API: DDS_PrintFormatProperty_include_root_↩ elements

9.221 Rti.Dds.Core.Priority Class Reference

Special priority values for policies such as **Rti.Dds.Core.Policy.ChannelSettings.Priority** (p. 214) or **Rti.Dds.Core.↩ Policy.PublishMode.Priority** (p. 905)

Static Public Attributes

- const int **Undefined** = 0

  When assigned this value, the publication priority of the data writer, or channel of a multi-channel data writer, will be set to the lowest possible value.
- const int **Auto** = -1

  When assigned this value, the publication priority of the data writer, or channel of a multi-channel data writer, will be set to the largest priority value of any sample currently queued for publication by the data writer or data writer channel.

9.221.1 Detailed Description

Special priority values for policies such as **Rti.Dds.Core.Policy.ChannelSettings.Priority** (p. 214) or **Rti.Dds.Core.↩ Policy.PublishMode.Priority** (p. 905)

9.221.2 Field Documentation

9.221.2.1 Undefined

```
const int Rti.Dds.Core.Priority.Undefined = 0  [static]
```

When assigned this value, the publication priority of the data writer, or channel of a multi-channel data writer, will be set to the lowest possible value.

For multi-channel data writers, if either the data writer or channel priority is NOT set to this value, then the publication priority of the entity will be set to the defined value.

9.221.2.2 Auto

```
const int Rti.Dds.Core.Priority.Auto = -1  [static]
```

When assigned this value, the publication priority of the data writer, or channel of a multi-channel data writer, will be set to the largest priority value of any sample currently queued for publication by the data writer or data writer channel.

9.222 Rti.Config.ProductVersion Class Reference

Contains the version of the RTI Connext DDS and its different libraries.

Public Member Functions

- override string **ToString** ()

  Combines the DotnetApiVersion and NativeBuildId into a single string

Properties

- Version **DotnetApiVersion** [get]

  The version of the RTI Connext DDS .NET managed assembly
- string **DotnetApiBuildId** [get]

  A full identifier of the Rti.ConnextDds assembly
- string **NativeBuildId** [get]

  A full identifier of the native libraries.
- Version **NativeVersion** [get]

  The version of the native RTI Connext DDS product
- Version **NativeCApiVersion** [get]

  The version of the nddsc native assembly
- Version **NativeCoreVersion** [get]

  The version of the nddscore native assembly

9.222.1 Detailed Description

Contains the version of the RTI Connext DDS and its different libraries.

In most cases, use **ToString** (p. 862) to display all the information.

9.222.2 Member Function Documentation

9.222.2.1 ToString()

```
override string Rti.Config.ProductVersion.ToString ( )
```

Combines the DotnetApiVersion and NativeBuildId into a single string

9.222.3 Property Documentation

9.222.3.1 DotnetApiVersion

```
Version Rti.Config.ProductVersion.DotnetApiVersion [get]
```

The version of the RTI Connext DDS .NET managed assembly

9.222.3.2 DotnetApiBuildId

```
string Rti.Config.ProductVersion.DotnetApiBuildId [get]
```

A full identifier of the Rti.ConnextDds assembly

9.222.3.3 NativeBuildId

```
string Rti.Config.ProductVersion.NativeBuildId [get]
```

A full identifier of the native libraries.

9.222.3.4 NativeVersion

```
Version Rti.Config.ProductVersion.NativeVersion [get]
```

The version of the native RTI Connext DDS product

9.222.3.5 NativeCApiVersion

```
Version Rti.Config.ProductVersion.NativeCApiVersion [get]
```

The version of the nddsc native assembly

9.222.3.6 NativeCoreVersion

```
Version Rti.Config.ProductVersion.NativeCoreVersion [get]
```

The version of the nddscore native assembly

9.223 Rti.Dds.Core.Policy.Profile Class Reference

Configures the way that XML documents containing QoS profiles are loaded by a **QosProvider** (p. 910)

Inherits IEquatable< Profile >.

Public Member Functions

- **Profile With** (Action< **ProfileBuilder** > build)

  *Creates a new **Profile** (p. 864) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Profile** other)

  Compares for equality

Properties

- ImmutableList< string > **StringProfile** [get]

  Sequence of strings containing a XML document to load.
- ImmutableList< string > **UrlProfile** [get]

  Sequence of XML URLs containing a set of XML documents to load.
- bool **IgnoreUserProfile** [get]

  Ignores the file USER_QOS_PROFILES.xml in the current working directory.
- bool **IgnoreEnvironmentProfile** [get]

  Ignores the value of the NDDS_QOS_PROFILES environment variable.
- bool **IgnoreResourceProfile** [get]

  Ignores the file NDDS_QOS_PROFILES.xml.
- static **Profile Default** = CreateDefault() [get]

  *Singleton containing the default value of a **Profile** (p. 864)*

9.223.1 Detailed Description

Configures the way that XML documents containing QoS profiles are loaded by a **QosProvider** (p. 910)

9.223.2 Member Function Documentation

9.223.2.1 With()

```
Profile Rti.Dds.Core.Policy.Profile.With (
            Action< ProfileBuilder > build ) [inline]
```

Creates a new **Profile** (p. 864) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Profile** (p. 864).

Returns

A new **Profile** (p. 864) with the changes applied by the Action

9.223.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Profile.GetHashCode ( )  [inline]
```

Gets the hash code

9.223.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Profile.Equals (
            object other )
```

Compares for equality

9.223.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Profile.Equals (
             Profile other )  [inline]
```

Compares for equality

9.223.3 Property Documentation

9.223.3.1 StringProfile

```
ImmutableList<string> Rti.Dds.Core.Policy.Profile.StringProfile  [get]
```

Sequence of strings containing a XML document to load.

The full documentation is available in the C API: DDS_ProfileQosPolicy_string_profile

9.223.3.2 UrlProfile

```
ImmutableList<string> Rti.Dds.Core.Policy.Profile.UrlProfile [get]
```

Sequence of XML URLs containing a set of XML documents to load.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_url_profile`

9.223.3.3 IgnoreUserProfile

```
bool Rti.Dds.Core.Policy.Profile.IgnoreUserProfile [get]
```

Ignores the file USER_QOS_PROFILES.xml in the current working directory.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_ignore_user_profile`

9.223.3.4 IgnoreEnvironmentProfile

```
bool Rti.Dds.Core.Policy.Profile.IgnoreEnvironmentProfile [get]
```

Ignores the value of the NDDS_QOS_PROFILES environment variable.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_ignore_environment_profile`

9.223.3.5 IgnoreResourceProfile

```
bool Rti.Dds.Core.Policy.Profile.IgnoreResourceProfile [get]
```

Ignores the file NDDS_QOS_PROFILES.xml.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_ignore_resource_profile`

9.223.3.6 Default

```
Profile Rti.Dds.Core.Policy.Profile.Default = CreateDefault() [static], [get]
```

Singleton containing the default value of a **Profile** (p. 864)

9.224 Rti.Dds.Core.Policy.ProfileBuilder Class Reference

A modifiable type used to create an immutable **Profile** (p. 864)

Public Member Functions

- **ProfileBuilder** (**Profile** data)

  Creates a builder with the values of an existing immutable instance
- **Profile Build** ()

  *Creates a new **Profile** (*p. *864) immutable object from this one.*

Properties

- ImmutableList< string >.Builder **StringProfile** `[get, set]`

  Sequence of strings containing an XML document to load.
- ImmutableList< string >.Builder **UrlProfile** `[get, set]`

  Sequence of URLs or URL groups of XML documents to load.
- bool **IgnoreUserProfile** `[get, set]`

  Ignores the file USER_QOS_PROFILES.xml in the current working directory.
- bool **IgnoreEnvironmentProfile** `[get, set]`

  Ignores the value of the NDDS_QOS_PROFILES environment variable.
- bool **IgnoreResourceProfile** `[get, set]`

  Ignores the file NDDS_QOS_PROFILES.xml.

9.224.1 Detailed Description

A modifiable type used to create an immutable **Profile** (p. 864)

9.224.2 Constructor & Destructor Documentation

9.224.2.1 ProfileBuilder()

```
Rti.Dds.Core.Policy.ProfileBuilder.ProfileBuilder (
            Profile data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.224.3 Member Function Documentation

9.224.3.1 Build()

```
Profile Rti.Dds.Core.Policy.ProfileBuilder.Build ( )
```

Creates a new **Profile** (p. 864) immutable object from this one.

9.224.4 Property Documentation

9.224.4.1 StringProfile

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.ProfileBuilder.StringProfile [get], [set]
```

Sequence of strings containing an XML document to load.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_string_profile`

9.224.4.2 UrlProfile

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.ProfileBuilder.UrlProfile [get], [set]
```

Sequence of URLs or URL groups of XML documents to load.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_url_profile`

9.224.4.3 IgnoreUserProfile

```
bool Rti.Dds.Core.Policy.ProfileBuilder.IgnoreUserProfile [get], [set]
```

Ignores the file USER_QOS_PROFILES.xml in the current working directory.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_ignore_user_profile`

9.224.4.4 IgnoreEnvironmentProfile

```
bool Rti.Dds.Core.Policy.ProfileBuilder.IgnoreEnvironmentProfile [get], [set]
```

Ignores the value of the NDDS_QOS_PROFILES environment variable.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_ignore_environment_profile`

9.224.4.5 IgnoreResourceProfile

```
bool Rti.Dds.Core.Policy.ProfileBuilder.IgnoreResourceProfile [get], [set]
```

Ignores the file NDDS_QOS_PROFILES.xml.

The full documentation is available in the C API: `DDS_ProfileQosPolicy_ignore_resource_profile`

9.225 Rti.Dds.Core.Policy.Property Class Reference

Stores key-value string pairs that can configure certain Connext DDS parameters not exposed through QoS policies. It can also store and propagate through the discovery mechanism application-specific information associated with an **Entity** (p. 596).

Inherits IEquatable< Property >.

Data Structures

- struct **Entry**

  *The entry in the **Property** (p. 869) dictionary*

Public Member Functions

- **Property With** (Action< PropertyDict.Builder > build)

  *Creates a new **Property** (p. 869) with a set of changes specified in an Action*
- Dictionary< string, string > **ToStringDictionary** ()

  *Creates a string dictionary from the key-value pairs in this **Property** (p. 869). The returned dictionary doesn't include the values of **Entry.Propagate** (p. 609).*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  *Gets the hash code of **Value** (p. 872).*
- bool **Equals** (**Property** other)

  Compares for equality

Static Public Member Functions

- static **Property FromDictionary** (IDictionary< string, **Entry** > value)

  *Creates a **Property** (p. 869) object with the keys and entries in a Dictionary*
- static **Property FromDictionary** (IDictionary< string, string > dict, bool propagate=false)

  *Creates a **Property** (p. 869) object with the keys and values in a Dictionary, with all entries having the same **Entry.Propagate** (p. 609) value.*
- static **Property FromDictionary** (PropertyDict value)

  *Creates a **Property** (p. 869) object with the key-value pairs in a Dictionary*

Properties

- PropertyDict **Value** `[get]`

  Gets the dictionary containing the properties
- static **Property Default** = new **Property**(PropertyDict.Empty) `[get]`

  Singleton containing the default value, an empty dictionary

9.225.1 Detailed Description

Stores key-value string pairs that can configure certain Connext DDS parameters not exposed through QoS policies. It can also store and propagate through the discovery mechanism application-specific information associated with an **Entity** (p. 596).

The full documentation is available in the *C API:* DDS_PropertyQosPolicy

9.225.2 Member Function Documentation

9.225.2.1 FromDictionary() [1/3]

```
static Property Rti.Dds.Core.Policy.Property.FromDictionary (
            IDictionary< string, Entry > value ) [static]
```

Creates a **Property** (p. 869) object with the keys and entries in a Dictionary

Parameters

value	The key-entry pairs

9.225.2.2 FromDictionary() [2/3]

```
static Property Rti.Dds.Core.Policy.Property.FromDictionary (
            IDictionary< string, string > dict,
            bool propagate = false ) [inline], [static]
```

Creates a **Property** (p. 869) object with the keys and values in a Dictionary, with all entries having the same **Entry.↩ Propagate** (p. 609) value.

Parameters

dict	The key-value pairs
propagate	Whether to propagate all or none of the properties in the dictionary

9.225.2.3 FromDictionary() [3/3]

```
static Property Rti.Dds.Core.Policy.Property.FromDictionary (
```

```
            PropertyDict value )  [static]
```

Creates a **Property** (p. 869) object with the key-value pairs in a Dictionary

Parameters

value	The key-value pairs

9.225.2.4 With()

```
Property Rti.Dds.Core.Policy.Property.With (
            Action< PropertyDict.Builder > build )  [inline]
```

Creates a new **Property** (p. 869) with a set of changes specified in an Action

Parameters

build	An action (typically a lambda function) that receives a dictionary builder containing the current properties and allows adding, removing, or replacing.

Returns

A new **Property** (p. 869) with the changes applied by the Action

9.225.2.5 ToStringDictionary()

```
Dictionary< string, string > Rti.Dds.Core.Policy.Property.ToStringDictionary ( )  [inline]
```

Creates a string dictionary from the key-value pairs in this **Property** (p. 869). The returned dictionary doesn't include the values of **Entry.Propagate** (p. 609).

9.225.2.6 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Property.Equals (
            object other )
```

Compares for equality

9.225.2.7 GetHashCode()

```
override int Rti.Dds.Core.Policy.Property.GetHashCode ( )
```

Gets the hash code of **Value** (p. 872).

9.225.2.8 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Property.Equals (
            Property other )  [inline]
```

Compares for equality

9.225.3 Property Documentation

9.225.3.1 Value

```
PropertyDict Rti.Dds.Core.Policy.Property.Value  [get]
```

Gets the dictionary containing the properties

9.225.3.2 Default

```
 Property Rti.Dds.Core.Policy.Property.Default = new  Property(PropertyDict.Empty)  [static],
[get]
```

Singleton containing the default value, an empty dictionary

9.226 Rti.Dds.Topics.PublicationBuiltinTopicData Class Reference

Entry created when a Publication.DataWriter<T> is discovered in association with its **Publication.Publisher** (p. 884).

Inherits IEquatable< PublicationBuiltinTopicData >.

Public Member Functions

- **PublicationBuiltinTopicData** (in **BuiltinTopicKey** key)

  *Creates a new **PublicationBuiltinTopicData** (p. 872) using a **BuiltinTopicKey** (p. 199).*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**PublicationBuiltinTopicData** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the data

Properties

- **BuiltinTopicKey Key** `[get]`

  Gets the value of Key
- **BuiltinTopicKey ParticipantKey** `[get]`

  Gets the value of ParticipantKey
- string **TopicName** `[get]`

  Gets the value of TopicName
- string **TypeName** `[get]`

  Gets the value of TypeName
- **Durability Durability** `[get]`

  Gets the value of Durability
- **DurabilityService DurabilityService** `[get]`

  Gets the value of DurabilityService
- **Deadline Deadline** `[get]`

  Gets the value of Deadline
- **LatencyBudget LatencyBudget** `[get]`

  Gets the value of LatencyBudget
- **Liveliness Liveliness** `[get]`

  Gets the value of Liveliness
- **Reliability Reliability** `[get]`

  Gets the value of Reliability
- **Lifespan Lifespan** `[get]`

  Gets the value of Lifespan
- **UserData UserData** `[get]`

  Gets the value of UserData
- **Ownership Ownership** `[get]`

  Gets the value of Ownership
- **OwnershipStrength OwnershipStrength** `[get]`

  Gets the value of OwnershipStrength
- **DestinationOrder DestinationOrder** `[get]`

  Gets the value of DestinationOrder
- **Presentation Presentation** `[get]`

  Gets the value of Presentation

- **Partition Partition** [get]
  Gets the value of Partition
- **TopicData TopicData** [get]
  Gets the value of TopicData
- **GroupData GroupData** [get]
  Gets the value of GroupData
- **DataRepresentation Representation** [get]
  Gets the value of Representation
- **DataTags DataTags** [get]
  Gets the value of DataTags
- **DynamicType DynamicType** [get]
  Gets the value of DynamicType
- **BuiltinTopicKey PublisherKey** [get]
  Gets the value of PublisherKey
- **Property Property** [get]
  Gets the value of Property
- ImmutableList< **Locator** > **UnicastLocators** [get]
  Gets the value of UnicastLocators
- **Core.Guid VirtualGuid** [get]
  Gets the value of VirtualGuid
- **Service Service** [get]
  Gets the value of Service
- Version **RtpsProtocolVersion** [get]
  Gets the value of RtpsProtocolVersion
- **VendorId RtpsVendorId** [get]
  Gets the value of RtpsVendorId
- Version **ProductVersion** [get]
  Gets the value of ProductVersion
- **LocatorFilters LocatorFilter** [get]
  Gets the value of LocatorFilter
- bool **DisablePositiveAcks** [get]
  Gets the value of DisablePositiveAcks
- **EntityName PublicationName** [get]
  Gets the value of PublicationName

9.226.1 Detailed Description

Entry created when a Publication.DataWriter<T> is discovered in association with its **Publication.Publisher** (p. 884).

The full documentation is available in the *C API:* DDS_PublicationBuiltinTopicData

9.226.2 Constructor & Destructor Documentation

9.226.2.1 PublicationBuiltinTopicData()

```
Rti.Dds.Topics.PublicationBuiltinTopicData.PublicationBuiltinTopicData (
            in  BuiltinTopicKey key )
```

Creates a new **PublicationBuiltinTopicData** (p. 872) using a **BuiltinTopicKey** (p. 199).

The rest of elements are not initialized. This constructor can be used to create a key holder for **Subscription.Data↩ Reader<T>.LookupInstance(T)** (p. 246).

9.226.3 Member Function Documentation

9.226.3.1 GetHashCode()

```
override int Rti.Dds.Topics.PublicationBuiltinTopicData.GetHashCode ( )
```

Gets the hash code

9.226.3.2 Equals() [1/2]

```
override bool Rti.Dds.Topics.PublicationBuiltinTopicData.Equals (
            object other )
```

Compares for equality

9.226.3.3 Equals() [2/2]

```
bool Rti.Dds.Topics.PublicationBuiltinTopicData.Equals (
             PublicationBuiltinTopicData other )  [inline]
```

Compares for equality

9.226.3.4 ToString()

```
override string Rti.Dds.Topics.PublicationBuiltinTopicData.ToString ( )  [inline]
```

Returns a readable summary of the data

9.226.4 Property Documentation

9.226.4.1 Key

BuiltinTopicKey Rti.Dds.Topics.PublicationBuiltinTopicData.Key [get]

Gets the value of Key

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_key

9.226.4.2 ParticipantKey

BuiltinTopicKey Rti.Dds.Topics.PublicationBuiltinTopicData.ParticipantKey [get]

Gets the value of ParticipantKey

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_participant_key

9.226.4.3 TopicName

string Rti.Dds.Topics.PublicationBuiltinTopicData.TopicName [get]

Gets the value of TopicName

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_topic_name

9.226.4.4 TypeName

string Rti.Dds.Topics.PublicationBuiltinTopicData.TypeName [get]

Gets the value of TypeName

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_type_name

9.226.4.5 Durability

Durability Rti.Dds.Topics.PublicationBuiltinTopicData.Durability [get]

Gets the value of Durability

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_durability

9.226.4.6 DurabilityService

DurabilityService Rti.Dds.Topics.PublicationBuiltinTopicData.DurabilityService [get]

Gets the value of DurabilityService

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_durability_↩ service

9.226.4.7 Deadline

Deadline Rti.Dds.Topics.PublicationBuiltinTopicData.Deadline [get]

Gets the value of Deadline

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_deadline

9.226.4.8 LatencyBudget

LatencyBudget Rti.Dds.Topics.PublicationBuiltinTopicData.LatencyBudget [get]

Gets the value of LatencyBudget

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_latency_↩ budget

9.226.4.9 Liveliness

Liveliness Rti.Dds.Topics.PublicationBuiltinTopicData.Liveliness [get]

Gets the value of Liveliness

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_liveliness

9.226.4.10 Reliability

Reliability Rti.Dds.Topics.PublicationBuiltinTopicData.Reliability [get]

Gets the value of Reliability

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_reliability

9.226.4.11 Lifespan

Lifespan Rti.Dds.Topics.PublicationBuiltinTopicData.Lifespan [get]

Gets the value of Lifespan

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_lifespan

9.226.4.12 UserData

UserData Rti.Dds.Topics.PublicationBuiltinTopicData.UserData [get]

Gets the value of UserData

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_user_data

9.226.4.13 Ownership

Ownership Rti.Dds.Topics.PublicationBuiltinTopicData.Ownership [get]

Gets the value of Ownership

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_ownership

9.226.4.14 OwnershipStrength

OwnershipStrength Rti.Dds.Topics.PublicationBuiltinTopicData.OwnershipStrength [get]

Gets the value of OwnershipStrength

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_ownership_↩
strength

9.226.4.15 DestinationOrder

DestinationOrder Rti.Dds.Topics.PublicationBuiltinTopicData.DestinationOrder [get]

Gets the value of DestinationOrder

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_destination↩
_order

9.226.4.16 Presentation

Presentation Rti.Dds.Topics.PublicationBuiltinTopicData.Presentation [get]

Gets the value of Presentation

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_presentation

9.226.4.17 Partition

Partition Rti.Dds.Topics.PublicationBuiltinTopicData.Partition [get]

Gets the value of Partition

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_partition

9.226.4.18 TopicData

TopicData Rti.Dds.Topics.PublicationBuiltinTopicData.TopicData [get]

Gets the value of TopicData

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_topic_data

9.226.4.19 GroupData

GroupData Rti.Dds.Topics.PublicationBuiltinTopicData.GroupData [get]

Gets the value of GroupData

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_group_data

9.226.4.20 Representation

DataRepresentation Rti.Dds.Topics.PublicationBuiltinTopicData.Representation [get]

Gets the value of Representation

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_representation

9.226.4.21 DataTags

DataTags Rti.Dds.Topics.PublicationBuiltinTopicData.DataTags [get]

Gets the value of DataTags

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_data_tags

9.226.4.22 DynamicType

DynamicType Rti.Dds.Topics.PublicationBuiltinTopicData.DynamicType [get]

Gets the value of DynamicType

The type information if available, or null if it's not available

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_type_code

9.226.4.23 PublisherKey

BuiltinTopicKey Rti.Dds.Topics.PublicationBuiltinTopicData.PublisherKey [get]

Gets the value of PublisherKey

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_publisher_key

9.226.4.24 Property

Property Rti.Dds.Topics.PublicationBuiltinTopicData.Property [get]

Gets the value of Property

The full documentation is available in the C API: property_qos

9.226.4.25 UnicastLocators

ImmutableList< **Locator**> Rti.Dds.Topics.PublicationBuiltinTopicData.UnicastLocators [get]

Gets the value of UnicastLocators

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_unicast_↩ locators

9.226.4.26 VirtualGuid

Core.Guid Rti.Dds.Topics.PublicationBuiltinTopicData.VirtualGuid [get]

Gets the value of VirtualGuid

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_virtual_guid

9.226.4.27 Service

Service Rti.Dds.Topics.PublicationBuiltinTopicData.Service [get]

Gets the value of Service

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_service

9.226.4.28 RtpsProtocolVersion

Version Rti.Dds.Topics.PublicationBuiltinTopicData.RtpsProtocolVersion [get]

Gets the value of RtpsProtocolVersion

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_rtps_protocol_version

9.226.4.29 RtpsVendorId

VendorId Rti.Dds.Topics.PublicationBuiltinTopicData.RtpsVendorId [get]

Gets the value of RtpsVendorId

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_rtps_vendor_id

9.226.4.30 ProductVersion

Version Rti.Dds.Topics.PublicationBuiltinTopicData.ProductVersion [get]

Gets the value of ProductVersion

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_product_version

9.226.4.31 LocatorFilter

LocatorFilters Rti.Dds.Topics.PublicationBuiltinTopicData.LocatorFilter [get]

Gets the value of LocatorFilter

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_locator_filter

9.226.4.32 DisablePositiveAcks

bool Rti.Dds.Topics.PublicationBuiltinTopicData.DisablePositiveAcks [get]

Gets the value of DisablePositiveAcks

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_disable_positive_acks

9.226.4.33 PublicationName

EntityName Rti.Dds.Topics.PublicationBuiltinTopicData.PublicationName [get]

Gets the value of PublicationName

The full documentation is available in the C API: DDS_PublicationBuiltinTopicData_publication_name

9.227 Rti.Dds.Core.Status.PublicationMatchedStatus Class Reference

Notifies of a change in the **StatusMask.PublicationMatched** (p. 109) status

Public Member Functions

- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  The total cumulative number of times that this DataWriter discovered a "match" with a DataReader.
- **EventCount**< int > **CurrentCount** [get]

  The current number of DataReaders with which this DataWriter is matched.
- int **CurrentCountPeak** [get]

  Greatest number of DataReaders that matched this DataWriter simultaneously.
- **InstanceHandle LastSubscriptionHandle** [get]

  *This **InstanceHandle** (p. 661) can be used to look up which remote DataReader was the last to cause this DataWriter's status to change, using DataWriter.GetMatchedSubscriptionData*

9.227.1 Detailed Description

Notifies of a change in the **StatusMask.PublicationMatched** (p. 109) status

9.227.2 Member Function Documentation

9.227.2.1 ToString()

```
override string Rti.Dds.Core.Status.PublicationMatchedStatus.ToString ( )
```

Returns a readable summary of the status

9.227.3 Property Documentation

9.227.3.1 TotalCount

EventCount<int> Rti.Dds.Core.Status.PublicationMatchedStatus.TotalCount [get]

The total cumulative number of times that this DataWriter discovered a "match" with a DataReader.

*The full documentation is available in the C API:*DDS_PublicationMatchedStatus_total_count

9.227.3.2 CurrentCount

EventCount<int> Rti.Dds.Core.Status.PublicationMatchedStatus.CurrentCount [get]

The current number of DataReaders with which this DataWriter is matched.

*The full documentation is available in the C API:*DDS_PublicationMatchedStatus_current_count

9.227.3.3 CurrentCountPeak

int Rti.Dds.Core.Status.PublicationMatchedStatus.CurrentCountPeak [get]

Greatest number of DataReaders that matched this DataWriter simultaneously.

*The full documentation is available in the C API:*DDS_PublicationMatchedStatus_current_count_↩peak

9.227.3.4 LastSubscriptionHandle

```
InstanceHandle Rti.Dds.Core.Status.PublicationMatchedStatus.LastSubscriptionHandle [get]
```

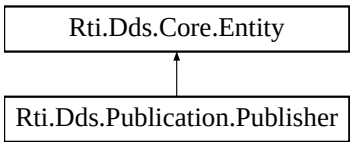
This **InstanceHandle** (p. 661) can be used to look up which remote DataReader was the last to cause this DataWriter's status to change, using DataWriter.GetMatchedSubscriptionData

*The full documentation is available in the C API:*DDS_PublicationMatchedStatus_last_subscription_handle

9.228 Rti.Dds.Publication.Publisher Class Reference

A publisher is the object responsible for the actual dissemination of publications.

Inheritance diagram for Rti.Dds.Publication.Publisher:



Public Member Functions

- **DataWriter**< T > **LookupDataWriter**< **T** > (string topicName)

  Retrieves a writer for a specific topic.
- **AnyDataWriter** **LookupDataWriter** (string topicName)

  Retrieves a writer for a specific topic.
- **AnyDataWriter** **LookupDataWriterByName** (string writerName)

  Retrieves a writer by its name
- **DataWriter**< T > **CreateDataWriter**< **T** > (**Topic**< T > topic)

  Creates a DataWriter<T> that will be attached and belong to this publisher.
- **DataWriter**< T > **CreateDataWriter**< **T** > (**Topic**< T > topic, **DataWriterQos** qos)

  Creates a DataWriter<T> that will be attached and belong to this publisher.
- **DataWriter**< T > **CreateDataWriter**< **T** > (**Topic**< T > topic, Action< **DataWriter**< T > > preEnableAction)

  Creates a DataWriter<T> that will be attached and belong to this publisher.
- **DataWriter**< T > **CreateDataWriter**< **T** > (**Topic**< T > topic, **DataWriterQos** qos, Action< **DataWriter**< T > > preEnableAction)

  Creates a DataWriter<T> that will be attached and belong to this publisher.
- **AnyDataWriter** **CreateDataWriter** (**Topics.IAnyTopic** topic, **DataWriterQos** qos)

  *Creates a **DataWriter** (p. 336) that will be attached and belong to this **Publisher** (p. 884), without knowing the type at compile time.*
- **AnyDataWriter** **CreateDataWriter** (**Topics.IAnyTopic** topic)

  *Creates a **DataWriter** (p. 336) that will be attached and belong to this **Publisher** (p. 884), without knowing the type at compile time.*
- void **DisposeContainedEntities** ()

*Disposes all the entities that were created by this **Publisher** (p. 884).*

- override void **ResetEvents** (**StatusMask** eventsToRemove=StatusMask.All)

  Stop notifying of certain events and remove their event handlers

- **CoherentSet BeginCoherentChanges** ()

  Indicates that a coherent set of modifications is going to be performed using DataWriter<T> objects belonging to this publisher.

- void **EndCoherentChanges** ()

  *Ends a coherent set of changes (alternative to **CoherentSet.Dispose** (p. 218))*

- **SuspendedPublication SuspendPublications** ()

  Indicates that the application is about to make multiple modifications using DataWriter<T> objects belonging this publisher.

- void **ResumePublications** ()

  *Indicates that the application has completed the multiple changes initiated by the previous call to **SuspendPublications** (p. 889) (alternative to **SuspendedPublication.Dispose** (p. 1123))*

- void **WaitForAcknowledgments** (**Duration** maxWait)

  *Blocks the calling thread until all data written by the **Publisher** (p. 884)'s reliable DataWriters is acknowledged, or until timeout expires.*

- void **WaitForAsynchronousPublishing** (**Duration** maxWait)

  Blocks the calling thread until asynchronous sending is complete.

Properties

- **DataWriterQos DefaultDataWriterQos** `[get, set]`

  *Get or change the default **DataWriterQos** (p. 363) used by*

- IEnumerable< **AnyDataWriter** > **DataWriters** `[get]`

  Retrieve all the writers created by this publisher

- **PublisherQos Qos** `[get, set]`

  Gets or sets the publisher QoS.

- **DomainParticipant DomainParticipant** `[get]`

  *Returns the **DomainParticipant** (p. 891) to which this publisher belongs.*

- **LivelinessLostEventHandler LivelinessLost**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessLost** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*

- **OfferedIncompatibleQosEventHandler OfferedIncompatibleQos**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedIncompatibleQos** (p. 108) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*

- **OfferedDeadlineMissedEventHandler OfferedDeadlineMissed**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedDeadlineMissed** (p. 108) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*

- **PublicationMatchedEventHandler PublicationMatched**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.PublicationMatched** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*

- **ReliableReaderActivityChangedEventHandler ReliableReaderActivityChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableReaderActivityChanged** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*

- **ReliableWriterCacheChangedEventHandler ReliableWriterCacheChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableWriterCacheChanged** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*

- **ServiceRequestAcceptedEventHandler ServiceRequestAccepted**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.ServiceRequestAccepted** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*
- **ApplicationAcknowledgementReceivedEventHandler ApplicationAcknowledgementReceived**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterApplicationAcknowledgementReceived** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*
- **InstanceReplacedEventHandler InstanceReplaced**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterInstanceReplaced** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*
- **SampleRemovedEventHandler SampleRemoved**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterSampleRemoved** (p. 110) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.*

9.228.1 Detailed Description

A publisher is the object responsible for the actual dissemination of publications.

The full documentation is available in the C API: DDS_Publisher

9.228.2 Member Function Documentation

9.228.2.1 LookupDataWriter< T >()

```
DataWriter< T >  Rti.Dds.Publication.Publisher.LookupDataWriter< T > (
            string topicName )
```

Retrieves a writer for a specific topic.

Returns

The writer if it exists or null if it doesn't

The full documentation is available in the C API: DDS_Publisher_lookup_datawriter

9.228.2.2 LookupDataWriter()

```
AnyDataWriter Rti.Dds.Publication.Publisher.LookupDataWriter (
            string topicName )  [inline]
```

Retrieves a writer for a specific topic.

Returns

The writer if it exists or null if it doesn't

The full documentation is available in the C API: DDS_Publisher_lookup_datawriter

9.228.2.3 LookupDataWriterByName()

```
AnyDataWriter Rti.Dds.Publication.Publisher.LookupDataWriterByName (
            string writerName )  [inline]
```

Retrieves a writer by its name

The full documentation is available in the C API: DDS_Publisher_lookup_datawriter_by_name

9.228.2.4 CreateDataWriter< T >() [1/4]

```
DataWriter< T >  Rti.Dds.Publication.Publisher.CreateDataWriter< T > (
            Topic< T > topic )  [inline]
```

Creates a DataWriter<T> that will be attached and belong to this publisher.

The full documentation is available in the C API: DDS_Publisher_create_datawriter

9.228.2.5 CreateDataWriter< T >() [2/4]

```
DataWriter< T >  Rti.Dds.Publication.Publisher.CreateDataWriter< T > (
            Topic< T > topic,
            DataWriterQos qos )
```

Creates a DataWriter<T> that will be attached and belong to this publisher.

The full documentation is available in the C API: DDS_Publisher_create_datawriter

9.228.2.6 CreateDataWriter< T >() [3/4]

```
DataWriter< T >  Rti.Dds.Publication.Publisher.CreateDataWriter< T > (
            Topic< T > topic,
           Action<  DataWriter< T > > preEnableAction )  [inline]
```

Creates a DataWriter<T> that will be attached and belong to this publisher.

Parameters

topic	The Topic<T> that the writer will be associated with.
preEnableAction	An action that allows adding handlers to writer events before the writer is enabled.

9.228.2.7 CreateDataWriter< T >() [4/4]

```
DataWriter< T >  Rti.Dds.Publication.Publisher.CreateDataWriter< T > (
```

```
Topic< T > topic,
DataWriterQos qos,
Action< DataWriter< T > > preEnableAction ) [inline]
```

Creates a DataWriter<T> that will be attached and belong to this publisher.

Parameters

topic	The Topic<T> that the writer will be associated with.
qos	The quality of service
preEnableAction	An action that allows adding handlers to writer events before the writer is enabled.

9.228.2.8 CreateDataWriter() [1/2]

```
AnyDataWriter Rti.Dds.Publication.Publisher.CreateDataWriter (
            Topics.IAnyTopic topic,
            DataWriterQos qos ) [inline]
```

Creates a **DataWriter** (p. 336) that will be attached and belong to this **Publisher** (p. 884), without knowing the type at compile time.

9.228.2.9 CreateDataWriter() [2/2]

```
AnyDataWriter Rti.Dds.Publication.Publisher.CreateDataWriter (
            Topics.IAnyTopic topic ) [inline]
```

Creates a **DataWriter** (p. 336) that will be attached and belong to this **Publisher** (p. 884), without knowing the type at compile time.

9.228.2.10 DisposeContainedEntities()

```
void Rti.Dds.Publication.Publisher.DisposeContainedEntities ( ) [inline]
```

Disposes all the entities that were created by this **Publisher** (p. 884).

The full documentation is available in the C API: DDS_Publisher_delete_contained_entities

9.228.2.11 ResetEvents()

```
override void Rti.Dds.Publication.Publisher.ResetEvents (
            StatusMask eventsToRemove = StatusMask.All ) [inline], [virtual]
```

Stop notifying of certain events and remove their event handlers

Parameters

eventsToRemove	Selects which events will stop receiving notifications. Use StatusMask.All to remove all event handlers.

Implements **Rti.Dds.Core.Entity** (p. 597).

9.228.2.12 BeginCoherentChanges()

```
CoherentSet Rti.Dds.Publication.Publisher.BeginCoherentChanges ( )  [inline]
```

Indicates that a coherent set of modifications is going to be performed using DataWriter<T> objects belonging to this publisher.

Returns

An object whose disposal indicates the end of the coherent set

```
using (publisher.BeginCoherentChanges())
{
    writer1.Write(sample1);
    writer1.Write(sample2);
    writer2.Write(sample3); // writer1 and writer2 belong to publisher
} // end of coherent set
```

The full documentation is available in the C API: `DDS_Publisher_begin_coherent_changes`

9.228.2.13 EndCoherentChanges()

```
void Rti.Dds.Publication.Publisher.EndCoherentChanges ( )
```

Ends a coherent set of changes (alternative to **CoherentSet.Dispose** (p. 218))

The full documentation is available in the C API: `DDS_Publisher_end_coherent_changes`

9.228.2.14 SuspendPublications()

```
SuspendedPublication Rti.Dds.Publication.Publisher.SuspendPublications ( )  [inline]
```

Indicates that the application is about to make multiple modifications using DataWriter<T> objects belonging this publisher.

Returns

An object whose disposal indicates the end of the suspension

The full documentation is available in the C API: `DDS_Publisher_suspend_publications`

9.228.2.15 ResumePublications()

```
void Rti.Dds.Publication.Publisher.ResumePublications ( )
```

Indicates that the application has completed the multiple changes initiated by the previous call to **SuspendPublications** (p. 889) (alternative to **SuspendedPublication.Dispose** (p. 1123))

The full documentation is available in the C API: DDS_Publisher_resume_publications

9.228.2.16 WaitForAcknowledgments()

```
void Rti.Dds.Publication.Publisher.WaitForAcknowledgments (
            Duration maxWait )
```

Blocks the calling thread until all data written by the **Publisher** (p. 884)'s reliable DataWriters is acknowledged, or until timeout expires.

The full documentation is available in the C API: DDS_Publisher_wait_for_acknowledgments

9.228.2.17 WaitForAsynchronousPublishing()

```
void Rti.Dds.Publication.Publisher.WaitForAsynchronousPublishing (
            Duration maxWait )
```

Blocks the calling thread until asynchronous sending is complete.

The full documentation is available in the C API: DDS_Publisher_wait_for_asynchronous_↩ publishing

9.228.3 Property Documentation

9.228.3.1 DefaultDataWriterQos

```
DataWriterQos Rti.Dds.Publication.Publisher.DefaultDataWriterQos [get], [set]
```

Get or change the default **DataWriterQos** (p. 363) used by

The full documentation is available in the C API: DDS_Publisher_get_default_datawriter_qos

9.228.3.2 DataWriters

```
IEnumerable< AnyDataWriter> Rti.Dds.Publication.Publisher.DataWriters [get]
```

Retrieve all the writers created by this publisher

The full documentation is available in the C API: DDS_Publisher_get_all_datawriters

9.228.3.3 Qos

PublisherQos Rti.Dds.Publication.Publisher.Qos [get], [set]

Gets or sets the publisher QoS.

The full documentation is available in the C API: DDS_Publisher_set_qos

9.228.3.4 DomainParticipant

DomainParticipant Rti.Dds.Publication.Publisher.DomainParticipant [get]

Returns the **DomainParticipant** (p. 891) to which this publisher belongs.

The full documentation is available in the C API: DDS_Publisher_get_participant

9.228.3.5 LivelinessLost

LivelinessLostEventHandler Rti.Dds.Publication.Publisher.LivelinessLost [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessLost** (p. 109) status changes on any Data↩ Writer<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.6 OfferedIncompatibleQos

OfferedIncompatibleQosEventHandler Rti.Dds.Publication.Publisher.OfferedIncompatibleQos [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedIncompatibleQos** (p. 108) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.7 OfferedDeadlineMissed

OfferedDeadlineMissedEventHandler Rti.Dds.Publication.Publisher.OfferedDeadlineMissed [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.OfferedDeadlineMissed** (p. 108) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.8 PublicationMatched

PublicationMatchedEventHandler Rti.Dds.Publication.Publisher.PublicationMatched [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.PublicationMatched** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.9 ReliableReaderActivityChanged

ReliableReaderActivityChangedEventHandler Rti.Dds.Publication.Publisher.ReliableReaderActivity↩
Changed [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableReaderActivityChanged** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.10 ReliableWriterCacheChanged

ReliableWriterCacheChangedEventHandler Rti.Dds.Publication.Publisher.ReliableWriterCacheChanged
[add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ReliableWriterCacheChanged** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.11 ServiceRequestAccepted

ServiceRequestAcceptedEventHandler Rti.Dds.Publication.Publisher.ServiceRequestAccepted [add],
[remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.ServiceRequestAccepted** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.12 ApplicationAcknowledgementReceived

ApplicationAcknowledgementReceivedEventHandler Rti.Dds.Publication.Publisher.ApplicationAcknowledgement↩
Received [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterApplicationAcknowledgementReceived** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.13 InstanceReplaced

```
InstanceReplacedEventHandler Rti.Dds.Publication.Publisher.InstanceReplaced [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterInstanceReplaced** (p. 109) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.228.3.14 SampleRemoved

```
SampleRemovedEventHandler Rti.Dds.Publication.Publisher.SampleRemoved [add], [remove]
```

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataWriterSampleRemoved** (p. 110) status changes on any DataWriter<T> created by this **Publisher** (p. 884) for which this event is not being monitored.

9.229 Rti.Dds.Publication.PublisherQos Class Reference

QoS policies supported by a **Publisher** (p. 884).

Inherits IEquatable< PublisherQos >.

Public Member Functions

- **PublisherQos WithPresentation** (**Presentation** policy)
  *Creates an instance with a new **Presentation** (p. 901) policy.*
- **PublisherQos WithPresentation** (Action< **PresentationBuilder** > build)
  *Creates a new instance with a new **Presentation** (p. 901) policy as configured by a build action*
- **PublisherQos WithPartition** (**Partition** policy)
  *Creates an instance with a new **Partition** (p. 901) policy.*
- **PublisherQos WithPartition** (Action< ImmutableList< string >.Builder > build)
  *Creates a new instance with a new **Partition** (p. 901) policy as configured by a build action*
- **PublisherQos WithGroupData** (**GroupData** policy)
  *Creates an instance with a new **GroupData** (p. 901) policy.*
- **PublisherQos WithGroupData** (Action< ImmutableList< byte >.Builder > build)
  *Creates a new instance with a new **GroupData** (p. 901) policy as configured by a build action*
- **PublisherQos WithEntityFactory** (**EntityFactory** policy)
  *Creates an instance with a new **EntityFactory** (p. 901) policy.*
- **PublisherQos WithAsynchronousPublisher** (**AsynchronousPublisher** policy)
  *Creates an instance with a new **AsynchronousPublisher** (p. 901) policy.*
- **PublisherQos WithAsynchronousPublisher** (Action< **AsynchronousPublisherBuilder** > build)
  *Creates a new instance with a new **AsynchronousPublisher** (p. 901) policy as configured by a build action*
- **PublisherQos WithPublisherName** (**EntityName** policy)
  *Creates an instance with a new **PublisherName** (p. 901) policy.*
- **PublisherQos WithPublisherName** (Action< **EntityNameBuilder** > build)

*Creates a new instance with a new **PublisherName** (p. 901) policy as configured by a build action*

- bool **Equals** (**PublisherQos** other)

  Compares all the policies for equality
- override int **GetHashCode** ()

  Returns the hash code by combining that of each policy
- override bool **Equals** (object obj)

  Compares all the policies for equality
- override string **ToString** ()

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintFormat** format)

  Returns an XML representation of the QoS object.
- string **ToString** (**PublisherQos** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintAll** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.

Properties

- static **PublisherQos** **Default** = new **PublisherQos**() `[get]`

  *Singleton containing the documented default value of a **PublisherQos** (p. 893)*
- **Presentation** **Presentation** `[get]`

  *Gets the **Presentation** (p. 901) policy.*
- **Partition** **Partition** `[get]`

  *Gets the **Partition** (p. 901) policy.*
- **GroupData** **GroupData** `[get]`

  *Gets the **GroupData** (p. 901) policy.*
- **EntityFactory** **EntityFactory** `[get]`

  *Gets the **EntityFactory** (p. 901) policy.*
- **AsynchronousPublisher** **AsynchronousPublisher** `[get]`

  *Gets the **AsynchronousPublisher** (p. 901) policy.*
- **EntityName** **PublisherName** `[get]`

  Gets the EntityName policy.

9.229.1 Detailed Description

QoS policies supported by a **Publisher** (p. 884).

The full documentation is available in the C API: `DDS_PublisherQos`

9.229.2 Member Function Documentation

9.229.2.1 WithPresentation() [1/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithPresentation (
            Presentation policy ) [inline]
```

Creates an instance with a new **Presentation** (p. 901) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.229.2.2 WithPresentation() [2/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithPresentation (
            Action< PresentationBuilder > build )
```

Creates a new instance with a new **Presentation** (p. 901) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.229.2.3 WithPartition() [1/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithPartition (
             Partition policy )  [inline]
```

Creates an instance with a new **Partition** (p. 901) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.229.2.4 WithPartition() [2/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithPartition (
            Action< ImmutableList< string >.Builder > build )
```

Creates a new instance with a new **Partition** (p. 901) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.229.2.5 WithGroupData() [1/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithGroupData (
             GroupData policy )  [inline]
```

Creates an instance with a new **GroupData** (p. 901) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.229.2.6 WithGroupData() [2/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithGroupData (
            Action< ImmutableList< byte >.Builder > build )
```

Creates a new instance with a new **GroupData** (p. 901) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.229.2.7 WithEntityFactory()

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithEntityFactory (
            EntityFactory policy )  [inline]
```

Creates an instance with a new **EntityFactory** (p. 901) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.229.2.8 WithAsynchronousPublisher() [1/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithAsynchronousPublisher (
            AsynchronousPublisher policy )  [inline]
```

Creates an instance with a new **AsynchronousPublisher** (p. 901) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.229.2.9 WithAsynchronousPublisher() [2/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithAsynchronousPublisher (
           Action< AsynchronousPublisherBuilder > build )
```

Creates a new instance with a new **AsynchronousPublisher** (p. 901) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.229.2.10 WithPublisherName() [1/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithPublisherName (
            EntityName policy )  [inline]
```

Creates an instance with a new **PublisherName** (p. 901) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.229.2.11 WithPublisherName() [2/2]

```
PublisherQos Rti.Dds.Publication.PublisherQos.WithPublisherName (
          Action<  EntityNameBuilder > build )
```

Creates a new instance with a new **PublisherName** (p. 901) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.229.2.12 Equals() [1/2]

```
bool Rti.Dds.Publication.PublisherQos.Equals (
              PublisherQos other )  [inline]
```

Compares all the policies for equality

9.229.2.13 GetHashCode()

```
override int Rti.Dds.Publication.PublisherQos.GetHashCode ( )  [inline]
```

Returns the hash code by combining that of each policy

9.229.2.14 Equals() [2/2]

```
override bool Rti.Dds.Publication.PublisherQos.Equals (
             object obj )
```

Compares all the policies for equality

9.229.2.15 ToString() [1/4]

```
override string Rti.Dds.Publication.PublisherQos.ToString ( )
```

Returns an XML representation of the QoS object.

The output is formatted using the default values for the QosPrintFormat and only QoS policies which differ from the documented default are included.

9.229.2.16 ToString() [2/4]

```
string Rti.Dds.Publication.PublisherQos.ToString (
              QosPrintFormat format )
```

Returns an XML representation of the QoS object.

Parameters

format	The baseQos profile.

This overload accepts a value for the baseQos. Only the differences between the **PublisherQos** (p. 893) object being printed and the baseQos are included in the output.

9.229.2.17 ToString() [3/4]

```
string Rti.Dds.Publication.PublisherQos.ToString (
            PublisherQos baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	The baseQos profile.
format	the format used to configure the output. If not supplied the output is formatted using the default format.

This overload accepts a value for the baseQos. Only the differences between the **PublisherQos** (p. 893) object being printed and the baseQos are included in the output.

9.229.2.18 ToString() [4/4]

```
string Rti.Dds.Publication.PublisherQos.ToString (
            QosPrintAll baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	Used to indicate that the entire QoS object should be included in the output. The only value which should be provided for this argument is QosPrintAll.Value
format	The format used to configure the output. If not supplied, the output is formatted using the default format.

This overload accepts a parameter of type QosPrintAll. Unlike the other ToString overloads, the entire QoS object will be included in the output.

9.229.3 Property Documentation

9.229.3.1 Default

```
PublisherQos Rti.Dds.Publication.PublisherQos.Default = new PublisherQos() [static], [get]
```

Singleton containing the documented default value of a **PublisherQos** (p. 893)

This is a static value containing the documented default values for each policy. Use **Domain.DomainParticipant.↩ DefaultPublisherQos** (p. 468) for the runtime default value that takes into consideration the current configuration.

9.229.3.2 Presentation

```
Presentation Rti.Dds.Publication.PublisherQos.Presentation  [get]
```

Gets the **Presentation** (p. 901) policy.

9.229.3.3 Partition

```
Partition Rti.Dds.Publication.PublisherQos.Partition  [get]
```

Gets the **Partition** (p. 901) policy.

9.229.3.4 GroupData

```
GroupData Rti.Dds.Publication.PublisherQos.GroupData  [get]
```

Gets the **GroupData** (p. 901) policy.

9.229.3.5 EntityFactory

```
EntityFactory Rti.Dds.Publication.PublisherQos.EntityFactory  [get]
```

Gets the **EntityFactory** (p. 901) policy.

9.229.3.6 AsynchronousPublisher

```
AsynchronousPublisher Rti.Dds.Publication.PublisherQos.AsynchronousPublisher  [get]
```

Gets the **AsynchronousPublisher** (p. 901) policy.

9.229.3.7 PublisherName

EntityName Rti.Dds.Publication.PublisherQos.PublisherName [get]

Gets the EntityName policy.

9.230 Rti.Dds.Core.Policy.PublishMode Class Reference

Specifies whether a Publication.DataWriter<T> sends data synchronously or asynchronously.

Inherits IEquatable< PublishMode >.

Public Member Functions

- **PublishMode With** (Action< **PublishModeBuilder** > build)
  *Creates a new **PublishMode** (p. 902) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**PublishMode** other)
  Compares for equality

Static Public Attributes

- const string **DefaultFlowControllerName** = "DDS_DEFAULT_FLOW_CONTROLLER_NAME"
  *Special value for **FlowControllerName** (p. 904) that refers to the built-in default flow controller.*
- const string **FixedRateFlowControllerName** = "DDS_FIXED_RATE_FLOW_CONTROLLER_NAME"
  *Special value for **FlowControllerName** (p. 904) that refers to the built-in fixed-rate flow controller.*

Properties

- **PublishModeKind Kind** [get]
  Publishing mode
- string **FlowControllerName** [get]
  Name of the associated flow controller
- int **Priority** [get]
  ***Publication** (p. 111) priority*
- static **PublishMode Default** [get]
  *Singleton containing the default value of a **PublishMode** (p. 902)*

9.230.1 Detailed Description

Specifies whether a Publication.DataWriter<T> sends data synchronously or asynchronously.

The full documentation is available in the `C API:DDS_PublishModeQosPolicy`

9.230.2 Member Function Documentation

9.230.2.1 With()

```
PublishMode Rti.Dds.Core.Policy.PublishMode.With (
            Action< PublishModeBuilder > build ) [inline]
```

Creates a new **PublishMode** (p. 902) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **PublishMode** (p. 902).

Returns

A new **PublishMode** (p. 902) with the changes applied by the Action

9.230.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.PublishMode.GetHashCode ( ) [inline]
```

Gets the hash code

9.230.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.PublishMode.Equals (
            object other )
```

Compares for equality

9.230.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.PublishMode.Equals (
            PublishMode other )  [inline]
```

Compares for equality

9.230.3 Field Documentation

9.230.3.1 DefaultFlowControllerName

```
const string Rti.Dds.Core.Policy.PublishMode.DefaultFlowControllerName = "DDS_DEFAULT_FLOW_↩
CONTROLLER_NAME"  [static]
```

Special value for **FlowControllerName** (p. 904) that refers to the built-in default flow controller.

The full documentation is available in the C API: DDSFlowControllerDEFAULT_FLOW_CONTROLLER_NAME

9.230.3.2 FixedRateFlowControllerName

```
const string Rti.Dds.Core.Policy.PublishMode.FixedRateFlowControllerName = "DDS_FIXED_RATE_FLOW_↩
CONTROLLER_NAME"  [static]
```

Special value for **FlowControllerName** (p. 904) that refers to the built-in fixed-rate flow controller.

The full documentation is available in the C API: DDSFlowControllerFIXED_RATE_FLOW_CONTROLLER↩
_NAME

9.230.4 Property Documentation

9.230.4.1 Kind

```
PublishModeKind Rti.Dds.Core.Policy.PublishMode.Kind  [get]
```

Publishing mode

The full documentation is available in the C API: DDS_PublishModeQosPolicy_kind

9.230.4.2 FlowControllerName

```
string Rti.Dds.Core.Policy.PublishMode.FlowControllerName [get]
```

Name of the associated flow controller

The full documentation is available in the C API: `DDS_PublishModeQosPolicy_flow_controller_name`

9.230.4.3 Priority

```
int Rti.Dds.Core.Policy.PublishMode.Priority [get]
```

Publication (p. 111) priority

See also

Rti.Dds.Core.Priority (p. 861) for special values

The full documentation is available in the C API: `DDS_PublishModeQosPolicy_priority`

9.230.4.4 Default

```
PublishMode Rti.Dds.Core.Policy.PublishMode.Default [static], [get]
```

Singleton containing the default value of a **PublishMode** (p. 902)

9.231 Rti.Dds.Core.Policy.PublishModeBuilder Class Reference

A modifiable type used to create an immutable **PublishMode** (p. 902)

Public Member Functions

- **PublishModeBuilder** (**PublishMode** data)
  Creates a builder with the values of an existing immutable instance
- **PublishMode Build** ()
  *Creates a new **PublishMode** (p. 902) immutable object from this one.*

Properties

- **PublishModeKind Kind** `[get, set]`
  Publishing mode
- string **FlowControllerName** `[get, set]`
  Name of the associated flow controller
- int **Priority** `[get, set]`
  ***Publication** (p. 111) priority*

9.231.1 Detailed Description

A modifiable type used to create an immutable **PublishMode** (p. 902)

9.231.2 Constructor & Destructor Documentation

9.231.2.1 PublishModeBuilder()

```
Rti.Dds.Core.Policy.PublishModeBuilder.PublishModeBuilder (
            PublishMode data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.231.3 Member Function Documentation

9.231.3.1 Build()

```
PublishMode Rti.Dds.Core.Policy.PublishModeBuilder.Build ( )
```

Creates a new **PublishMode** (p. 902) immutable object from this one.

9.231.4 Property Documentation

9.231.4.1 Kind

```
PublishModeKind Rti.Dds.Core.Policy.PublishModeBuilder.Kind  [get], [set]
```

Publishing mode

The full documentation is available in the C API: `DDS_PublishModeQosPolicy_kind`

9.231.4.2 FlowControllerName

```
string Rti.Dds.Core.Policy.PublishModeBuilder.FlowControllerName  [get], [set]
```

Name of the associated flow controller

The full documentation is available in the C API: `DDS_PublishModeQosPolicy_flow_controller_name`

9.231.4.3 Priority

```
int Rti.Dds.Core.Policy.PublishModeBuilder.Priority  [get], [set]
```

Publication (p. 111) priority

See also

Rti.Dds.Core.Priority (p. 861) for special values

The full documentation is available in the C API: `DDS_PublishModeQosPolicy_priority`

9.232 Rti.Dds.Core.QosPrintAll Class Reference

Sentinel that selects a particular ToString() overload of a QoS object.

Properties

- static **QosPrintAll** **Value** = new **QosPrintAll**() `[get]`

  *This sentinel is the only instance of **QosPrintAll** (p. 907).*

9.232.1 Detailed Description

Sentinel that selects a particular ToString() overload of a QoS object.

For **Entity** (p. 596) QoS classes, such as DomainParticipantQos **QosPrintAll.Value** (p. 907) is a sentinel that select the ToString() overload that prints the entire QoS object (**DomainParticipantQos.ToString(QosPrintAll, QosPrintFormat)** (p. 505)).

9.232.2 Property Documentation

9.232.2.1 Value

```
QosPrintAll Rti.Dds.Core.QosPrintAll.Value = new  QosPrintAll()  [static], [get]
```

This sentinel is the only instance of **QosPrintAll** (p. 907).

9.233 Rti.Dds.Core.QosPrintFormat Class Reference

Used to conifgure the output of the QoS ToString APIs.

Inherits IEquatable< QosPrintFormat >.

Public Member Functions

- **QosPrintFormat** ()

  *Creates the default **QosPrintFormat** (p. 908)*
- **QosPrintFormat** (uint indent, bool isStandalone, bool printPrivate)

  *Creates a **QosPrintFormat** (p. 908) with its 3 components*
- override bool **Equals** (object other)

  Compares two objects.
- bool **Equals** (**QosPrintFormat** other)

  Compares two objects.
- override int **GetHashCode** ()

  Gets the hash code.
- override string **ToString** ()

  Converts to a readable string.

Properties

- uint **Indent** `[get, set]`

  The amount of indent to apply to the output.
- bool **IsStandalone** `[get, set]`

  Whether or not to include XML preamble in the output.
- bool **PrintPrivate** `[get, set]`

  Whether or not to print internal/private QoS policies in the output.

9.233.1 Detailed Description

Used to conifgure the output of the QoS ToString APIs.

9.233.2 Constructor & Destructor Documentation

9.233.2.1 QosPrintFormat() [1/2]

```
Rti.Dds.Core.QosPrintFormat.QosPrintFormat ( )  [inline]
```

Creates the default **QosPrintFormat** (p. 908)

9.233.2.2 QosPrintFormat() [2/2]

```
Rti.Dds.Core.QosPrintFormat.QosPrintFormat (
            uint indent,
            bool isStandalone,
            bool printPrivate )  [inline]
```

Creates a **QosPrintFormat** (p. 908) with its 3 components

9.233.3 Member Function Documentation

9.233.3.1 Equals() [1/2]

```
override bool Rti.Dds.Core.QosPrintFormat.Equals (
            object other )
```

Compares two objects.

9.233.3.2 Equals() [2/2]

```
bool Rti.Dds.Core.QosPrintFormat.Equals (
             QosPrintFormat other )  [inline]
```

Compares two objects.

9.233.3.3 GetHashCode()

```
override int Rti.Dds.Core.QosPrintFormat.GetHashCode ( )
```

Gets the hash code.

9.233.3.4 ToString()

```
override string Rti.Dds.Core.QosPrintFormat.ToString ( )
```

Converts to a readable string.

9.233.4 Property Documentation

9.233.4.1 Indent

```
uint Rti.Dds.Core.QosPrintFormat.Indent  [get], [set]
```

The amount of indent to apply to the output.

9.233.4.2 IsStandalone

```
bool Rti.Dds.Core.QosPrintFormat.IsStandalone  [get], [set]
```

Whether or not to include XML preamble in the output.

9.233.4.3 PrintPrivate

```
bool Rti.Dds.Core.QosPrintFormat.PrintPrivate  [get], [set]
```

Whether or not to print internal/private QoS policies in the output.

9.234 Rti.Dds.Core.QosProvider Class Reference

Provides access to XML-defined QoS profiles, data types, and complete DDS systems.

Inherits IDisposable.

Public Member Functions

- **QosProvider** (**Profile** profilePolicy)

  *Create a **QosProvider** (p. 910) with additional configuration*
- **QosProvider** (string uri)

  *Create a **QosProvider** (p. 910) fetching the QoS configuration from a URI*
- **QosProvider** (string uri, string profile)

  *Create a **QosProvider** (p. 910) fetching the QoS configuration from a URI*
- void **Dispose** ()

  Releases the native resources used by this object. A finalizer is also provided.
- **DomainParticipant CreateParticipantFromConfig** (string configName)

  Creates a DomainParticipant given its configuration name from a description provided in an XML configuration file.
- **DomainParticipant CreateParticipantFromConfig** (string configName, **DomainParticipantConfigParams** parameters)

  Creates a DomainParticipant given its configuration name from a description provided in an XML configuration file and a set of parameters that allow changing some properties of such configuration.
- **DomainParticipantFactoryQos GetDomainParticipantFactoryQos** ()

  Get the DomainParticipantFactoryQos currently associated with the default profile.
- **DomainParticipantFactoryQos GetDomainParticipantFactoryQos** (string profile)

  Get the DomainParticipantFactoryQos from a profile
- **DomainParticipantQos GetDomainParticipantQos** ()

  Get the DomainParticipantQos currently associated with the default profile.
- **DomainParticipantQos GetDomainParticipantQos** (string profile)

  Get the DomainParticipantQos from a profile
- **TopicQos GetTopicQos** (string profile)

  Get the TopicQos from a profile
- **TopicQos GetTopicQos** ()

  Get the TopicQos currently associated with the default profile.
- **TopicQos GetTopicQosWithTopicName** (string profile, string topicName)

  Get the TopicQos from a profile for a given topic.
- **TopicQos GetTopicQosWithTopicName** (string topicName)

  Get the TopicQos currently associated with the default profile for a given topic.
- **PublisherQos GetPublisherQos** (string profile)

  Get the PublisherQos from a profile
- **PublisherQos GetPublisherQos** ()

  Get the PublisherQos currently associated with the default profile.
- **SubscriberQos GetSubscriberQos** (string profile)

  Get the SubscriberQos from a profile
- **SubscriberQos GetSubscriberQos** ()

  Get the SubscriberQos currently associated with the default profile.
- **DataWriterQos GetDataWriterQos** (string profile)

  Get the DataWriterQos from a profile
- **DataWriterQos GetDataWriterQos** ()

  Get the DataWriterQos currently associated with the default profile.
- **DataWriterQos GetDataWriterQosWithTopicName** (string profile, string topicName)

  Get the DataWriterQos from a profile and a given topic.
- **DataWriterQos GetDataWriterQosWithTopicName** (string topicName)

  Get the DataWriterQos for a given topic currently associated with the default profile.

- **DataReaderQos GetDataReaderQos** (string profile)

  Get the DataReaderQos from a profile.
- **DataReaderQos GetDataReaderQos** ()

  Get the DataReaderQos currently associated with the default profile.
- **DataReaderQos GetDataReaderQosWithTopicName** (string profile, string topicName)

  Get the DataReaderQos from a profile for a given topic.
- **DataReaderQos GetDataReaderQosWithTopicName** (string topicName)

  Get the DataReaderQos for a given topic currently associated with the default profile.
- **DynamicType GetType** (string typeName)

  Load a type from its XML definition
- IEnumerable< string > **GetQosProfileLibraries** ()

  *Get a list of the QoS profile libraries loaded by this **QosProvider** (p. 910)*
- IEnumerable< string > **GetQosProfiles** (string libraryName)

  Get a list of the QoS profiles under a library
- IEnumerable< string > **GetQosProfiles** ()

  *Get a list of all the QoS profiles associated with this **QosProvider** (p. 910).*
- void **ReloadProfiles** ()

  Reloads the profiles by parsing the XML documents again
- void **UnloadProfiles** ()

  Unload the profiles

Static Public Member Functions

- static void **SetDefaultProviderParams** (**Profile** profile)

  *This method can be called before accessing **QosProvider.Default** (p. 924) to configure which profiles the default provider will load.*

Properties

- static **QosProvider Default** `[get]`

  *Get the default **QosProvider** (p. 910), a singleton that gives access to the QoS profiles and data types that are loaded by default.*
- **Profile ProviderParams** `[get, set]`

  *Get or modify this **QosProvider** (p. 910)'s configuration. When the configuration is modified, the profiles are reloaded.*
- string **DefaultProfile** `[get, set]`

  Get or set the profile used by default (can be null).
- string **DefaultLibrary** `[get, set]`

  Get or set the library used by default (can be null)
- bool **Disposed** `[get]`

  Indicates whether this object has been disposed

9.234.1 Detailed Description

Provides access to XML-defined QoS profiles, data types, and complete DDS systems.

A **QosProvider** (p. 910) is created with a URI that identifies a resource from where to load the definition of:

- QoS profiles
- Type definitions
- Full XML-defined DDS systems

The URI can be:

- An XML file
- A string representation of an XML document `str://"..."`
- A group of several files and strings (see `URL Groups` in the User's Manual)

The following example loads a file named `"MyProfiles.xml"` in the current directory. Then it retrieves the `DataReaderQos` from a `<qos_profile>` named `"MyProfile"` under a `<qos_library>` named `"MyLibrary"` to create a `DataReader`:

```
var myQosProvider = new QosProvider("MyProfiles.xml");
var myReader = subscriber.CreateDataReader(
    myTopic,
    myQosProvider.GetDataReaderQos("MyLibrary::MyProfile"));
```

To load type definitions, see **GetType(string)** (p. 922).

To create a DomainParticipant and its contained entities, see **CreateParticipantFromConfig(string)** (p. 917).

9.234.2 Selecting a QoS profile

The profile name argument is optional:

```
var readerQos = myQosProvider.GetDataReaderQos();
```

When omitted, the **QosProvider** (p. 910) looks for a profile as follows (in order of precedence):

- The profile set with **DefaultProfile** (p. 924)
- The profile set in the constructor (an optional argument)
- The `<qos_profile>` identified as the default profile with the attribute `is_default_qos=true`
- If none of the above methods have been used, a QoS object with the documented default values is returned

A **QosProvider** (p. 910) can be used in combination with functions such as **Rti.Dds.Publication.Publisher.DefaultDataWriterQos** (p. 890) or **Rti.Dds.Subscription.Subscriber.DefaultDataReaderQos** (p. 1100) to set the profile that entities are created with by default:

```
subscriber.DefaultDataReaderQos =
    myQosProvider.GetDataReaderQos("MyLibrary::MyProfile");
// reader created with the QoS in the profile "MyLibrary::MyProfile"
var reader = subscriber.CreateDataReader(topic);
```

More information about QoS Profiles can be found in the `QoS Profiles section`, in the User's Manual.

9.234.3 The Default QosProvider

A special **QosProvider** (p. 910), **QosProvider.Default** (p. 924) is always available to obtain the QoS profiles from the default locations, such as the file USER_QOS_PROFILES.xml in the current directory. For example, the following code obtains the default `DataReaderQos`:

```
var defaultReaderQos = QosProvider.Default.GetDatareaderQos();
```

`This section` in the User's Manual explains which profiles are automatically loaded by the default **QosProvider** (p. 910).

The profiles that **QosProvider.Default** (p. 924) loads can be configured with **QosProvider.SetDefaultProvider↩ Params(Profile)** (p. 915). This method should be called before **QosProvider.Default** (p. 924) is accessed.

```
QosProvider.SetDefaultProviderParams(Profile.Default.With(p =>
{
    // Load MyProfiles.xml and disable USER_QOS_PROFILES.xml
    p.UrlProfile.Add("MyProfiles.xml");
    p.IgnoreUserProfile = true;
}));
```

QosProvider.Default (p. 924) also determines the default values for `<participant_factory_qos>`, which can be used to configure logging.

9.234.4 Built-in QoS Profiles

Any **QosProvider** (p. 910), including the default **QosProvider** (p. 910), has access to the built-in profiles. For example, to obtain the `DataWriterQos` from the "strict reliable" built-in profile:

```
var strictReliableWriterQos = QosProvider.Default.GetDataWriterQos(
    "BuiltinQosLib::Generic.StrictReliable");
```

9.234.5 Specifying a Topic Filter

XML QoS definitions can specify a `topic_filter` attribute. Several functions (such as **GetDataReaderQosWith↩ TopicName(string)** (p. 922) receive a `topicName` argument. When these functions look for the QoS, they will try to match the `topicName` against the `topic_filter`s, if they are used. See the `Topic Filters section` in the User's Manual.

See also

Entity examples (p. 37)

9.234.6 Constructor & Destructor Documentation

9.234.6.1 QosProvider() [1/3]

```
Rti.Dds.Core.QosProvider.QosProvider (
            Profile profilePolicy )
```

Create a **QosProvider** (p. 910) with additional configuration

Parameters

profilePolicy	Specifies multiple locations where to look for profiles

9.234.6.2 QosProvider() [2/3]

```
Rti.Dds.Core.QosProvider.QosProvider (
            string uri )  [inline]
```

Create a **QosProvider** (p. 910) fetching the QoS configuration from a URI

Parameters

uri	A file such as "path/to/my_config.xml", or an inline definition, "str://\"<dds>...</dds>\"" (note the quotes after str://)

9.234.6.3 QosProvider() [3/3]

```
Rti.Dds.Core.QosProvider.QosProvider (
            string uri,
            string profile )  [inline]
```

Create a **QosProvider** (p. 910) fetching the QoS configuration from a URI

Parameters

uri	A file such as "file:///somewhere/on/disk/qos-config.xml", or an inline definition, "str://"<dds;>...</dds;>""
profile	The QoS profile to set as the default, overriding any is_default_qos tag in the loaded XML file. This is the profile used when the profile argument to the **QosProvider** (p. 910) getters is omitted.

9.234.7 Member Function Documentation

9.234.7.1 SetDefaultProviderParams()

```
static void Rti.Dds.Core.QosProvider.SetDefaultProviderParams (
             Profile profile )  [inline], [static]
```

This method can be called before accessing **QosProvider.Default** (p. 924) to configure which profiles the default provider will load.

Parameters

profile	The configuration for **QosProvider.Default** (p. 924)

9.234.7.2 Dispose()

```
void Rti.Dds.Core.QosProvider.Dispose ( )  [inline]
```

Releases the native resources used by this object. A finalizer is also provided.

9.234.7.3 CreateParticipantFromConfig() [1/2]

```
DomainParticipant Rti.Dds.Core.QosProvider.CreateParticipantFromConfig (
            string configName )
```

Creates a DomainParticipant given its configuration name from a description provided in an XML configuration file.

See **XML application examples** (p. 52)

.

9.234.7.4 CreateParticipantFromConfig() [2/2]

```
DomainParticipant Rti.Dds.Core.QosProvider.CreateParticipantFromConfig (
            string configName,
             DomainParticipantConfigParams parameters )
```

Creates a DomainParticipant given its configuration name from a description provided in an XML configuration file and a set of parameters that allow changing some properties of such configuration.

The full documentation is available in the C API: DDS_DomainParticipantFactory_create_↩ participant_from_config_w_params

9.234.7.5 GetDomainParticipantFactoryQos() [1/2]

```
DomainParticipantFactoryQos Rti.Dds.Core.QosProvider.GetDomainParticipantFactoryQos ( )
```

Get the DomainParticipantFactoryQos currently associated with the default profile.

9.234.7.6 GetDomainParticipantFactoryQos() [2/2]

```
DomainParticipantFactoryQos Rti.Dds.Core.QosProvider.GetDomainParticipantFactoryQos (
            string profile )
```

Get the DomainParticipantFactoryQos from a profile

Parameters

profile	The profile from which to get the DomainParticipantFactoryQos, for example "MyLibrary::MyProfile"

9.234.7.7 GetDomainParticipantQos() [1/2]

```
DomainParticipantQos Rti.Dds.Core.QosProvider.GetDomainParticipantQos ( )
```

Get the DomainParticipantQos currently associated with the default profile.

9.234.7.8 GetDomainParticipantQos() [2/2]

```
DomainParticipantQos Rti.Dds.Core.QosProvider.GetDomainParticipantQos (
            string profile )
```

Get the DomainParticipantQos from a profile

Parameters

profile	The profile from which to get the DomainParticipantQos, for example "MyLibrary::MyProfile"

9.234.7.9 GetTopicQos() [1/2]

```
TopicQos Rti.Dds.Core.QosProvider.GetTopicQos (
            string profile )
```

Get the TopicQos from a profile

Parameters

profile	The profile from which to get the TopicQos, for example "MyLibrary::MyProfile"

9.234.7.10 GetTopicQos() [2/2]

```
TopicQos Rti.Dds.Core.QosProvider.GetTopicQos ( )
```

Get the TopicQos currently associated with the default profile.

9.234.7.11 GetTopicQosWithTopicName() [1/2]

```
TopicQos Rti.Dds.Core.QosProvider.GetTopicQosWithTopicName (
            string profile,
            string topicName )
```

Get the TopicQos from a profile for a given topic.

Parameters

profile	The profile from which to get the TopicQos, for example "`MyLibrary::MyProfile`"
topicName	The topic name used to select a qos within the profile, if the `topic_filter` attribute is used.

9.234.7.12 GetTopicQosWithTopicName() [2/2]

```
TopicQos Rti.Dds.Core.QosProvider.GetTopicQosWithTopicName (
            string topicName )
```

Get the TopicQos currently associated with the default profile for a given topic.

Parameters

topicName	The topic name used to select a qos within the profile, if the `topic_filter` attribute is used.

9.234.7.13 GetPublisherQos() [1/2]

```
PublisherQos Rti.Dds.Core.QosProvider.GetPublisherQos (
            string profile )
```

Get the PublisherQos from a profile

Parameters

profile	The profile from which to get the PublisherQos, for example "`MyLibrary::MyProfile`"

9.234.7.14 GetPublisherQos() [2/2]

```
PublisherQos Rti.Dds.Core.QosProvider.GetPublisherQos ( )
```

Get the PublisherQos currently associated with the default profile.

9.234.7.15 GetSubscriberQos() [1/2]

```
SubscriberQos Rti.Dds.Core.QosProvider.GetSubscriberQos (
            string profile )
```

Get the SubscriberQos from a profile

Parameters

profile	The profile from which to get the SubscriberQos, for example "MyLibrary::MyProfile"

9.234.7.16 GetSubscriberQos() [2/2]

```
SubscriberQos Rti.Dds.Core.QosProvider.GetSubscriberQos ( )
```

Get the SubscriberQos currently associated with the default profile.

9.234.7.17 GetDataWriterQos() [1/2]

```
DataWriterQos Rti.Dds.Core.QosProvider.GetDataWriterQos (
            string profile )
```

Get the DataWriterQos from a profile

Parameters

profile	The profile from which to get the DataWriterQos, for example "MyLibrary::MyProfile"

9.234.7.18 GetDataWriterQos() [2/2]

```
DataWriterQos Rti.Dds.Core.QosProvider.GetDataWriterQos ( )
```

Get the DataWriterQos currently associated with the default profile.

9.234.7.19 GetDataWriterQosWithTopicName() [1/2]

```
DataWriterQos Rti.Dds.Core.QosProvider.GetDataWriterQosWithTopicName (
            string profile,
            string topicName )
```

Get the DataWriterQos from a profile and a given topic.

Parameters

profile	The profile from which to get the DataWriterQos, for example "`MyLibrary::MyProfile`"
topicName	The topic name used to select a qos within the profile, if the `topic_filter` attribute is used.

9.234.7.20 GetDataWriterQosWithTopicName() [2/2]

```
DataWriterQos Rti.Dds.Core.QosProvider.GetDataWriterQosWithTopicName (
            string topicName )
```

Get the DataWriterQos for a given topic currently associated with the default profile.

Parameters

topicName	The topic name used to select a qos within the profile, if the `topic_filter` attribute is used.

9.234.7.21 GetDataReaderQos() [1/2]

```
DataReaderQos Rti.Dds.Core.QosProvider.GetDataReaderQos (
            string profile )
```

Get the DataReaderQos from a profile.

Parameters

profile	The profile from which to get the DataReaderQos, for example "`MyLibrary::MyProfile`"

9.234.7.22 GetDataReaderQos() [2/2]

```
DataReaderQos Rti.Dds.Core.QosProvider.GetDataReaderQos ( )
```

Get the DataReaderQos currently associated with the default profile.

9.234.7.23 GetDataReaderQosWithTopicName() [1/2]

```
DataReaderQos Rti.Dds.Core.QosProvider.GetDataReaderQosWithTopicName (
            string profile,
            string topicName )
```

Get the DataReaderQos from a profile for a given topic.

Parameters

profile	The profile from which to get the DataReaderQos, for example "MyLibrary::MyProfile"
topicName	The topic name used to select a qos within the profile, if the topic_filter attribute is used.

9.234.7.24 GetDataReaderQosWithTopicName() [2/2]

```
DataReaderQos Rti.Dds.Core.QosProvider.GetDataReaderQosWithTopicName (
            string topicName )
```

Get the DataReaderQos for a given topic currently associated with the default profile.

Parameters

topicName	The topic name used to select a qos within the profile, if the topic_filter attribute is used.

9.234.7.25 GetType()

```
DynamicType Rti.Dds.Core.QosProvider.GetType (
            string typeName )  [inline]
```

Load a type from its XML definition

Parameters

typeName	The name of a type defined under the <types> tag.

See also

DynamicData examples (p. 50).

9.234.7.26 GetQosProfileLibraries()

```
IEnumerable< string > Rti.Dds.Core.QosProvider.GetQosProfileLibraries ( )
```

Get a list of the QoS profile libraries loaded by this **QosProvider** (p. 910)

The full documentation is available in the C API: DDS_DomainParticipantFactory_get_qos_profile_libraries

9.234.7.27 GetQosProfiles() [1/2]

```
IEnumerable< string > Rti.Dds.Core.QosProvider.GetQosProfiles (
            string libraryName )
```

Get a list of the QoS profiles under a library

Parameters

libraryName	The library containing the profiles

9.234.7.28 GetQosProfiles() [2/2]

```
IEnumerable< string > Rti.Dds.Core.QosProvider.GetQosProfiles ( )  [inline]
```

Get a list of all the QoS profiles associated with this **QosProvider** (p. 910).

9.234.7.29 ReloadProfiles()

```
void Rti.Dds.Core.QosProvider.ReloadProfiles ( )
```

Reloads the profiles by parsing the XML documents again

9.234.7.30 UnloadProfiles()

```
void Rti.Dds.Core.QosProvider.UnloadProfiles ( )
```

Unload the profiles

9.234.8 Property Documentation

9.234.8.1 Default

```
QosProvider Rti.Dds.Core.QosProvider.Default  [static], [get]
```

Initial value:

```
You must supply the library and profile names in the form
my_library::my_profile or as null to clear any profile marked as default"
```

Get the default **QosProvider** (p. 910), a singleton that gives access to the QoS profiles and data types that are loaded by default.

The default **QosProvider** (p. 910) automatically loads XML Qos, types and application profiles from several predetermined locations, such as the file USER_QOS_PROFILES.xml in the current working directory.

See **The Default QosProvider** (p. 914).

9.234.8.2 ProviderParams

```
Profile Rti.Dds.Core.QosProvider.ProviderParams  [get], [set]
```

Get or modify this **QosProvider** (p. 910)'s configuration. When the configuration is modified, the profiles are reloaded.

9.234.8.3 DefaultProfile

```
string Rti.Dds.Core.QosProvider.DefaultProfile  [get], [set]
```

Get or set the profile used by default (can be null).

See also

Selecting a QoS profile (p. 913)

9.234.8.4 DefaultLibrary

```
string Rti.Dds.Core.QosProvider.DefaultLibrary  [get], [set]
```

Get or set the library used by default (can be null)

9.234.8.5 Disposed

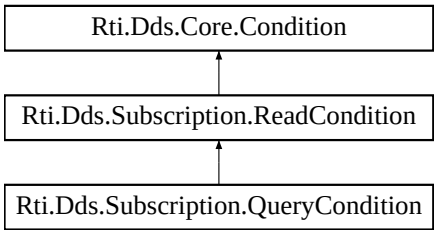
```
bool Rti.Dds.Core.QosProvider.Disposed  [get]
```

Indicates whether this object has been disposed

9.235 Rti.Dds.Subscription.QueryCondition Class Reference

A specialized **ReadCondition** (p. 928) that allows specifying a filter on the locally available data.

Inheritance diagram for Rti.Dds.Subscription.QueryCondition:



Properties

- string **QueryExpression** [get]

  Retrieves the query expression.
- IEnumerable< string > **QueryParameters** [get, set]

  Retrieves or modifies the query parameters.

Additional Inherited Members

9.235.1 Detailed Description

A specialized **ReadCondition** (p. 928) that allows specifying a filter on the locally available data.

*The full documentation is available in the C API:*DDS_QueryCondition

9.235.2 Property Documentation

9.235.2.1 QueryExpression

```
string Rti.Dds.Subscription.QueryCondition.QueryExpression [get]
```

Retrieves the query expression.

The full documentation is available in the C API: `DDS_QueryCondition_get_query_expression`

9.235.2.2 QueryParameters

```
IEnumerable<string> Rti.Dds.Subscription.QueryCondition.QueryParameters [get], [set]
```

Retrieves or modifies the query parameters.

The full documentation is available in the C API: `DDS_QueryCondition_set_query_parameters`

9.236 Omg.Dds.Subscription.Rank Struct Reference

Keeps track of the number of samples related to the same instance that follow in a sample collection.

Inherits IEquatable< Rank >.

Public Member Functions

- bool **Equals** (**Rank** other)
  Compares for equality.
- override bool **Equals** (object other)
  Compares for equality.
- override int **GetHashCode** ()
  Calculates the hash code.
- override string **ToString** ()
  Returns a readable representation of this object

Properties

- int **SampleRank** `[get, set]`
  The sample rank of the sample.
- int **GenerationRank** `[get, set]`
  The generation rank of the sample.
- int **AbsoluteGenerationRank** `[get, set]`
  The absolute generation rank of the sample.

9.236.1 Detailed Description

Keeps track of the number of samples related to the same instance that follow in a sample collection.

9.236.2 Member Function Documentation

9.236.2.1 Equals() [1/2]

```
bool Omg.Dds.Subscription.Rank.Equals (
            Rank other )
```

Compares for equality.

9.236.2.2 Equals() [2/2]

```
override bool Omg.Dds.Subscription.Rank.Equals (
            object other )
```

Compares for equality.

9.236.2.3 GetHashCode()

```
override int Omg.Dds.Subscription.Rank.GetHashCode ( )
```

Calculates the hash code.

9.236.2.4 ToString()

```
override string Omg.Dds.Subscription.Rank.ToString ( )
```

Returns a readable representation of this object

9.236.3 Property Documentation

9.236.3.1 SampleRank

```
int Omg.Dds.Subscription.Rank.SampleRank  [get], [set]
```

The sample rank of the sample.

The full documentation is available in the C API: `DDS_SampleInfo_sample_rank`

9.236.3.2 GenerationRank

```
int Omg.Dds.Subscription.Rank.GenerationRank  [get], [set]
```

The generation rank of the sample.

The full documentation is available in the C API: `DDS_SampleInfo_generation_rank`

9.236.3.3 AbsoluteGenerationRank

```
int Omg.Dds.Subscription.Rank.AbsoluteGenerationRank  [get], [set]
```

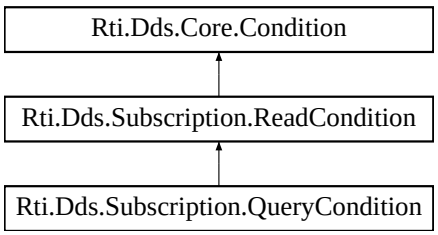
The absolute generation rank of the sample.

The full documentation is available in the C API: `DDS_SampleInfo_absolute_generation_rank`

9.237 Rti.Dds.Subscription.ReadCondition Class Reference

Conditions specifically dedicated to read operations and attached to one **DataReader**<**T**> (p. 929).

Inheritance diagram for Rti.Dds.Subscription.ReadCondition:



Public Member Functions

- void **Dispose** ()

  Releases the native resources used by this condition

Properties

- **AnyDataReader DataReader** [get]

  *Returns the **DataReader** (p. 243) associated with this condition.*
- **DataState StateFilter** [get]

  Returns the state filter
- bool **Disposed** [get]

  Indicates whether this object has been disposed

Additional Inherited Members

9.237.1 Detailed Description

Conditions specifically dedicated to read operations and attached to one **DataReader**<**T**> (p. 929).

ReadConditions are created with **AnyDataReader.CreateReadCondition(DataState)** (p. 152) or **AnyDataReader.CreateQueryCondition(Filter, DataState)** (p. 152) and should be explicitly disposed (by calling the Dispose method) when they're no longer used to avoid consuming resources unnecessarily.

The full documentation is available in the C API: DDS_ReadCondition

9.237.2 Member Function Documentation

9.237.2.1 Dispose()

```
void Rti.Dds.Subscription.ReadCondition.Dispose ( )  [inline]
```

Releases the native resources used by this condition

9.237.3 Property Documentation

9.237.3.1 DataReader

```
AnyDataReader Rti.Dds.Subscription.ReadCondition.DataReader  [get]
```

Returns the **DataReader** (p. 243) associated with this condition.

The full documentation is available in the C API: DDS_ReadCondition_get_datareader

9.237.3.2 StateFilter

```
DataState Rti.Dds.Subscription.ReadCondition.StateFilter [get]
```

Returns the state filter

9.237.3.3 Disposed

```
bool Rti.Dds.Subscription.ReadCondition.Disposed [get]
```

Indicates whether this object has been disposed

9.238 Rti.Dds.Core.Policy.ReaderDataLifecycle Class Reference

Controls how a Subscription.DataReader<T> manages the lifecycle of the data that it has received.

Inherits IEquatable< ReaderDataLifecycle >.

Public Member Functions

- **ReaderDataLifecycle With** (Action< **ReaderDataLifecycleBuilder** > build)

  *Creates a new **ReaderDataLifecycle** (p. 930) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ReaderDataLifecycle** other)

  Compares for equality

Properties

- **Duration AutopurgeNowriterSamplesDelay** [get]

  *Minimum duration for which the Subscription.DataReader<T> will maintain information regarding an instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66).*
- **Duration AutopurgeDisposedSamplesDelay** [get]

  *Minimum duration for which the Subscription.DataReader<T> will maintain samples for an instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66).*
- **Duration AutopurgeDisposedInstancesDelay** [get]

  *Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) and there are no samples for the instance in the DataReader queue.*
- **Duration AutopurgeNowriterInstancesDelay** [get]

  *Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) and there are no samples for the instance in the DataReader queue.*
- static **ReaderDataLifecycle Default** [get]

  *Singleton containing the default value of a **ReaderDataLifecycle** (p. 930)*

9.238.1 Detailed Description

Controls how a Subscription.DataReader<T> manages the lifecycle of the data that it has received.

The full documentation is available in the C API: `DDS_ReaderDataLifecycleQosPolicy`

9.238.2 Member Function Documentation

9.238.2.1 With()

```
ReaderDataLifecycle Rti.Dds.Core.Policy.ReaderDataLifecycle.With (
            Action< ReaderDataLifecycleBuilder > build ) [inline]
```

Creates a new **ReaderDataLifecycle** (p. 930) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **ReaderDataLifecycle** (p. 930).

Returns

A new **ReaderDataLifecycle** (p. 930) with the changes applied by the Action

9.238.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.ReaderDataLifecycle.GetHashCode ( ) [inline]
```

Gets the hash code

9.238.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.ReaderDataLifecycle.Equals (
            object other )
```

Compares for equality

9.238.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.ReaderDataLifecycle.Equals (
            ReaderDataLifecycle other ) [inline]
```

Compares for equality

9.238.3 Property Documentation

9.238.3.1 AutopurgeNowriterSamplesDelay

```
Duration Rti.Dds.Core.Policy.ReaderDataLifecycle.AutopurgeNowriterSamplesDelay [get]
```

Minimum duration for which the Subscription.DataReader<T> will maintain information regarding an instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66).

The full documentation is available in the C API: `DDS_ReaderDataLifecycleQosPolicy_autopurge_nowriter_samples_delay`

9.238.3.2 AutopurgeDisposedSamplesDelay

```
Duration Rti.Dds.Core.Policy.ReaderDataLifecycle.AutopurgeDisposedSamplesDelay [get]
```

Minimum duration for which the Subscription.DataReader<T> will maintain samples for an instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66).

The full documentation is available in the C API: `DDS_ReaderDataLifecycleQosPolicy_autopurge_disposed_samples_delay`

9.238.3.3 AutopurgeDisposedInstancesDelay

```
Duration Rti.Dds.Core.Policy.ReaderDataLifecycle.AutopurgeDisposedInstancesDelay [get]
```

Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) and there are no samples for the instance in the DataReader queue.

The full documentation is available in the C API: `DDS_ReaderDataLifecycleQosPolicy_autopurge_disposed_instances_delay`

9.238.3.4 AutopurgeNowriterInstancesDelay

```
Duration Rti.Dds.Core.Policy.ReaderDataLifecycle.AutopurgeNowriterInstancesDelay [get]
```

Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) and there are no samples for the instance in the DataReader queue.

The full documentation is available in the C API: `DDS_ReaderDataLifecycleQosPolicy_autopurge_nowriter_instances_delay`

9.238.3.5 Default

```
ReaderDataLifecycle Rti.Dds.Core.Policy.ReaderDataLifecycle.Default [static], [get]
```

Singleton containing the default value of a **ReaderDataLifecycle** (p. 930)

9.239 Rti.Dds.Core.Policy.ReaderDataLifecycleBuilder Class Reference

A modifiable type used to create an immutable **ReaderDataLifecycle** (p. 930)

Public Member Functions

- **ReaderDataLifecycleBuilder** (**ReaderDataLifecycle** data)

  Creates a builder with the values of an existing immutable instance
- **ReaderDataLifecycle Build** ()

  *Creates a new **ReaderDataLifecycle** (p. 930) immutable object from this one.*

Properties

- **Duration AutopurgeNowriterSamplesDelay** `[get, set]`

  *Minimum duration for which the Subscription.DataReader<T> will maintain information regarding an instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66).*
- **Duration AutopurgeDisposedSamplesDelay** `[get, set]`

  *Minimum duration for which the Subscription.DataReader<T> will maintain samples for an instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66).*
- **Duration AutopurgeDisposedInstancesDelay** `[get, set]`

  *Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) and there are no samples for the instance in the DataReader queue.*
- **Duration AutopurgeNowriterInstancesDelay** `[get, set]`

  *Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) and there are no samples for the instance in the DataReader queue.*

9.239.1 Detailed Description

A modifiable type used to create an immutable **ReaderDataLifecycle** (p. 930)

9.239.2 Constructor & Destructor Documentation

9.239.2.1 ReaderDataLifecycleBuilder()

```
Rti.Dds.Core.Policy.ReaderDataLifecycleBuilder.ReaderDataLifecycleBuilder (
            ReaderDataLifecycle data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.239.3 Member Function Documentation

9.239.3.1 Build()

```
ReaderDataLifecycle Rti.Dds.Core.Policy.ReaderDataLifecycleBuilder.Build ( )
```

Creates a new **ReaderDataLifecycle** (p. 930) immutable object from this one.

9.239.4 Property Documentation

9.239.4.1 AutopurgeNowriterSamplesDelay

```
Duration Rti.Dds.Core.Policy.ReaderDataLifecycleBuilder.AutopurgeNowriterSamplesDelay  [get],
[set]
```

Minimum duration for which the Subscription.DataReader<T> will maintain information regarding an instance once its `instance_state` becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66).

The full documentation is available in the C API: `DDS_ReaderDataLifecycleQosPolicy_autopurge_nowriter_samples_delay`

9.239.4.2 AutopurgeDisposedSamplesDelay

Duration Rti.Dds.Core.Policy.ReaderDataLifecycleBuilder.AutopurgeDisposedSamplesDelay [get], [set]

Minimum duration for which the Subscription.DataReader<T> will maintain samples for an instance once its instance_state becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66).

The full documentation is available in the C API: DDS_ReaderDataLifecycleQosPolicy_autopurge_disposed_samples_delay

9.239.4.3 AutopurgeDisposedInstancesDelay

Duration Rti.Dds.Core.Policy.ReaderDataLifecycleBuilder.AutopurgeDisposedInstancesDelay [get], [set]

Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its instance_state becomes **Omg.Dds.Subscription.InstanceState.NotAliveDisposed** (p. 66) and there are no samples for the instance in the DataReader queue.

The full documentation is available in the C API: DDS_ReaderDataLifecycleQosPolicy_autopurge_disposed_instances_delay

9.239.4.4 AutopurgeNowriterInstancesDelay

Duration Rti.Dds.Core.Policy.ReaderDataLifecycleBuilder.AutopurgeNowriterInstancesDelay [get], [set]

Minimum duration for which the Subscription.DataReader<T> will maintain information about a received instance once its instance_state becomes **Omg.Dds.Subscription.InstanceState.NotAliveNoWriters** (p. 66) and there are no samples for the instance in the DataReader queue.

The full documentation is available in the C API: DDS_ReaderDataLifecycleQosPolicy_autopurge_nowriter_instances_delay

9.240 Rti.Dds.Core.Policy.ReceiverPool Class Reference

Configures threads used by the middleware to receive and process data from transport (for example, UDP sockets).

Inherits IEquatable< ReceiverPool >.

Public Member Functions

- **ReceiverPool With** (Action< **ReceiverPoolBuilder** > build)

  *Creates a new **ReceiverPool** (p. 935) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ReceiverPool** other)

  Compares for equality

Static Public Attributes

- const int **LengthAuto** = **Omg.Dds.Core.LengthAuto.Value**

  A special value indicating that the actual value of BufferSize will be automatically resolved.

Properties

- **ThreadSettings Thread** [get]

  Receiver pool thread(s).
- int **BufferSize** [get]

  The receive buffer size.
- int **BufferAlignment** [get]

  The receive buffer alignment.
- static **ReceiverPool Default** [get]

  *Singleton containing the default value of a **ReceiverPool** (p. 935)*

9.240.1 Detailed Description

Configures threads used by the middleware to receive and process data from transport (for example, UDP sockets).

9.240.2 Member Function Documentation

9.240.2.1 With()

```
ReceiverPool Rti.Dds.Core.Policy.ReceiverPool.With (
            Action<  ReceiverPoolBuilder > build )  [inline]
```

Creates a new **ReceiverPool** (p. 935) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **ReceiverPool** (p. 935).

Returns

A new **ReceiverPool** (p. 935) with the changes applied by the Action

9.240.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.ReceiverPool.GetHashCode ( )  [inline]
```

Gets the hash code

9.240.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.ReceiverPool.Equals (
            object other )
```

Compares for equality

9.240.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.ReceiverPool.Equals (
             ReceiverPool other )  [inline]
```

Compares for equality

9.240.3 Field Documentation

9.240.3.1 LengthAuto

```
const int Rti.Dds.Core.Policy.ReceiverPool.LengthAuto =  Omg.Dds.Core.LengthAuto.Value  [static]
```

A special value indicating that the actual value of BufferSize will be automatically resolved.

The full documentation is available in the C API: DDSReceiverPoolQosPolicyLENGTH_AUTO

9.240.4 Property Documentation

9.240.4.1 Thread

ThreadSettings Rti.Dds.Core.Policy.ReceiverPool.Thread [get]

Receiver pool thread(s).

The full documentation is available in the C API: DDS_ReceiverPoolQosPolicy_thread

9.240.4.2 BufferSize

int Rti.Dds.Core.Policy.ReceiverPool.BufferSize [get]

The receive buffer size.

The full documentation is available in the C API: DDS_ReceiverPoolQosPolicy_buffer_size

9.240.4.3 BufferAlignment

int Rti.Dds.Core.Policy.ReceiverPool.BufferAlignment [get]

The receive buffer alignment.

The full documentation is available in the C API: DDS_ReceiverPoolQosPolicy_buffer_alignment

9.240.4.4 Default

ReceiverPool Rti.Dds.Core.Policy.ReceiverPool.Default [static], [get]

Singleton containing the default value of a **ReceiverPool** (p. 935)

9.241 Rti.Dds.Core.Policy.ReceiverPoolBuilder Class Reference

A modifiable type used to create an immutable **ReceiverPool** (p. 935)

Public Member Functions

- **ReceiverPoolBuilder** (**ReceiverPool** data)

  Creates a builder with the values of an existing immutable instance
- **ReceiverPool Build** ()

  *Creates a new **ReceiverPool** (p. 935) immutable object from this one.*

Properties

- **ThreadSettings Thread** [get, set]
  Receiver pool thread(s).
- int **BufferSize** [get, set]
  The receive buffer size.
- int **BufferAlignment** [get, set]
  The receive buffer alignment.

9.241.1 Detailed Description

A modifiable type used to create an immutable **ReceiverPool** (p. 935)

9.241.2 Constructor & Destructor Documentation

9.241.2.1 ReceiverPoolBuilder()

```
Rti.Dds.Core.Policy.ReceiverPoolBuilder.ReceiverPoolBuilder (
            ReceiverPool data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.241.3 Member Function Documentation

9.241.3.1 Build()

```
ReceiverPool Rti.Dds.Core.Policy.ReceiverPoolBuilder.Build ( )
```

Creates a new **ReceiverPool** (p. 935) immutable object from this one.

9.241.4 Property Documentation

9.241.4.1 Thread

ThreadSettings Rti.Dds.Core.Policy.ReceiverPoolBuilder.Thread [get], [set]

Receiver pool thread(s).

The full documentation is available in the C API: DDS_ReceiverPoolQosPolicy_thread

9.241.4.2 BufferSize

int Rti.Dds.Core.Policy.ReceiverPoolBuilder.BufferSize [get], [set]

The receive buffer size.

The full documentation is available in the C API: DDS_ReceiverPoolQosPolicy_buffer_size

9.241.4.3 BufferAlignment

int Rti.Dds.Core.Policy.ReceiverPoolBuilder.BufferAlignment [get], [set]

The receive buffer alignment.

The full documentation is available in the C API: DDS_ReceiverPoolQosPolicy_buffer_alignment

9.242 Rti.Dds.Core.Policy.Reliability Class Reference

Configures the level of reliability offered or requested.

Inherits IEquatable< Reliability >.

Public Member Functions

- **Reliability With** (Action< **ReliabilityBuilder** > build)

  *Creates a new **Reliability** (p. 940) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Reliability** other)

  Compares for equality

Properties

- **ReliabilityKind Kind** [get]

  Kind of reliability.
- **Duration MaxBlockingTime** [get]

  The maximum time a writer may block on a write() call.
- **AcknowledgmentModeKind AcknowledgmentKind** [get]

  Kind of reliable acknowledgment
- **InstanceStateConsistencyKind InstanceStateConsistencyKind** [get]

  Whether instance state consistency is enabled
- bool **ExactReliabilityKindMatch** [get]

  Whether the exact reliability kind match is enabled
- static **Reliability Default** [get]

  *Singleton containing the default value of a **Reliability** (p. 940)*

9.242.1 Detailed Description

Configures the level of reliability offered or requested.

9.242.2 Member Function Documentation

9.242.2.1 With()

```
Reliability Rti.Dds.Core.Policy.Reliability.With (
            Action< ReliabilityBuilder > build ) [inline]
```

Creates a new **Reliability** (p. 940) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Reliability** (p. 940).

Returns

A new **Reliability** (p. 940) with the changes applied by the Action

9.242.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Reliability.GetHashCode ( ) [inline]
```

Gets the hash code

9.242.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Reliability.Equals (
            object other )
```

Compares for equality

9.242.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Reliability.Equals (
             Reliability other )  [inline]
```

Compares for equality

9.242.3 Property Documentation

9.242.3.1 Kind

```
ReliabilityKind Rti.Dds.Core.Policy.Reliability.Kind  [get]
```

Kind of reliability.

The full documentation is available in the C API: `DDS_ReliabilityQosPolicy_kind`

9.242.3.2 MaxBlockingTime

```
Duration Rti.Dds.Core.Policy.Reliability.MaxBlockingTime  [get]
```

The maximum time a writer may block on a write() call.

The full documentation is available in the C API: `DDS_ReliabilityQosPolicy_max_blocking_time`

9.242.3.3 AcknowledgmentKind

AcknowledgmentModeKind Rti.Dds.Core.Policy.Reliability.AcknowledgmentKind [get]

Kind of reliable acknowledgment

The full documentation is available in the C API: DDSReliabilityQosPolicyacknowledgement_mode

9.242.3.4 InstanceStateConsistencyKind

InstanceStateConsistencyKind Rti.Dds.Core.Policy.Reliability.InstanceStateConsistencyKind [get]

Whether instance state consistency is enabled

The full documentation is available in the C API: DDSReliabilityQosPolicyinstance_state_↩consistency_kind

9.242.3.5 ExactReliabilityKindMatch

bool Rti.Dds.Core.Policy.Reliability.ExactReliabilityKindMatch [get]

Whether the exact reliability kind match is enabled

The full documentation is available in the C API: DDSReliabilityQosPolicyexact_reliability_↩kind_match

9.242.3.6 Default

Reliability Rti.Dds.Core.Policy.Reliability.Default [static], [get]

Singleton containing the default value of a **Reliability** (p. 940)

9.243 Rti.Dds.Core.Policy.ReliabilityBuilder Class Reference

A modifiable type used to create an immutable **Reliability** (p. 940)

Public Member Functions

- **ReliabilityBuilder** (**Reliability** data)

  Creates a builder with the values of an existing immutable instance
- **Reliability Build** ()

  *Creates a new **Reliability** (p. 940) immutable object from this one.*

Properties

- **ReliabilityKind Kind** `[get, set]`
  Kind of reliability.
- **Duration MaxBlockingTime** `[get, set]`
  The maximum time a writer may block on a write() call.
- **AcknowledgmentModeKind AcknowledgmentKind** `[get, set]`
  Kind of reliable acknowledgment
- **InstanceStateConsistencyKind InstanceStateConsistencyKind** `[get, set]`
  Whether instance state consistency is enabled
- bool **ExactReliabilityKindMatch** `[get, set]`
  Whether the exact kind match is enabled

9.243.1 Detailed Description

A modifiable type used to create an immutable **Reliability** (p. 940)

9.243.2 Constructor & Destructor Documentation

9.243.2.1 ReliabilityBuilder()

```
Rti.Dds.Core.Policy.ReliabilityBuilder.ReliabilityBuilder (
            Reliability data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.243.3 Member Function Documentation

9.243.3.1 Build()

```
Reliability Rti.Dds.Core.Policy.ReliabilityBuilder.Build ( )
```

Creates a new **Reliability** (p. 940) immutable object from this one.

9.243.4 Property Documentation

9.243.4.1 Kind

ReliabilityKind Rti.Dds.Core.Policy.ReliabilityBuilder.Kind [get], [set]

Kind of reliability.

The full documentation is available in the C API: DDS_ReliabilityQosPolicy_kind

9.243.4.2 MaxBlockingTime

Duration Rti.Dds.Core.Policy.ReliabilityBuilder.MaxBlockingTime [get], [set]

The maximum time a writer may block on a write() call.

The full documentation is available in the C API: DDS_ReliabilityQosPolicy_max_blocking_time

9.243.4.3 AcknowledgmentKind

AcknowledgmentModeKind Rti.Dds.Core.Policy.ReliabilityBuilder.AcknowledgmentKind [get], [set]

Kind of reliable acknowledgment

The full documentation is available in the C API: DDSReliabilityQosPolicyacknowledgement_mode

9.243.4.4 InstanceStateConsistencyKind

InstanceStateConsistencyKind Rti.Dds.Core.Policy.ReliabilityBuilder.InstanceStateConsistencyKind [get], [set]

Whether instance state consistency is enabled

The full documentation is available in the C API: DDSReliabilityQosPolicyinstance_state_↩consistency_kind

9.243.4.5 ExactReliabilityKindMatch

bool Rti.Dds.Core.Policy.ReliabilityBuilder.ExactReliabilityKindMatch [get], [set]

Whether the exact kind match is enabled

The full documentation is available in the C API: DDSReliabilityQosPolicyexact_reliability_↩kind_match

9.244 Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus Class Reference

Describes the activity (i.e. are acknowledgements forthcoming) of reliable readers matched to a reliable writer.

Inherits IEquatable< ReliableReaderActivityChangedStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ReliableReaderActivityChangedStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **ActiveCount** `[get]`

  The current number of reliable readers currently matched with this reliable writer.
- **EventCount**< int > **InactiveCount** `[get]`

  The number of reliable readers that have been dropped by this reliable writer because they failed to send acknowledgements in a timely fashion.
- **InstanceHandle LastInstanceHandle** `[get]`

  The instance handle of the last reliable remote reader to be determined inactive.

9.244.1 Detailed Description

Describes the activity (i.e. are acknowledgements forthcoming) of reliable readers matched to a reliable writer.

The full documentation is available in the C API: `DDS_ReliableReaderActivityChangedStatus`

9.244.2 Member Function Documentation

9.244.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.244.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus.Equals (
            object other )
```

Compares for equality

9.244.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus.Equals (
             ReliableReaderActivityChangedStatus other )  [inline]
```

Compares for equality

9.244.2.4 ToString()

```
override string Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus.ToString ( )
```

Returns a readable summary of the status

9.244.3 Property Documentation

9.244.3.1 ActiveCount

```
EventCount<int> Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus.ActiveCount  [get]
```

The current number of reliable readers currently matched with this reliable writer.

The full documentation is available in the C API: DDS_ReliableReaderActivityChangedStatus_↩ active_count

9.244.3.2 InactiveCount

```
EventCount<int> Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus.InactiveCount  [get]
```

The number of reliable readers that have been dropped by this reliable writer because they failed to send acknowledgements in a timely fashion.

The full documentation is available in the C API: DDS_ReliableReaderActivityChangedStatus_↩ inactive_count

9.244.3.3 LastInstanceHandle

```
InstanceHandle Rti.Dds.Core.Status.ReliableReaderActivityChangedStatus.LastInstanceHandle [get]
```

The instance handle of the last reliable remote reader to be determined inactive.

The full documentation is available in the C API: DDS_ReliableReaderActivityChangedStatus_↩ last_instance_handle

9.245 Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus Class Reference

A summary of the state of a data writer's cache of unacknowledged samples written.

Inherits IEquatable< ReliableWriterCacheChangedStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ReliableWriterCacheChangedStatus** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **EmptyReliableWriterCache** [get]

  The number of times the reliable writer's cache of unacknowledged samples has become empty.
- **EventCount**< int > **FullReliableWriterCache** [get]

  The number of times the reliable writer's cache, or send window, of unacknowledged samples has become full.
- **EventCount**< int > **LowWatermarkReliableWriterCache** [get]

  The number of times the reliable writer's cache of unacknowledged samples has fallen to the low watermark.
- **EventCount**< int > **HighWatermarkReliableWriterCache** [get]

  The number of times the reliable writer's cache of unacknowledged samples has risen to the high watermark.
- int **UnacknowledgedSampleCount** [get]

  The current number of unacknowledged samples in the writer's cache.
- int **UnacknowledgedSampleCountPeak** [get]

  The highest value that unacknowledged_sample_count has reached until now.
- long **ReplacedUnacknowledgedSampleCount** [get]

  The number of unacknowledged samples that have been replaced in the writer's cache.

9.245.1 Detailed Description

A summary of the state of a data writer's cache of unacknowledged samples written.

The full documentation is available in the *C API:*DDS_ReliableWriterCacheChangedStatus

9.245.2 Member Function Documentation

9.245.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.245.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.Equals (
            object other )
```

Compares for equality

9.245.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.Equals (
             ReliableWriterCacheChangedStatus other )  [inline]
```

Compares for equality

9.245.2.4 ToString()

```
override string Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.ToString ( )
```

Returns a readable summary of the status

9.245.3 Property Documentation

9.245.3.1 EmptyReliableWriterCache

EventCount<int> Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.EmptyReliableWriterCache [get]

The number of times the reliable writer's cache of unacknowledged samples has become empty.

The full documentation is available in the C API: DDS_ReliableWriterCacheChangedStatus_empty_reliable_writer_cache

9.245.3.2 FullReliableWriterCache

EventCount<int> Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.FullReliableWriterCache [get]

The number of times the reliable writer's cache, or send window, of unacknowledged samples has become full.

The full documentation is available in the C API: DDS_ReliableWriterCacheChangedStatus_full_reliable_writer_cache

9.245.3.3 LowWatermarkReliableWriterCache

EventCount<int> Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.LowWatermarkReliableWriterCache [get]

The number of times the reliable writer's cache of unacknowledged samples has fallen to the low watermark.

The full documentation is available in the C API: DDS_ReliableWriterCacheChangedStatus_low_watermark_reliable_writer_cache

9.245.3.4 HighWatermarkReliableWriterCache

EventCount<int> Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.HighWatermarkReliableWriterCache [get]

The number of times the reliable writer's cache of unacknowledged samples has risen to the high watermark.

The full documentation is available in the C API: DDS_ReliableWriterCacheChangedStatus_high_watermark_reliable_writer_cache

9.245.3.5 UnacknowledgedSampleCount

```
int Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.UnacknowledgedSampleCount [get]
```

The current number of unacknowledged samples in the writer's cache.

The full documentation is available in the C API: DDS_ReliableWriterCacheChangedStatus_↩unacknowledged_sample_count

9.245.3.6 UnacknowledgedSampleCountPeak

```
int Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.UnacknowledgedSampleCountPeak [get]
```

The highest value that unacknowledged_sample_count has reached until now.

The full documentation is available in the C API: DDS_ReliableWriterCacheChangedStatus_↩unacknowledged_sample_count_peak

9.245.3.7 ReplacedUnacknowledgedSampleCount

```
long Rti.Dds.Core.Status.ReliableWriterCacheChangedStatus.ReplacedUnacknowledgedSampleCount [get]
```

The number of unacknowledged samples that have been replaced in the writer's cache.

The full documentation is available in the C API: DDS_ReliableWriterCacheChangedStatus_↩replaced_unacknowledged_sample_count

9.246 Rti.RequestReply.Replier< TRequest, TReply > Class Template Reference

Allows receiving requests and sending replies.

Inherits IDisposable.

Public Member Functions

- void **SendReply** (TReply reply, **SampleIdentity** relatedRequestId)

  Sends a reply to a specific request identified by a SampleIdentity.
- void **SendReply** (TReply reply, **SampleInfo** relatedRequestInfo)

  Sends a reply to a specific request identified by a SampleInfo.
- void **SendReply** (TReply reply, **WriteParams** writeParams)

  Sends a reply.
- bool **WaitForRequests** (int minCount, **Duration** maxWait)

  Wait for a number of requests for a duration of time.
- async Task< int > **WaitForRequestsAsync** (int minCount=1, CancellationToken cancellationToken=default)

  *Wait for a number of requests asynchronously until a minimum number of requests reach the **Replier** (p. 951), or a cancellation is requested using a CancellationToken.*
- **LoanedSamples**< TRequest > **ReceiveRequests** (int minCount, **Duration** maxWait)

  Receives a number of requests.
- **LoanedSamples**< TRequest > **TakeRequests** ()

  Takes all requests.
- **LoanedSamples**< TRequest > **ReadRequests** ()

  Reads all requests.
- void **ResetEvents** ()

  *Stop notifying of **RequestsAvailable** (p. 958) events and remove all its event handlers.*
- uint **GetMatchedRequesterCount** ()

  *Gets the number of **Requester** (p. 971)'s that are currently matched with this **Replier** (p. 951).*
- void **Dispose** ()

  Releases the native resources used by this object.

Properties

- **DataReader**< TRequest > **RequestReader** `[get]`

  The underlying DataReader<TRequest> used to read requests.
- **DataWriter**< TReply > **ReplyWriter** `[get]`

  The underlying DataWriter<TReply> used to send replies.
- Action< **Replier**< TRequest, TReply > > **RequestsAvailable**

  *Event triggered new requests are available on the **Replier** (p. 951).*

9.246.1 Detailed Description

Allows receiving requests and sending replies.

Template Parameters

TRequest	The type of the requests to be received.
TReply	The type of the replies to be sent.

A **Replier** (p. 951) is an entity with two associated topics: a request topic and a reply topic. It can receive requests by

subscribing to the request topic and can send replies to those requests by publishing the reply topic.

Valid types for these topics are: those generated by the rtiddsgen code generator, the DDS built-in types and **Rti.↩ Types.Dynamic.DynamicData** (p. 564).

A **Replier** (p. 951) has four main types of operations:

- Waiting for requests to be received from the middleware.
- Getting those requests.
- Receiving requests (a convenience operation that is a combination of waiting and getting in a single operation).
- Sending a reply for a previously received request (i.e., publishing a reply sample on the reply topic with special meta-data so that the original **Requester** (p. 971) can identify it).

For multi-reply scenarios in which a **Replier** (p. 951) generates more than one reply for a request, the **Replier** (p. 951) should mark all the intermediate replies (all but the last) using the **SampleFlags.IntermediateReplySequence** (p. 1022) flag in **Rti.Dds.Subscription.SampleInfo.Flag** (p. 1029).

A **Replier** (p. 951) has an associated **Rti.Dds.Domain.DomainParticipant** (p. 451), which can be shared with other requesters or RTI Connext routines. All the other RTI Connext entities required for the request-reply interaction, including a DataWriter<TReply> for writing replies and a DataReader<TRequest> for reading requests, are automatically created when the replier is constructed.

Quality of Service for the underlying DataWriter and DataReader can be configured (see **ReplierBuilder<TRequest, TReply>.WithDataWriterQos** (p. 962) and **ReplierBuilder<TRequest, TReply>.WithDataReaderQos** (p. 962)). By default, they are created with the QoS specified in the builtin profile "BuiltinQosLib::Pattern.RPC", which configures the DataWriter and DataReader with strict reliability and volatile durability.

There are several ways to use a **Replier** (p. 951):

- A thread receives requests and then dispatches them. If the computation of a reply is a simple operation, consider using a **SimpleReplier** (p. 1061) instead of a **Replier** (p. 951).
- Polling without waiting, using **Replier<TRequest, TReply>.TakeRequests** (p. 957) directly.
- Using an event handler that gets triggered when new requests are available (see **Replier<TRequest, TReply>.RequestsAvailable** (p. 958)).

Use `participant.BuildReplier<TRequest, TReply>()` (an extension method defined in **Domain↩ ParticipantRequestReplyExtensions** (p. 509)) to configure and build a **Replier** (p. 951).

For example, to create a basic **Replier** (p. 951):

```
var replier = participant.BuildReplier<FooRequest, FooReply>()
        .WithServiceName("FooService")
        .Create();
```

See also

Request-Reply Examples (p. 55)

9.246.2 Member Function Documentation

9.246.2.1 SendReply() [1/3]

```
void  Rti.RequestReply.Replier< TRequest, TReply >.SendReply (
            TReply reply,
             SampleIdentity relatedRequestId )
```

Sends a reply to a specific request identified by a SampleIdentity.

Parameters

reply	The reply to be sent.
relatedRequestId	Identifies a request previously sent by **Requester<TRequest, TReply>.SendRequest(TRequest)** (p. 973).

9.246.2.2 SendReply() [2/3]

```
void  Rti.RequestReply.Replier< TRequest, TReply >.SendReply (
            TReply reply,
             SampleInfo relatedRequestInfo )
```

Sends a reply to a specific request identified by a SampleInfo.

Parameters

reply	The reply to be sent.
relatedRequestInfo	Identifies a request previously sent by **Requester<TRequest, TReply>.SendRequest(TRequest)** (p. 973).

9.246.2.3 SendReply() [3/3]

```
void  Rti.RequestReply.Replier< TRequest, TReply >.SendReply (
            TReply reply,
             WriteParams writeParams )  [inline]
```

Sends a reply.

Parameters

reply	The reply to be sent.
writeParams	The parameters to write the reply.

Other parameters to customize are discussed in DataWriter<T>.Write(T, WriteParams). In particular, **Rti.Dds.Publication.WriteParams.Flag** (p. 1267) can be set to **SampleFlags.IntermediateReplySequence** (p. 1022) to inform the **Requester** (p. 971) application that this reply will be followed by additional replies to the same request. The **Requester** (p. 971) can access the flag in **Rti.Dds.Subscription.SampleInfo.Flag** (p. 1029) when it receives the reply.

9.246.2.4 WaitForRequests()

```
bool  Rti.RequestReply.Replier< TRequest, TReply >.WaitForRequests (
            int minCount,
             Duration maxWait )
```

Wait for a number of requests for a duration of time.

Parameters

minCount	The minimum number of requests to wait for.
maxWait	Maximum time to wait for the requests.

Returns

A bool indicating whether or not the number of specified requests have reached the **Replier** (p. 951).

9.246.2.5 WaitForRequestsAsync()

```
async Task< int >  Rti.RequestReply.Replier< TRequest, TReply >.WaitForRequestsAsync (
            int minCount = 1,
            CancellationToken cancellationToken = default )
```

Wait for a number of requests asynchronously until a minimum number of requests reach the **Replier** (p. 951), or a cancellation is requested using a CancellationToken.

Parameters

minCount	The minimum number of requests to wait for.
cancellationToken	A cancellation token for the wait.

Returns

A Task containing the number of requests that have reached the **Replier** (p. 951) while waiting.

9.246.2.6 ReceiveRequests()

```
LoanedSamples< TRequest >  Rti.RequestReply.Replier< TRequest, TReply >.ReceiveRequests (
            int minCount,
             Duration maxWait )
```

Receives a number of requests.

Parameters

minCount	The minimum number of requests to wait for.
maxWait	Maximum time to wait for the requests.

Returns

A LoanedSamples<TRequest> object containing the requests.

9.246.2.7 TakeRequests()

```
LoanedSamples< TRequest >  Rti.RequestReply.Replier< TRequest, TReply >.TakeRequests ( )
```

Takes all requests.

Returns

A LoanedSamples<TRequest> object containing the requests.

9.246.2.8 ReadRequests()

```
LoanedSamples< TRequest >  Rti.RequestReply.Replier< TRequest, TReply >.ReadRequests ( )
```

Reads all requests.

Returns

A LoanedSamples<TRequest> object containing the requests.

9.246.2.9 ResetEvents()

```
void  Rti.RequestReply.Replier< TRequest, TReply >.ResetEvents ( )  [inline]
```

Stop notifying of **RequestsAvailable** (p. 958) events and remove all its event handlers.

9.246.2.10 GetMatchedRequesterCount()

```
uint  Rti.RequestReply.Replier< TRequest, TReply >.GetMatchedRequesterCount ( )
```

Gets the number of **Requester** (p. 971)'s that are currently matched with this **Replier** (p. 951).

Returns

The number of matching **Requester** (p. 971)'s.

9.246.2.11 Dispose()

```
void  Rti.RequestReply.Replier< TRequest, TReply >.Dispose ( )  [inline]
```

Releases the native resources used by this object.

9.246.3 Property Documentation

9.246.3.1 RequestReader

```
DataReader<TRequest>  Rti.RequestReply.Replier< TRequest, TReply >.RequestReader  [get]
```

The underlying DataReader<TRequest> used to read requests.

9.246.3.2 ReplyWriter

```
DataWriter<TReply>  Rti.RequestReply.Replier< TRequest, TReply >.ReplyWriter  [get]
```

The underlying DataWriter<TReply> used to send replies.

9.246.3.3 RequestsAvailable

```
Action< Replier<TRequest, TReply> >  Rti.RequestReply.Replier< TRequest, TReply >.Requests↩
Available  [add], [remove]
```

Event triggered new requests are available on the **Replier** (p. 951).

9.247 Rti.RequestReply.ReplierBuilder< TRequest, TReply > Class Template Reference

A builder that allows configuring and creating a new **Replier** (p. 951). It can be retrieved via `participant.↩ BuildReplier<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequest↩ ReplyExtensions** (p. 509)).

Public Member Functions

- **ReplierBuilder**< TRequest, TReply > **WithTopicNames** (string requestTopicName, string replyTopicName)

  *Sets **RequestTopicName** (p. 964) and **ReplyTopicName** (p. 964).*
- **ReplierBuilder**< TRequest, TReply > **WithServiceName** (string serviceName)

  *Sets **ServiceName** (p. 965).*
- **ReplierBuilder**< TRequest, TReply > **WithRequestsAvailableHandler** (Action< **Replier**< TRequest, TReply > > requestHandler)

  *Sets **RequestHandler** (p. 965).*
- **ReplierBuilder**< TRequest, TReply > **WithPublisher** (**Publisher** publisher)

  *Sets **Publisher** (p. 965).*
- **ReplierBuilder**< TRequest, TReply > **WithSubscriber** (**Subscriber** subscriber)

  *Sets **Subscriber** (p. 965).*
- **ReplierBuilder**< TRequest, TReply > **WithDataWriterQos** (**DataWriterQos** dataWriterQos)

  *Sets **DataWriterQos** (p. 965).*
- **ReplierBuilder**< TRequest, TReply > **WithDataReaderQos** (**DataReaderQos** dataReaderQos)

  *Sets **DataReaderQos** (p. 965).*
- **ReplierBuilder**< TRequest, TReply > **WithRequestDynamicType** (**DynamicType** requestDynamicType)

  *Sets **RequestDynamicType** (p. 966).*
- **ReplierBuilder**< TRequest, TReply > **WithReplyDynamicType** (**DynamicType** replyDynamicType)

  *Sets **ReplyDynamicType** (p. 966).*
- **Replier**< TRequest, TReply > **Create** ()

  *Creates a new **Replier** (p. 951) object using the current properties of the ReplierBuilder<TRequest, TReply> instance.*

Properties

- **DomainParticipant Participant** `[get]`

  *The DomainParticipant used by the **Replier** (p. 951).*
- string **RequestTopicName** `[get, set]`

  *The name of the request topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- string **ReplyTopicName** `[get, set]`

  *The name of the reply topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- string **ServiceName** `[get, set]`

  *The service name that a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- Action< **Replier**< TRequest, TReply > > **RequestHandler** `[get, set]`

  The requestHandler to be notified when requests are available.
- **Publisher Publisher** `[get, set]`

  *The publisher used by the **Replier** (p. 951).*

- **Subscriber Subscriber** [get, set]

  *The subscriber used by the **Replier** (p. 951).*
- **DataWriterQos DataWriterQos** [get, set]

  *The QoS used by the **Replier** (p. 951)'s underlying DataWriter<TReply>.*
- **DataReaderQos DataReaderQos** [get, set]

  *The QoS used by the **Replier** (p. 951)'s underlying DataReader<TRequest>.*
- **DynamicType RequestDynamicType** [get, set]

  *The request type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.*
- **DynamicType ReplyDynamicType** [get, set]

  *The reply type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.*

9.247.1 Detailed Description

A builder that allows configuring and creating a new **Replier** (p. 951). It can be retrieved via participant.↩ BuildReplier<TRequest, TReply>() (an extension method defined in **DomainParticipantRequest**↩ **ReplyExtensions** (p. 509)).

The builder's configuration will be used to create the resulting **Replier** (p. 951). Either **WithTopicNames** (p. 960) or **WithServiceName** (p. 960) has to be used to set the corresponding properties for creation to be successful. The rest of properties will use the default configuration if not specified.

9.247.2 Member Function Documentation

9.247.2.1 WithTopicNames()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
TopicNames (
            string requestTopicName,
            string replyTopicName ) [inline]
```

Sets **RequestTopicName** (p. 964) and **ReplyTopicName** (p. 964).

Parameters

requestTopicName	The new **RequestTopicName** (p. 964) to be set.
replyTopicName	The new **ReplyTopicName** (p. 964) to be set.

Returns

The same builder.

Either the topic names or **ServiceName** (p. 965) have to be set in order to call **Create()** (p. 964).

9.247.2.2 WithServiceName()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
ServiceName (
            string serviceName ) [inline]
```

Sets **ServiceName** (p. 965).

Parameters

serviceName	The new **ServiceName** (p. 965) to be set.

Returns

The same builder.

Either the topic names or **ServiceName** (p. 965) have to be set in order to call **Create()** (p. 964).

9.247.2.3 WithRequestsAvailableHandler()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
RequestsAvailableHandler (
            Action< Replier< TRequest, TReply > > requestHandler ) [inline]
```

Sets **RequestHandler** (p. 965).

Parameters

requestHandler	The new **RequestHandler** (p. 965) to be set.

Returns

The same builder.

Request handlers can be added and removed after creating the **Replier** (p. 951). See **Replier<TRequest, TReply>.↩ RequestsAvailable** (p. 958) event.

9.247.2.4 WithPublisher()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
Publisher (
             Publisher publisher ) [inline]
```

Sets **Publisher** (p. 965).

Parameters

publisher	The new **Publisher** (p. 965) to be set.

Returns

The same builder.

9.247.2.5 WithSubscriber()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
Subscriber (
            Subscriber subscriber ) [inline]
```

Sets **Subscriber** (p. 965).

Parameters

subscriber	The new **Subscriber** (p. 965) to be set.

Returns

The same builder.

9.247.2.6 WithDataWriterQos()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
DataWriterQos (
            DataWriterQos dataWriterQos ) [inline]
```

Sets **DataWriterQos** (p. 965).

Parameters

dataWriterQos	The new **DataWriterQos** (p. 965) to be set.

Returns

The same builder.

9.247.2.7 WithDataReaderQos()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
DataReaderQos (
            DataReaderQos dataReaderQos ) [inline]
```

Sets **DataReaderQos** (p. 965).

Parameters

dataReaderQos	The new **DataReaderQos** (p. 965) to be set.

Returns

The same builder.

9.247.2.8 WithRequestDynamicType()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
RequestDynamicType (
            DynamicType requestDynamicType ) [inline]
```

Sets **RequestDynamicType** (p. 966).

Parameters

requestDynamicType	The new **RequestDynamicType** (p. 966) to be set.

Returns

The same builder.

9.247.2.9 WithReplyDynamicType()

```
ReplierBuilder< TRequest, TReply > Rti.RequestReply.ReplierBuilder< TRequest, TReply >.With↩
ReplyDynamicType (
            DynamicType replyDynamicType ) [inline]
```

Sets **ReplyDynamicType** (p. 966).

Parameters

replyDynamicType	The new **ReplyDynamicType** (p. 966) to be set.

Returns

The same builder.

9.247.2.10 Create()

```
Replier< TRequest, TReply >  Rti.RequestReply.ReplierBuilder< TRequest, TReply >.Create ( )
[inline]
```

Creates a new **Replier** (p. 951) object using the current properties of the ReplierBuilder<TRequest, TReply> instance.

Returns

The new **Replier** (p. 951) object.

9.247.3 Property Documentation

9.247.3.1 Participant

```
DomainParticipant  Rti.RequestReply.ReplierBuilder< TRequest, TReply >.Participant  [get]
```

The DomainParticipant used by the **Replier** (p. 951).

9.247.3.2 RequestTopicName

```
string  Rti.RequestReply.ReplierBuilder< TRequest, TReply >.RequestTopicName  [get], [set]
```

The name of the request topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 965) have to be set.

9.247.3.3 ReplyTopicName

string **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >.ReplyTopicName [get], [set]

The name of the reply topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 965) have to be set.

9.247.3.4 ServiceName

string **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >.ServiceName [get], [set]

The service name that a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 965) have to be set.

9.247.3.5 RequestHandler

Action< **Replier**<TRequest, TReply> > **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >.Request↩
Handler [get], [set]

The requestHandler to be notified when requests are available.

9.247.3.6 Publisher

Publisher **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >. **Publisher** [get], [set]

The publisher used by the **Replier** (p. 951).

9.247.3.7 Subscriber

Subscriber **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >. **Subscriber** [get], [set]

The subscriber used by the **Replier** (p. 951).

9.247.3.8 DataWriterQos

DataWriterQos **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >. **DataWriterQos** [get], [set]

The QoS used by the **Replier** (p. 951)'s underlying DataWriter<TReply>.

9.247.3.9 DataReaderQos

DataReaderQos **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >. **DataReaderQos** [get], [set]

The QoS used by the **Replier** (p. 951)'s underlying DataReader<TRequest>.

9.247.3.10 RequestDynamicType

DynamicType **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >.RequestDynamicType [get], [set]

The request type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.

This is required when the **Replier** (p. 951)'s TRequest is **Rti.Types.Dynamic.DynamicData** (p. 564).

9.247.3.11 ReplyDynamicType

DynamicType **Rti.RequestReply.ReplierBuilder**< TRequest, TReply >.ReplyDynamicType [get], [set]

The reply type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.

This is required when the **Replier** (p. 951)'s TReply is **Rti.Types.Dynamic.DynamicData** (p. 564).

9.248 Rti.Dds.Core.Status.RequestedDeadlineMissedStatus Class Reference

Indicates that the Subscription.DataReader<T> did not receive a new sample for an data-instance within the time period set in the Subscription.DataReader<T>'s **Policy.Deadline** (p. 409).

Inherits IEquatable< RequestedDeadlineMissedStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code.
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**RequestedDeadlineMissedStatus** other)

  Compares for equality.
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  Cumulative number of times that the deadline was violated for any instance read by the Subscription.DataReader<T>.
- **InstanceHandle LastInstanceHandle** [get]

  InstanceHandle *(p. 661) to the data-instance for which a requested deadline was missed.*

9.248.1 Detailed Description

Indicates that the Subscription.DataReader<T> did not receive a new sample for an data-instance within the time period set in the Subscription.DataReader<T>'s **Policy.Deadline** (p. 409).

The full documentation is available in the *C API:* DDS_RequestedDeadlineMissedStatus

9.248.2 Member Function Documentation

9.248.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.RequestedDeadlineMissedStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.248.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.RequestedDeadlineMissedStatus.Equals (
            object other )
```

Compares for equality.

9.248.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.RequestedDeadlineMissedStatus.Equals (
             RequestedDeadlineMissedStatus other )  [inline]
```

Compares for equality.

9.248.2.4 ToString()

```
override string Rti.Dds.Core.Status.RequestedDeadlineMissedStatus.ToString ( )
```

Returns a readable summary of the status

9.248.3 Property Documentation

9.248.3.1 TotalCount

```
EventCount<int> Rti.Dds.Core.Status.RequestedDeadlineMissedStatus.TotalCount [get]
```

Cumulative number of times that the deadline was violated for any instance read by the Subscription.DataReader<T>.

The full documentation is available in the C API: `DDS_RequestedDeadlineMissedStatus_total_count`

9.248.3.2 LastInstanceHandle

```
InstanceHandle Rti.Dds.Core.Status.RequestedDeadlineMissedStatus.LastInstanceHandle [get]
```

InstanceHandle (p. 661) to the data-instance for which a requested deadline was missed.

The full documentation is available in the C API: `DDS_RequestedDeadlineMissedStatus_last_instance_handle`

9.249 Rti.Dds.Core.Status.RequestedIncompatibleQosStatus Class Reference

Indicates that the Subscription.DataReader<T> discovered a Publication.DataWriter<T> for the same Topics.Topic<T>, but that Subscription.DataReader<T> had requested QoS settings incompatible with the ones offered by the Publication.DataWriter<T>.

Inherits IEquatable< RequestedIncompatibleQosStatus >.

Public Member Functions

- override int **GetHashCode** ()
  Gets the hash code.
- override bool **Equals** (object other)
  Compares for equality.
- bool **Equals** (**RequestedIncompatibleQosStatus** other)
  Compares for equality.
- override string **ToString** ()
  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  Cumulative number of times the Subscription.DataReader<T> discovered a Publication.DataWriter<T> for the same Topics.Topic<T> with an offered QoS that is incompatible with that requested by the Subscription.DataReader<T>.
- Type **LastPolicy** [get]

  The type of the policy that was found to be incompatible the last time an incompatibility was detected. (Note: if there are multiple incompatible policies, only one of them is reported here.)
- ImmutableDictionary< Type, int > **Policies** [get]

  A dictionary containing for each policy the total number of times that the Subscription.DataReader<T> discovered a Publication.DataWriter<T> for the same Topics.Topic<T> with a offered QoS that is incompatible with that requested by the Subscription.DataReader<T>.

9.249.1 Detailed Description

Indicates that the Subscription.DataReader<T> discovered a Publication.DataWriter<T> for the same Topics.↩ Topic<T>, but that Subscription.DataReader<T> had requested QoS settings incompatible with the ones offered by the Publication.DataWriter<T>.

The full documentation is available in the C API: DDS_RequestedIncompatibleQosStatus

9.249.2 Member Function Documentation

9.249.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.RequestedIncompatibleQosStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.249.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.RequestedIncompatibleQosStatus.Equals (
            object other )
```

Compares for equality.

9.249.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.RequestedIncompatibleQosStatus.Equals (
            RequestedIncompatibleQosStatus other ) [inline]
```

Compares for equality.

9.249.2.4 ToString()

```
override string Rti.Dds.Core.Status.RequestedIncompatibleQosStatus.ToString ( )
```

Returns a readable summary of the status

9.249.3 Property Documentation

9.249.3.1 TotalCount

```
EventCount<int> Rti.Dds.Core.Status.RequestedIncompatibleQosStatus.TotalCount [get]
```

Cumulative number of times the Subscription.DataReader<T> discovered a Publication.DataWriter<T> for the same Topics.Topic<T> with an offered QoS that is incompatible with that requested by the Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_RequestedIncompatibleQosStatus_total_count

9.249.3.2 LastPolicy

```
Type Rti.Dds.Core.Status.RequestedIncompatibleQosStatus.LastPolicy [get]
```

The type of the policy that was found to be incompatible the last time an incompatibility was detected. (Note: if there are multiple incompatible policies, only one of them is reported here.)

The full documentation is available in the C API: DDS_RequestedIncompatibleQosStatus_last_policy_id

9.249.3.3 Policies

```
ImmutableDictionary<Type, int> Rti.Dds.Core.Status.RequestedIncompatibleQosStatus.Policies [get]
```

A dictionary containing for each policy the total number of times that the Subscription.DataReader<T> discovered a Publication.DataWriter<T> for the same Topics.Topic<T> with a offered QoS that is incompatible with that requested by the Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_RequestedIncompatibleQosStatus_policies

9.250 Rti.RequestReply.Requester< TRequest, TReply > Class Template Reference

Allows sending requests and receiving replies.

Inherits IDisposable.

Public Member Functions

- **SampleIdentity SendRequest** (TRequest request)
  Sends a request.
- void **SendRequest** (TRequest request, **WriteParams** writeParams)
  Sends a request.
- **LoanedSamples**< TReply > **ReceiveReplies** (int minCount, **Duration** maxWait)
  Receives a number of replies.
- **LoanedSamples**< TReply > **TakeReplies** ()
  Takes all replies.
- **LoanedSamples**< TReply > **TakeReplies** (**SampleIdentity** relatedRequestId)
  Takes all of the replies for a specific request identified by a SampleIdentity.
- **LoanedSamples**< TReply > **ReadReplies** ()
  Reads all replies.
- **LoanedSamples**< TReply > **ReadReplies** (**SampleIdentity** relatedRequestId)
  Reads all of the replies for a specific request, identified by a SampleIdentity.
- bool **WaitForReplies** (int minCount, **Duration** maxWait)
  Wait for a number of replies for a duration of time.
- bool **WaitForReplies** (int minCount, **SampleIdentity** relatedRequestId, **Duration** maxWait)
  Wait for a number of replies identified by a SampleIdentity. for a duration of time.
- async Task< int > **WaitForRepliesAsync** (int minCount=1, CancellationToken cancellationToken=default)
  *Wait for a number of replies asynchronously until a minimum number of replies reach the **Requester** (p. 971), or a cancellation is requested using a CancellationToken,*
- async Task< int > **WaitForRepliesAsync** (int minCount, **SampleIdentity** relatedRequestId, CancellationToken cancellationToken=default)
  *Wait for a number of replies identified by a SampleIdentity asynchronously until a minimum number of replies reach the **Requester** (p. 971), or a cancellation is requested using a CancellationToken,*
- uint **GetMatchedReplierCount** ()
  *Returns the number of **Replier** (p. 951)'s that are currently matched with this **Requester** (p. 971).*
- void **Dispose** ()
  Releases the native resources used by this object.

Properties

- **DataWriter**< TRequest > **RequestWriter** `[get]`
  The underlying DataWriter<TRequest> used to send requests.
- **DataReader**< TReply > **ReplyReader** `[get]`
  The underlying DataReader<TReply> used to read replies.

9.250.1 Detailed Description

Allows sending requests and receiving replies.

Template Parameters

TRequest	The type of the requests to be sent.
TReply	The type of the replies to be received.

A **Requester** (p. 971) is an entity with two associated topics: a request topic and a reply topic. It can send requests by publishing samples of the request topic and receive replies to those requests by subscribing to the reply topic.

Valid types for these topics are: those generated by the rtiddsgen code generator, the DDS built-in types and **Rti.↩ Types.Dynamic.DynamicData** (p. 564).

A **Replier** (p. 951) and a **Requester** (p. 971) communicate when they use the same topics for requests and replies (see **RequesterBuilder<TRequest, TReply>.WithServiceName** (p. 980)) on the same domain ID. A **Requester** (p. 971) can send requests and receive one or multiple replies. It does that using the following operations:

- Sending requests (i.e. publishing request samples on the request topic)
- Waiting for replies to be received by the middleware (for any request or for a specific request)
- Getting those replies from the middleware. There are two ways to do this: take (the data samples are removed from the middleware) or read (the data samples remain in the middleware and can be read or taken again).
- A convenience operation, receive (which is a combination of wait and take).

In all cases, the middleware guarantees that a requester only receives reply samples that are associated with those requests that it sends.

For multi-reply scenarios, in which a **Requester** (p. 971) receives multiple replies from a **Replier** (p. 951) for a given request, the **Requester** (p. 971) can check if a reply is the last reply of a sequence of replies. To do so, see if the bit **SampleFlags.IntermediateReplySequence** (p. 1022) is set in **Rti.Dds.Subscription.SampleInfo.Flag** (p. 1029) after receiving each reply. This indicates it is NOT the last reply.

A **Requester** (p. 971) has an associated **Rti.Dds.Domain.DomainParticipant** (p. 451), which can be shared with other requesters or RTI Connext routines. All the other RTI Connext entities required for the request-reply interaction, including a DataWriter<TRequest> for writing requests and a DataReader<TReply> for reading replies, are automatically created when the requester is constructed.

Quality of Service for the underlying DataWriter and DataReader can be configured (see **RequesterBuilder<TRequest, TReply>.WithDataWriterQos** (p. 981) and **RequesterBuilder<TRequest, TReply>.WithDataReaderQos** (p. 981)). By default, they are created with the QoS specified in the builtin profile "BuiltinQosLib::Pattern.RPC", which configures the DataWriter and DataReader with strict reliability and volatile durability.

Use `participant.BuildRequester<TRequest, TReply>()` (an extension method defined in **Domain↩ ParticipantRequestReplyExtensions** (p. 509)) to configure and build a **Requester** (p. 971).

For example, to create a basic **Requester** (p. 971):

```
var requester = participant.BuildRequester<FooRequest, FooReply>()
        .WithServiceName("FooService")
        .Create();
```

See also

Request-Reply Examples (p. 55)

9.250.2 Member Function Documentation

9.250.2.1 SendRequest() [1/2]

```
SampleIdentity Rti.RequestReply.Requester< TRequest, TReply >.SendRequest (
            TRequest request ) [inline]
```

Sends a request.

Parameters

request	The request to be sent.

Returns

The identity of the request, which can be used to correlate it with a future reply.

9.250.2.2 SendRequest() [2/2]

```
void Rti.RequestReply.Requester< TRequest, TReply >.SendRequest (
            TRequest request,
             WriteParams writeParams )
```

Sends a request.

Parameters

request	The request to be sent.
writeParams	The parameters to write the request (see DataWriter<TRequest>.Write(TRequest, WriteParams))

This function allows setting the request identity in *writeParams.Identity* , among other advanced parameters. If the identity is not set, Connext automatically assigns it, and to obtain it *writeParams.ReplaceAuto* needs to be set to true. Then, after this function ends, *writeParams.Identity* will contain the request identity. If no additional parameters need to be set, use the simpler **SendRequest(TRequest)** (p. 973), which directly returns the automatically assigned identity.

9.250.2.3 ReceiveReplies()

```
LoanedSamples< TReply > Rti.RequestReply.Requester< TRequest, TReply >.ReceiveReplies (
            int minCount,
             Duration maxWait )
```

Receives a number of replies.

Parameters

minCount	The minimum number of replies to wait for.
maxWait	Maximum time to wait for the replies.

Returns

A LoanedSamples<TReply> object containing the replies.

9.250.2.4 TakeReplies() [1/2]

```
LoanedSamples< TReply >  Rti.RequestReply.Requester< TRequest, TReply >.TakeReplies ( )
```

Takes all replies.

Returns

A LoanedSamples<TReply> object containing the replies.

9.250.2.5 TakeReplies() [2/2]

```
LoanedSamples< TReply >  Rti.RequestReply.Requester< TRequest, TReply >.TakeReplies (
            SampleIdentity relatedRequestId )  [inline]
```

Takes all of the replies for a specific request identified by a SampleIdentity.

Parameters

relatedRequestId	Identifies a request previously sent by **SendRequest(TRequest)** (p. 973)

Returns

A LoanedSamples<TReply> object containing the replies.

9.250.2.6 ReadReplies() [1/2]

```
LoanedSamples< TReply >  Rti.RequestReply.Requester< TRequest, TReply >.ReadReplies ( )
```

Reads all replies.

Returns

A LoanedSamples<TReply> object containing the replies.

9.250.2.7 ReadReplies() [2/2]

```
LoanedSamples< TReply >  Rti.RequestReply.Requester< TRequest, TReply >.ReadReplies (
            SampleIdentity relatedRequestId )  [inline]
```

Reads all of the replies for a specific request, identified by a SampleIdentity.

Parameters

relatedRequestId	Identifies a request previously sent by **SendRequest(TRequest)** (p. 973).

Returns

A LoanedSamples<TReply> object containing the replies.

9.250.2.8 WaitForReplies() [1/2]

```
bool  Rti.RequestReply.Requester< TRequest, TReply >.WaitForReplies (
            int minCount,
             Duration maxWait )
```

Wait for a number of replies for a duration of time.

Parameters

minCount	The minimum number of replies to wait for.
maxWait	Maximum time to wait for the replies.

Returns

A bool indicating whether or not the number of specified replies have reached the **Requester** (p. 971).

9.250.2.9 WaitForReplies() [2/2]

```
bool  Rti.RequestReply.Requester< TRequest, TReply >.WaitForReplies (
            int minCount,
             SampleIdentity relatedRequestId,
             Duration maxWait )  [inline]
```

Wait for a number of replies identified by a SampleIdentity. for a duration of time.

Parameters

minCount	The minimum number of replies to wait for.
related↩ RequestId	Identifies a request previously sent by **SendRequest(TRequest)** (p. 973).
maxWait	Maximum time to wait for the replies.

Returns

A bool indicating whether or not the number of specified replies have reached the **Requester** (p. 971).

9.250.2.10 WaitForRepliesAsync() [1/2]

```
async Task< int >  Rti.RequestReply.Requester< TRequest, TReply >.WaitForRepliesAsync (
            int minCount = 1,
            CancellationToken cancellationToken = default )
```

Wait for a number of replies asynchronously until a minimum number of replies reach the **Requester** (p. 971), or a cancellation is requested using a CancellationToken,

Parameters

minCount	The minimum number of replies to wait for.
cancellationToken	A cancellation token for the wait.

Returns

A Task containing the number of replies that have reached the **Requester** (p. 971) while waiting.

9.250.2.11 WaitForRepliesAsync() [2/2]

```
async Task< int >  Rti.RequestReply.Requester< TRequest, TReply >.WaitForRepliesAsync (
            int minCount,
```

```
    SampleIdentity relatedRequestId,
CancellationToken cancellationToken = default )  [inline]
```

Wait for a number of replies identified by a SampleIdentity asynchronously until a minimum number of replies reach the **Requester** (p. 971), or a cancellation is requested using a CancellationToken,

Parameters

minCount	The minimum number of replies to wait for.
relatedRequestId	Identifies a request previously sent by **SendRequest(TRequest)** (p. 973).
cancellationToken	A cancellation token for the wait.

Returns

A Task containing the number of replies that have reached the **Requester** (p. 971) while waiting.

9.250.2.12 GetMatchedReplierCount()

```
uint Rti.RequestReply.Requester< TRequest, TReply >.GetMatchedReplierCount ( )
```

Returns the number of **Replier** (p. 951)'s that are currently matched with this **Requester** (p. 971).

Returns

The number of matching **Replier** (p. 951)'s.

9.250.2.13 Dispose()

```
void Rti.RequestReply.Requester< TRequest, TReply >.Dispose ( )  [inline]
```

Releases the native resources used by this object.

9.250.3 Property Documentation

9.250.3.1 RequestWriter

```
DataWriter<TRequest> Rti.RequestReply.Requester< TRequest, TReply >.RequestWriter  [get]
```

The underlying DataWriter<TRequest> used to send requests.

9.250.3.2 ReplyReader

```
DataReader<TReply> Rti.RequestReply.Requester< TRequest, TReply >.ReplyReader [get]
```

The underlying DataReader<TReply> used to read replies.

9.251 Rti.RequestReply.RequesterBuilder< TRequest, TReply > Class Template Reference

A builder that allows configuring and creating a new **Requester** (p. 971). It can be retrieved via `participant.↩ BuildRequester<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequest↩ ReplyExtensions** (p. 509)).

Public Member Functions

- **RequesterBuilder**< TRequest, TReply > **WithTopicNames** (string requestTopicName, string replyTopicName)

  *Sets **RequestTopicName** (p. 983) and **ReplyTopicName** (p. 983).*
- **RequesterBuilder**< TRequest, TReply > **WithServiceName** (string serviceName)

  *Sets **ServiceName** (p. 983).*
- **RequesterBuilder**< TRequest, TReply > **WithPublisher** (**Publisher** publisher)

  *Sets **Publisher** (p. 983).*
- **RequesterBuilder**< TRequest, TReply > **WithSubscriber** (**Subscriber** subscriber)

  *Sets **Subscriber** (p. 984).*
- **RequesterBuilder**< TRequest, TReply > **WithDataWriterQos** (**DataWriterQos** dataWriterQos)

  *Sets **DataWriterQos** (p. 984).*
- **RequesterBuilder**< TRequest, TReply > **WithDataReaderQos** (**DataReaderQos** dataReaderQos)

  *Sets **DataReaderQos** (p. 984).*
- **RequesterBuilder**< TRequest, TReply > **WithRequestDynamicType** (**DynamicType** requestDynamicType)

  *Sets **RequestDynamicType** (p. 984).*
- **RequesterBuilder**< TRequest, TReply > **WithReplyDynamicType** (**DynamicType** replyDynamicType)

  *Sets **ReplyDynamicType** (p. 984).*
- **Requester**< TRequest, TReply > **Create** ()

  *Creates a new **Requester** (p. 971) object using the current properties of the RequesterBuilder<TRequest, TReply> instance.*

Properties

- **DomainParticipant Participant** `[get]`

  *The DomainParticipant used by the **Requester** (p. 971).*
- string **RequestTopicName** `[get, set]`

  *The name of the request topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- string **ReplyTopicName** `[get, set]`

  *The name of the reply topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- string **ServiceName** `[get, set]`

*The service name that a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*

- **Publisher Publisher** `[get, set]`

  *The publisher used by the **Requester** (p. 971).*

- **Subscriber Subscriber** `[get, set]`

  *The subscriber used by the **Requester** (p. 971).*

- **DataWriterQos DataWriterQos** `[get, set]`

  *The QoS used by the **Requester** (p. 971)'s underlying DataWriter<TReply>.*

- **DataReaderQos DataReaderQos** `[get, set]`

  *The QoS used by the **Requester** (p. 971)'s underlying DataReader<TRequest>.*

- **DynamicType RequestDynamicType** `[get, set]`

  *The request type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.*

- **DynamicType ReplyDynamicType** `[get, set]`

  *The reply type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.*

9.251.1 Detailed Description

A builder that allows configuring and creating a new **Requester** (p. 971). It can be retrieved via `participant.BuildRequester<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequestReplyExtensions** (p. 509)).

The builder's configuration will be used to create the resulting **Requester** (p. 971). Either **WithTopicNames** (p. 979) or **WithServiceName** (p. 980) has to be used to set the corresponding properties for creation to be successful. The rest of properties will use the default configuration if not specified.

9.251.2 Member Function Documentation

9.251.2.1 WithTopicNames()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.WithTopicNames (
            string requestTopicName,
            string replyTopicName ) [inline]
```

Sets **RequestTopicName** (p. 983) and **ReplyTopicName** (p. 983).

Parameters

requestTopicName	The new **RequestTopicName** (p. 983) to be set.
replyTopicName	The new **ReplyTopicName** (p. 983) to be set.

Returns

The same builder.

Either the topic names or **ServiceName** (p. 983) have to be set in order to call **Create()** (p. 982).

9.251.2.2 WithServiceName()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.WithServiceName (
            string serviceName ) [inline]
```

Sets **ServiceName** (p. 983).

Parameters

serviceName	The new **ServiceName** (p. 983) to be set.

Returns

The same builder.

Either the topic names or **ServiceName** (p. 983) have to be set in order to call **Create()** (p. 982).

9.251.2.3 WithPublisher()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.WithPublisher (
             Publisher publisher ) [inline]
```

Sets **Publisher** (p. 983).

Parameters

publisher	The new **Publisher** (p. 983) to be set.

Returns

The same builder.

9.251.2.4 WithSubscriber()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.WithSubscriber (
             Subscriber subscriber ) [inline]
```

Sets **Subscriber** (p. 984).

Parameters

subscriber	The new **Subscriber** (p. 984) to be set.

Returns

The same builder.

9.251.2.5 WithDataWriterQos()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.With↩
DataWriterQos (
            DataWriterQos dataWriterQos ) [inline]
```

Sets **DataWriterQos** (p. 984).

Parameters

dataWriterQos	The new **DataWriterQos** (p. 984) to be set.

Returns

The same builder.

9.251.2.6 WithDataReaderQos()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.With↩
DataReaderQos (
            DataReaderQos dataReaderQos ) [inline]
```

Sets **DataReaderQos** (p. 984).

Parameters

dataReaderQos	The new **DataReaderQos** (p. 984) to be set.

Returns

The same builder.

9.251.2.7 WithRequestDynamicType()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.With↩
RequestDynamicType (
            DynamicType requestDynamicType ) [inline]
```

Sets **RequestDynamicType** (p. 984).

Parameters

requestDynamicType	The new **RequestDynamicType** (p. 984) to be set.

Returns

The same builder.

9.251.2.8 WithReplyDynamicType()

```
RequesterBuilder< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.With↩
ReplyDynamicType (
            DynamicType replyDynamicType ) [inline]
```

Sets **ReplyDynamicType** (p. 984).

Parameters

replyDynamicType	The new **ReplyDynamicType** (p. 984) to be set.

Returns

The same builder.

9.251.2.9 Create()

```
Requester< TRequest, TReply > Rti.RequestReply.RequesterBuilder< TRequest, TReply >.Create ( )
[inline]
```

Creates a new **Requester** (p. 971) object using the current properties of the RequesterBuilder<TRequest, TReply> instance.

Returns

The new **Requester** (p. 971) object.

9.251.3 Property Documentation

9.251.3.1 Participant

`DomainParticipant Rti.RequestReply.RequesterBuilder< TRequest, TReply >.Participant [get]`

The DomainParticipant used by the **Requester** (p. 971).

9.251.3.2 RequestTopicName

`string Rti.RequestReply.RequesterBuilder< TRequest, TReply >.RequestTopicName [get], [set]`

The name of the request topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 983) have to be set.

9.251.3.3 ReplyTopicName

`string Rti.RequestReply.RequesterBuilder< TRequest, TReply >.ReplyTopicName [get], [set]`

The name of the reply topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 983) have to be set.

9.251.3.4 ServiceName

`string Rti.RequestReply.RequesterBuilder< TRequest, TReply >.ServiceName [get], [set]`

The service name that a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 983) have to be set.

9.251.3.5 Publisher

Publisher **Rti.RequestReply.RequesterBuilder**< TRequest, TReply >. **Publisher** [get], [set]

The publisher used by the **Requester** (p. 971).

9.251.3.6 Subscriber

Subscriber **Rti.RequestReply.RequesterBuilder**< TRequest, TReply >. **Subscriber** [get], [set]

The subscriber used by the **Requester** (p. 971).

9.251.3.7 DataWriterQos

DataWriterQos **Rti.RequestReply.RequesterBuilder**< TRequest, TReply >. **DataWriterQos** [get], [set]

The QoS used by the **Requester** (p. 971)'s underlying DataWriter<TReply>.

9.251.3.8 DataReaderQos

DataReaderQos **Rti.RequestReply.RequesterBuilder**< TRequest, TReply >. **DataReaderQos** [get], [set]

The QoS used by the **Requester** (p. 971)'s underlying DataReader<TRequest>.

9.251.3.9 RequestDynamicType

DynamicType **Rti.RequestReply.RequesterBuilder**< TRequest, TReply >.RequestDynamicType [get], [set]

The request type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.

This is required when the **Requester** (p. 971)'s TRequest is **Rti.Types.Dynamic.DynamicData** (p. 564).

9.251.3.10 ReplyDynamicType

DynamicType Rti.RequestReply.RequesterBuilder< TRequest, TReply >.ReplyDynamicType [get], [set]

The reply type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.

This is required when the **Requester** (p. 971)'s TReply is **Rti.Types.Dynamic.DynamicData** (p. 564).

9.252 Rti.Dds.Core.Policy.ResourceLimits Class Reference

Controls the amount of physical memory allocated for DDS entities, if dynamic allocations are allowed, and how they occur. Also controls memory usage among different instance values for keyed topics.

Inherits IEquatable< ResourceLimits >.

Public Member Functions

- **ResourceLimits With** (Action< **ResourceLimitsBuilder** > build)

  *Creates a new **ResourceLimits** (p. 985) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**ResourceLimits** other)

  Compares for equality

Static Public Attributes

- const int **LengthUnlimited** = -1

  Value that represents an unlimited length.

Properties

- int **MaxSamples** [get]

  Represents the maximum samples the middleware can store for any one Publication.DataWriter<T> (or Subscription.DataReader<T>).
- int **MaxInstances** [get]

  Represents the maximum number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) can manage.
- int **MaxSamplesPerInstance** [get]

  Represents the maximum number of samples of any one instance a Publication.DataWriter<T> (or Subscription.DataReader<T>) can manage.
- int **InitialSamples** [get]

  Represents the initial samples the middleware will store for any one Publication.DataWriter<T> (or Subscription.DataReader<T>).
- int **InitialInstances** [get]

  Represents the initial number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) will manage.
- int **InstanceHashBuckets** [get]

  Number of hash buckets for instances.
- static **ResourceLimits Default** [get]

  *Singleton containing the default value of a **ResourceLimits** (p. 985)*

9.252.1 Detailed Description

Controls the amount of physical memory allocated for DDS entities, if dynamic allocations are allowed, and how they occur. Also controls memory usage among different instance values for keyed topics.

The full documentation is available in the C API: `DDS_ResourceLimitsQosPolicy`

9.252.2 Member Function Documentation

9.252.2.1 With()

```
ResourceLimits Rti.Dds.Core.Policy.ResourceLimits.With (
            Action< ResourceLimitsBuilder > build )  [inline]
```

Creates a new **ResourceLimits** (p. 985) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **ResourceLimits** (p. 985).

Returns

A new **ResourceLimits** (p. 985) with the changes applied by the Action

9.252.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.ResourceLimits.GetHashCode ( )  [inline]
```

Gets the hash code

9.252.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.ResourceLimits.Equals (
            object other )
```

Compares for equality

9.252.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.ResourceLimits.Equals (
            ResourceLimits other )  [inline]
```

Compares for equality

9.252.3 Field Documentation

9.252.3.1 LengthUnlimited

```
const int Rti.Dds.Core.Policy.ResourceLimits.LengthUnlimited = -1  [static]
```

Value that represents an unlimited length.

9.252.4 Property Documentation

9.252.4.1 MaxSamples

```
int Rti.Dds.Core.Policy.ResourceLimits.MaxSamples  [get]
```

Represents the maximum samples the middleware can store for any one Publication.DataWriter<T> (or Subscription.↩ DataReader<T>).

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_max_samples

9.252.4.2 MaxInstances

```
int Rti.Dds.Core.Policy.ResourceLimits.MaxInstances  [get]
```

Represents the maximum number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) can manage.

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_max_instances

9.252.4.3 MaxSamplesPerInstance

```
int Rti.Dds.Core.Policy.ResourceLimits.MaxSamplesPerInstance [get]
```

Represents the maximum number of samples of any one instance a Publication.DataWriter<T> (or Subscription.↩ DataReader<T>) can manage.

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_max_samples_per↩ _instance

9.252.4.4 InitialSamples

```
int Rti.Dds.Core.Policy.ResourceLimits.InitialSamples [get]
```

Represents the initial samples the middleware will store for any one Publication.DataWriter<T> (or Subscription.Data↩ Reader<T>).

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_initial_samples

9.252.4.5 InitialInstances

```
int Rti.Dds.Core.Policy.ResourceLimits.InitialInstances [get]
```

Represents the initial number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) will manage.

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_initial_instances

9.252.4.6 InstanceHashBuckets

```
int Rti.Dds.Core.Policy.ResourceLimits.InstanceHashBuckets [get]
```

Number of hash buckets for instances.

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_instance_hash_↩ buckets

9.252.4.7 Default

```
ResourceLimits Rti.Dds.Core.Policy.ResourceLimits.Default [static], [get]
```

Singleton containing the default value of a **ResourceLimits** (p. 985)

9.253 Rti.Dds.Core.Policy.ResourceLimitsBuilder Class Reference

A modifiable type used to create an immutable **ResourceLimits** (p. 985)

Public Member Functions

- **ResourceLimitsBuilder** (**ResourceLimits** data)

  Creates a builder with the values of an existing immutable instance
- **ResourceLimits Build** ()

  *Creates a new **ResourceLimits** (p. 985) immutable object from this one.*

Properties

- int **MaxSamples** `[get, set]`

  Represents the maximum samples the middleware can store for any one Publication.DataWriter<T> (or Subscription.DataReader<T>).
- int **MaxInstances** `[get, set]`

  Represents the maximum number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) can manage.
- int **MaxSamplesPerInstance** `[get, set]`

  Represents the maximum number of samples of any one instance a Publication.DataWriter<T> (or Subscription.DataReader<T>) can manage.
- int **InitialSamples** `[get, set]`

  Represents the initial samples the middleware will store for any one Publication.DataWriter<T> (or Subscription.DataReader<T>).
- int **InitialInstances** `[get, set]`

  Represents the initial number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) will manage.
- int **InstanceHashBuckets** `[get, set]`

  Number of hash buckets for instances.

9.253.1 Detailed Description

A modifiable type used to create an immutable **ResourceLimits** (p. 985)

9.253.2 Constructor & Destructor Documentation

9.253.2.1 ResourceLimitsBuilder()

```
Rti.Dds.Core.Policy.ResourceLimitsBuilder.ResourceLimitsBuilder (
            ResourceLimits data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.253.3 Member Function Documentation

9.253.3.1 Build()

```
ResourceLimits Rti.Dds.Core.Policy.ResourceLimitsBuilder.Build ( )
```

Creates a new **ResourceLimits** (p. 985) immutable object from this one.

9.253.4 Property Documentation

9.253.4.1 MaxSamples

```
int Rti.Dds.Core.Policy.ResourceLimitsBuilder.MaxSamples  [get], [set]
```

Represents the maximum samples the middleware can store for any one Publication.DataWriter<T> (or Subscription.↩ DataReader<T>).

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_max_samples

9.253.4.2 MaxInstances

```
int Rti.Dds.Core.Policy.ResourceLimitsBuilder.MaxInstances  [get], [set]
```

Represents the maximum number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) can manage.

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_max_instances

9.253.4.3 MaxSamplesPerInstance

```
int Rti.Dds.Core.Policy.ResourceLimitsBuilder.MaxSamplesPerInstance  [get], [set]
```

Represents the maximum number of samples of any one instance a Publication.DataWriter<T> (or Subscription.↩ DataReader<T>) can manage.

The full documentation is available in the C API: DDS_ResourceLimitsQosPolicy_max_samples_per↩ _instance

9.253.4.4 InitialSamples

```
int Rti.Dds.Core.Policy.ResourceLimitsBuilder.InitialSamples [get], [set]
```

Represents the initial samples the middleware will store for any one Publication.DataWriter<T> (or Subscription.Data↩ Reader<T>).

The full documentation is available in the C API: `DDS_ResourceLimitsQosPolicy_initial_samples`

9.253.4.5 InitialInstances

```
int Rti.Dds.Core.Policy.ResourceLimitsBuilder.InitialInstances [get], [set]
```

Represents the initial number of instances a Publication.DataWriter<T> (or Subscription.DataReader<T>) will manage.

The full documentation is available in the C API: `DDS_ResourceLimitsQosPolicy_initial_instances`

9.253.4.6 InstanceHashBuckets

```
int Rti.Dds.Core.Policy.ResourceLimitsBuilder.InstanceHashBuckets [get], [set]
```

Number of hash buckets for instances.

The full documentation is available in the C API: `DDS_ResourceLimitsQosPolicy_instance_hash_↩ buckets`

9.254 Rti.Dds.Core.Policy.RtpsReliableReaderProtocol Class Reference

Qos related to reliable reader protocol defined in RTPS.

Inherits IEquatable< RtpsReliableReaderProtocol >.

Public Member Functions

- **RtpsReliableReaderProtocol With** (Action< **RtpsReliableReaderProtocolBuilder** > build)

  *Creates a new **RtpsReliableReaderProtocol** (p. 991) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**RtpsReliableReaderProtocol** other)

  Compares for equality

Properties

- **Duration MinHeartbeatResponseDelay** [get]

  The minimum delay to respond to a heartbeat.
- **Duration MaxHeartbeatResponseDelay** [get]

  The maximum delay to respond to a heartbeat.
- **Duration HeartbeatSuppressionDuration** [get]

  The duration a reader ignores consecutively received heartbeats
- **Duration NackPeriod** [get]

  The period at which to send NACKs
- int **ReceiveWindowSize** [get]

  The number of received out-of-order samples a reader can keep at a time
- **Duration RoundTripTime** [get]

  The duration from sending a NACK to receiving a repair of a sample
- **Duration AppAckPeriod** [get]

  The period at which application-level acknowledgment messages are sent
- **Duration MinAppAckResponseKeepDuration** [get]

  Minimum duration for which application-level acknowledgment response data is kept
- int **SamplesPerAppAck** [get]

  The minimum number of samples acknowledged by one application-level acknowledgment message
- static **RtpsReliableReaderProtocol Default** [get]

  Singleton containing the default value of a ***RtpsReliableReaderProtocol*** *(p. 991)*

9.254.1 Detailed Description

Qos related to reliable reader protocol defined in RTPS.

The full documentation is available in the C API: `DDS_RtpsReliableReaderProtocol_t`

9.254.2 Member Function Documentation

9.254.2.1 With()

```
RtpsReliableReaderProtocol Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.With (
            Action< RtpsReliableReaderProtocolBuilder > build ) [inline]
```

Creates a new **RtpsReliableReaderProtocol** (p. 991) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **RtpsReliableReaderProtocol** (p. 991).

Returns

A new **RtpsReliableReaderProtocol** (p. 991) with the changes applied by the Action

9.254.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.GetHashCode ( )  [inline]
```

Gets the hash code

9.254.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.Equals (
            object other )
```

Compares for equality

9.254.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.Equals (
             RtpsReliableReaderProtocol other )  [inline]
```

Compares for equality

9.254.3 Property Documentation

9.254.3.1 MinHeartbeatResponseDelay

```
Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.MinHeartbeatResponseDelay  [get]
```

The minimum delay to respond to a heartbeat.

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_min_↩ heartbeat_response_delay

9.254.3.2 MaxHeartbeatResponseDelay

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.MaxHeartbeatResponseDelay [get]

The maximum delay to respond to a heartbeat.

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_max_↩ heartbeat_response_delay

9.254.3.3 HeartbeatSuppressionDuration

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.HeartbeatSuppressionDuration [get]

The duration a reader ignores consecutively received heartbeats

*The full documentation is available in the C API:*DDS_RtpsReliableReaderProtocol_t_heartbeat_↩ suppression_duration

9.254.3.4 NackPeriod

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.NackPeriod [get]

The period at which to send NACKs

*The full documentation is available in the C API:*DDS_RtpsReliableReaderProtocol_t_nack_period

9.254.3.5 ReceiveWindowSize

int Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.ReceiveWindowSize [get]

The number of received out-of-order samples a reader can keep at a time

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_receive_↩ window_size

9.254.3.6 RoundTripTime

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.RoundTripTime [get]

The duration from sending a NACK to receiving a repair of a sample

*The full documentation is available in the C API:*DDS_RtpsReliableReaderProtocol_t_round_trip↩ _time

9.254.3.7 AppAckPeriod

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.AppAckPeriod [get]

The period at which application-level acknowledgment messages are sent

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_app_ack_↩ period

9.254.3.8 MinAppAckResponseKeepDuration

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.MinAppAckResponseKeepDuration [get]

Minimum duration for which application-level acknowledgment response data is kept

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_min_app_↩ ack_response_keep_duration

9.254.3.9 SamplesPerAppAck

int Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.SamplesPerAppAck [get]

The minimum number of samples acknowledged by one application-level acknowledgment message

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_samples_↩ per_app_ack

9.254.3.10 Default

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.RtpsReliableReaderProtocol.Default [static], [get]

Singleton containing the default value of a **RtpsReliableReaderProtocol** (p. 991)

9.255 Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder Class Reference

A modifiable type used to create an immutable **RtpsReliableReaderProtocol** (p. 991)

Public Member Functions

- **RtpsReliableReaderProtocolBuilder** (**RtpsReliableReaderProtocol** data)
  Creates a builder with the values of an existing immutable instance
- **RtpsReliableReaderProtocol Build** ()
  *Creates a new **RtpsReliableReaderProtocol** (p. 991) immutable object from this one.*

Properties

- **Duration MinHeartbeatResponseDelay** `[get, set]`

  The minimum delay to respond to a heartbeat.
- **Duration MaxHeartbeatResponseDelay** `[get, set]`

  The maximum delay to respond to a heartbeat.
- **Duration HeartbeatSuppressionDuration** `[get, set]`

  The duration a reader ignores consecutively received heartbeats
- **Duration NackPeriod** `[get, set]`

  The period at which to send NACKs
- int **ReceiveWindowSize** `[get, set]`

  The number of received out-of-order samples a reader can keep at a time
- **Duration RoundTripTime** `[get, set]`

  The duration from sending a NACK to receiving a repair of a sample
- **Duration AppAckPeriod** `[get, set]`

  The period at which application-level acknowledgment messages are sent
- **Duration MinAppAckResponseKeepDuration** `[get, set]`

  Minimum duration for which application-level acknowledgment response data is kept
- int **SamplesPerAppAck** `[get, set]`

  The minimum number of samples acknowledged by one application-level acknowledgment message

9.255.1 Detailed Description

A modifiable type used to create an immutable **RtpsReliableReaderProtocol** (p. 991)

9.255.2 Constructor & Destructor Documentation

9.255.2.1 RtpsReliableReaderProtocolBuilder()

```
Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.RtpsReliableReaderProtocolBuilder (
            RtpsReliableReaderProtocol data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.255.3 Member Function Documentation

9.255.3.1 Build()

RtpsReliableReaderProtocol Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.Build ( )

Creates a new **RtpsReliableReaderProtocol** (p. 991) immutable object from this one.

9.255.4 Property Documentation

9.255.4.1 MinHeartbeatResponseDelay

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.MinHeartbeatResponseDelay [get], [set]

The minimum delay to respond to a heartbeat.

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_min_↩ heartbeat_response_delay

9.255.4.2 MaxHeartbeatResponseDelay

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.MaxHeartbeatResponseDelay [get], [set]

The maximum delay to respond to a heartbeat.

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_max_↩ heartbeat_response_delay

9.255.4.3 HeartbeatSuppressionDuration

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.HeartbeatSuppressionDuration [get], [set]

The duration a reader ignores consecutively received heartbeats

*The full documentation is available in the C API:*DDS_RtpsReliableReaderProtocol_t_heartbeat_↩ suppression_duration

9.255.4.4 NackPeriod

Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.NackPeriod [get], [set]

The period at which to send NACKs

*The full documentation is available in the C API:*DDS_RtpsReliableReaderProtocol_t_nack_period

9.255.4.5 ReceiveWindowSize

```
int Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.ReceiveWindowSize [get], [set]
```

The number of received out-of-order samples a reader can keep at a time

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_receive_↩
window_size

9.255.4.6 RoundTripTime

```
Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.RoundTripTime [get], [set]
```

The duration from sending a NACK to receiving a repair of a sample

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_round_trip↩
_time

9.255.4.7 AppAckPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.AppAckPeriod [get], [set]
```

The period at which application-level acknowledgment messages are sent

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_app_ack_↩
period

9.255.4.8 MinAppAckResponseKeepDuration

```
Duration Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.MinAppAckResponseKeepDuration
[get], [set]
```

Minimum duration for which application-level acknowledgment response data is kept

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_min_app_↩
ack_response_keep_duration

9.255.4.9 SamplesPerAppAck

```
int Rti.Dds.Core.Policy.RtpsReliableReaderProtocolBuilder.SamplesPerAppAck [get], [set]
```

The minimum number of samples acknowledged by one application-level acknowledgment message

The full documentation is available in the C API: DDS_RtpsReliableReaderProtocol_t_samples_↩
per_app_ack

9.256 Rti.Dds.Core.Policy.RtpsReliableWriterProtocol Class Reference

QoS related to the reliable writer protocol defined in RTPS.

Inherits IEquatable< RtpsReliableWriterProtocol >.

Public Member Functions

- **RtpsReliableWriterProtocol With** (Action< **RtpsReliableWriterProtocolBuilder** > build)

  *Creates a new **RtpsReliableWriterProtocol** (p. 999) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**RtpsReliableWriterProtocol** other)

  Compares for equality

Properties

- int **LowWatermark** [get]

  *When the number of unacknowledged samples in the current send window of a reliable writer meets or falls below this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.*
- int **HighWatermark** [get]

  *When the number of unacknowledged samples in the current send window of a reliable writer meets or exceeds this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.*
- **Duration HeartbeatPeriod** [get]

  The period at which to send heartbeats.
- **Duration FastHeartbeatPeriod** [get]

  An alternative heartbeat period used when a reliable writer needs to flush its unacknowledged samples more quickly.
- **Duration LateJoinerHeartbeatPeriod** [get]

  An alternative heartbeat period used when a reliable reader joins late and needs to be caught up on cached samples of a reliable writer more quickly than the normal heartbeat rate.
- **Duration VirtualHeartbeatPeriod** [get]

  The period at which to send virtual heartbeats. Virtual heartbeats inform the reliable reader about the range of samples currently present, for each virtual GUID, in the reliable writer's queue.
- int **SamplesPerVirtualHeartbeat** [get]

  The number of samples that a reliable writer has to publish before sending a virtual heartbeat.
- int **MaxHeartbeatRetries** [get]

  The maximum number of periodic heartbeat retries before marking a remote reader as inactive.
- bool **InactivateNonprogressingReaders** [get]

  Whether to treat remote readers as inactive when their NACKs do not progress
- int **HeartbeatsPerMaxSamples** [get]

  The number of heartbeats per current send window.
- **Duration MinNackResponseDelay** [get]

  The minimum delay to respond to a NACK or NACK_FRAG.
- **Duration MaxNackResponseDelay** [get]

The maximum delay to respond to a NACK or NACK_FRAG.

- **Duration NackSuppressionDuration** [get]

  The duration for ignoring consecutive NACKs/NACK_FRAGs that may trigger redundant repairs.
- int **MaxBytesPerNackResponse** [get]

  The maximum total message size when resending rejected samples or data fragments.
- **Duration DisablePositiveAcksMinSampleKeepDuration** [get]

  The minimum duration a sample is queued for ACK-disabled readers.
- **Duration DisablePositiveAcksMaxSampleKeepDuration** [get]

  The maximum duration a sample is queued for ACK-disabled readers.
- bool **DisablePositiveAcksEnableAdaptiveSampleKeepDuration** [get]

  Enables dynamic adjustment of sample keep duration in response to congestion.
- int **DisablePositiveAcksDecreaseSampleKeepDurationFactor** [get]

  Controls rate of contraction of dynamic sample keep duration.
- int **DisablePositiveAcksIncreaseSampleKeepDurationFactor** [get]

  Controls rate of growth of dynamic sample keep duration.
- int **MinSendWindowSize** [get]

  Minimum size of send window of unacknowledged samples
- int **MaxSendWindowSize** [get]

  Maximum size of send window of unacknowledged samples
- **Duration SendWindowUpdatePeriod** [get]

  Period in which send window may be dynamically changed
- int **SendWindowIncreaseFactor** [get]

  Increases send window size by this percentage when reacting dynamically to network conditions
- int **SendWindowDecreaseFactor** [get]

  Decreases send window size by this percentage when reacting dynamically to network conditions
- bool **EnableMulticastPeriodicHeartbeat** [get]

  Whether periodic heartbeat messages are sent over multicast
- int **MulticastResendThreshold** [get]

  The minimum number of requesting readers needed to trigger a multicast resend
- bool **DisableRepairPiggybackHeartbeat** [get]

  Prevents piggyback heartbeats from being sent with repair samples
- static **RtpsReliableWriterProtocol Default** [get]

  *Singleton containing the default value of a **RtpsReliableWriterProtocol** (p. 999)*

9.256.1 Detailed Description

QoS related to the reliable writer protocol defined in RTPS.

The full documentation is available in the `C API:DDS_RtpsReliableWriterProtocol_t`

9.256.2 Member Function Documentation

9.256.2.1 With()

```
RtpsReliableWriterProtocol Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.With (
            Action< RtpsReliableWriterProtocolBuilder > build ) [inline]
```

Creates a new **RtpsReliableWriterProtocol** (p. 999) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **RtpsReliableWriterProtocol** (p. 999).

Returns

A new **RtpsReliableWriterProtocol** (p. 999) with the changes applied by the Action

9.256.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.GetHashCode ( )  [inline]
```

Gets the hash code

9.256.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.Equals (
            object other )
```

Compares for equality

9.256.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.Equals (
             RtpsReliableWriterProtocol other )  [inline]
```

Compares for equality

9.256.3 Property Documentation

9.256.3.1 LowWatermark

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.LowWatermark [get]
```

When the number of unacknowledged samples in the current send window of a reliable writer meets or falls below this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_low_watermark

9.256.3.2 HighWatermark

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.HighWatermark [get]
```

When the number of unacknowledged samples in the current send window of a reliable writer meets or exceeds this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_high_watermark

9.256.3.3 HeartbeatPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.HeartbeatPeriod [get]
```

The period at which to send heartbeats.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_heartbeat_period

9.256.3.4 FastHeartbeatPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.FastHeartbeatPeriod [get]
```

An alternative heartbeat period used when a reliable writer needs to flush its unacknowledged samples more quickly.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_fast_heartbeat_period

9.256.3.5 LateJoinerHeartbeatPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.LateJoinerHeartbeatPeriod [get]
```

An alternative heartbeat period used when a reliable reader joins late and needs to be caught up on cached samples of a reliable writer more quickly than the normal heartbeat rate.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_late_joiner_heartbeat_period

9.256.3.6 VirtualHeartbeatPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.VirtualHeartbeatPeriod [get]
```

The period at which to send virtual heartbeats. Virtual heartbeats inform the reliable reader about the range of samples currently present, for each virtual GUID, in the reliable writer's queue.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_virtual_↩ heartbeat_period

9.256.3.7 SamplesPerVirtualHeartbeat

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.SamplesPerVirtualHeartbeat [get]
```

The number of samples that a reliable writer has to publish before sending a virtual heartbeat.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_samples_↩ per_virtual_heartbeat

9.256.3.8 MaxHeartbeatRetries

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.MaxHeartbeatRetries [get]
```

The maximum number of *periodic* heartbeat retries before marking a remote reader as inactive.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_↩ heartbeat_retries

9.256.3.9 InactivateNonprogressingReaders

```
bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.InactivateNonprogressingReaders [get]
```

Whether to treat remote readers as inactive when their NACKs do not progress

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_inactivate↩ _nonprogressing_readers

9.256.3.10 HeartbeatsPerMaxSamples

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.HeartbeatsPerMaxSamples [get]
```

The number of heartbeats per current send window.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_heartbeats↩ _per_max_samples

9.256.3.11 MinNackResponseDelay

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.MinNackResponseDelay [get]

The minimum delay to respond to a NACK or NACK_FRAG.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_min_nack_↩response_delay

9.256.3.12 MaxNackResponseDelay

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.MaxNackResponseDelay [get]

The maximum delay to respond to a NACK or NACK_FRAG.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_nack_↩response_delay

9.256.3.13 NackSuppressionDuration

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.NackSuppressionDuration [get]

The duration for ignoring consecutive NACKs/NACK_FRAGs that may trigger redundant repairs.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_nack_↩suppression_duration

9.256.3.14 MaxBytesPerNackResponse

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.MaxBytesPerNackResponse [get]

The maximum total message size when resending rejected samples or data fragments.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_bytes_↩per_nack_response

9.256.3.15 DisablePositiveAcksMinSampleKeepDuration

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.DisablePositiveAcksMinSampleKeepDuration [get]

The minimum duration a sample is queued for ACK-disabled readers.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_↩positive_acks_min_sample_keep_duration

9.256.3.16 DisablePositiveAcksMaxSampleKeepDuration

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.DisablePositiveAcksMaxSampleKeepDuration [get]

The maximum duration a sample is queued for ACK-disabled readers.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_positive_acks_max_sample_keep_duration

9.256.3.17 DisablePositiveAcksEnableAdaptiveSampleKeepDuration

bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.DisablePositiveAcksEnableAdaptiveSampleKeepDuration [get]

Enables dynamic adjustment of sample keep duration in response to congestion.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_positive_acks_enable_adaptive_sample_keep_duration

9.256.3.18 DisablePositiveAcksDecreaseSampleKeepDurationFactor

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.DisablePositiveAcksDecreaseSampleKeepDurationFactor [get]

Controls rate of contraction of dynamic sample keep duration.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_positive_acks_decrease_sample_keep_duration_factor

9.256.3.19 DisablePositiveAcksIncreaseSampleKeepDurationFactor

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.DisablePositiveAcksIncreaseSampleKeepDurationFactor [get]

Controls rate of growth of dynamic sample keep duration.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_positive_acks_increase_sample_keep_duration_factor

9.256.3.20 MinSendWindowSize

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.MinSendWindowSize [get]

Minimum size of send window of unacknowledged samples

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_min_send_window_size

9.256.3.21 MaxSendWindowSize

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.MaxSendWindowSize [get]
```

Maximum size of send window of unacknowledged samples

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_send_↩ window_size

9.256.3.22 SendWindowUpdatePeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.SendWindowUpdatePeriod [get]
```

Period in which send window may be dynamically changed

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_send_↩ window_update_period

9.256.3.23 SendWindowIncreaseFactor

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.SendWindowIncreaseFactor [get]
```

Increases send window size by this percentage when reacting dynamically to network conditions

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_send_↩ window_increase_factor

9.256.3.24 SendWindowDecreaseFactor

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.SendWindowDecreaseFactor [get]
```

Decreases send window size by this percentage when reacting dynamically to network conditions

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_send_↩ window_decrease_factor

9.256.3.25 EnableMulticastPeriodicHeartbeat

```
bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.EnableMulticastPeriodicHeartbeat [get]
```

Whether periodic heartbeat messages are sent over multicast

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_enable_↩ multicast_periodic_heartbeat

9.256.3.26 MulticastResendThreshold

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.MulticastResendThreshold [get]
```

The minimum number of requesting readers needed to trigger a multicast resend

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_multicast_resend_threshold

9.256.3.27 DisableRepairPiggybackHeartbeat

```
bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.DisableRepairPiggybackHeartbeat [get]
```

Prevents piggyback heartbeats from being sent with repair samples

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_repair_piggyback_heartbeat

9.256.3.28 Default

```
RtpsReliableWriterProtocol Rti.Dds.Core.Policy.RtpsReliableWriterProtocol.Default [static], [get]
```

Singleton containing the default value of a **RtpsReliableWriterProtocol** (p. 999)

9.257 Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder Class Reference

A modifiable type used to create an immutable **RtpsReliableWriterProtocol** (p. 999)

Public Member Functions

- **RtpsReliableWriterProtocolBuilder** (**RtpsReliableWriterProtocol** data)

  Creates a builder with the values of an existing immutable instance
- **RtpsReliableWriterProtocol Build** ()

  *Creates a new **RtpsReliableWriterProtocol** (p. 999) immutable object from this one.*

Properties

- int **LowWatermark** [get, set]

  *When the number of unacknowledged samples in the current send window of a reliable writer meets or falls below this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.*
- int **HighWatermark** [get, set]

  *When the number of unacknowledged samples in the current send window of a reliable writer meets or exceeds this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.*
- **Duration HeartbeatPeriod** [get, set]

  The period at which to send heartbeats.
- **Duration FastHeartbeatPeriod** [get, set]

  An alternative heartbeat period used when a reliable writer needs to flush its unacknowledged samples more quickly.
- **Duration LateJoinerHeartbeatPeriod** [get, set]

  An alternative heartbeat period used when a reliable reader joins late and needs to be caught up on cached samples of a reliable writer more quickly than the normal heartbeat rate.
- **Duration VirtualHeartbeatPeriod** [get, set]

  The period at which to send virtual heartbeats. Virtual heartbeats inform the reliable reader about the range of samples currently present, for each virtual GUID, in the reliable writer's queue.
- int **SamplesPerVirtualHeartbeat** [get, set]

  The number of samples that a reliable writer has to publish before sending a virtual heartbeat.
- int **MaxHeartbeatRetries** [get, set]

  The maximum number of periodic heartbeat retries before marking a remote reader as inactive.
- bool **InactivateNonprogressingReaders** [get, set]

  Whether to treat remote readers as inactive when their NACKs do not progress
- int **HeartbeatsPerMaxSamples** [get, set]

  The number of heartbeats per current send window.
- **Duration MinNackResponseDelay** [get, set]

  The minimum delay to respond to a NACK or NACK_FRAG.
- **Duration MaxNackResponseDelay** [get, set]

  The maximum delay to respond to a NACK or NACK_FRAG.
- **Duration NackSuppressionDuration** [get, set]

  The duration for ignoring consecutive NACKs/NACK_FRAGs that may trigger redundant repairs.
- int **MaxBytesPerNackResponse** [get, set]

  The maximum total message size when resending rejected samples or data fragments.
- **Duration DisablePositiveAcksMinSampleKeepDuration** [get, set]

  The minimum duration a sample is queued for ACK-disabled readers.
- **Duration DisablePositiveAcksMaxSampleKeepDuration** [get, set]

  The maximum duration a sample is queued for ACK-disabled readers.
- bool **DisablePositiveAcksEnableAdaptiveSampleKeepDuration** [get, set]

  Enables dynamic adjustment of sample keep duration in response to congestion.
- int **DisablePositiveAcksDecreaseSampleKeepDurationFactor** [get, set]

  Controls rate of contraction of dynamic sample keep duration.
- int **DisablePositiveAcksIncreaseSampleKeepDurationFactor** [get, set]

  Controls rate of growth of dynamic sample keep duration.
- int **MinSendWindowSize** [get, set]

  Minimum size of send window of unacknowledged samples
- int **MaxSendWindowSize** [get, set]

  Maximum size of send window of unacknowledged samples

- **Duration SendWindowUpdatePeriod** [get, set]

  Period in which send window may be dynamically changed
- int **SendWindowIncreaseFactor** [get, set]

  Increases send window size by this percentage when reacting dynamically to network conditions
- int **SendWindowDecreaseFactor** [get, set]

  Decreases send window size by this percentage when reacting dynamically to network conditions
- bool **EnableMulticastPeriodicHeartbeat** [get, set]

  Whether periodic heartbeat messages are sent over multicast
- int **MulticastResendThreshold** [get, set]

  The minimum number of requesting readers needed to trigger a multicast resend
- bool **DisableRepairPiggybackHeartbeat** [get, set]

  Prevents piggyback heartbeats from being sent with repair samples

9.257.1 Detailed Description

A modifiable type used to create an immutable **RtpsReliableWriterProtocol** (p. 999)

9.257.2 Constructor & Destructor Documentation

9.257.2.1 RtpsReliableWriterProtocolBuilder()

```
Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.RtpsReliableWriterProtocolBuilder (
            RtpsReliableWriterProtocol data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.257.3 Member Function Documentation

9.257.3.1 Build()

```
RtpsReliableWriterProtocol Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.Build ( )
```

Creates a new **RtpsReliableWriterProtocol** (p. 999) immutable object from this one.

9.257.4 Property Documentation

9.257.4.1 LowWatermark

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.LowWatermark [get], [set]
```

When the number of unacknowledged samples in the current send window of a reliable writer meets or falls below this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_low_↩ watermark

9.257.4.2 HighWatermark

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.HighWatermark [get], [set]
```

When the number of unacknowledged samples in the current send window of a reliable writer meets or exceeds this threshold, the **Status.ReliableWriterCacheChangedStatus** (p. 948) is considered to have changed.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_high_↩ watermark

9.257.4.3 HeartbeatPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.HeartbeatPeriod [get], [set]
```

The period at which to send heartbeats.

*The full documentation is available in the C API:*DDS_RtpsReliableWriterProtocol_t_heartbeat_↩ period

9.257.4.4 FastHeartbeatPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.FastHeartbeatPeriod [get], [set]
```

An alternative heartbeat period used when a reliable writer needs to flush its unacknowledged samples more quickly.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_fast_↩ heartbeat_period

9.257.4.5 LateJoinerHeartbeatPeriod

```
Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.LateJoinerHeartbeatPeriod [get],
[set]
```

An alternative heartbeat period used when a reliable reader joins late and needs to be caught up on cached samples of a reliable writer more quickly than the normal heartbeat rate.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_late_↩ joiner_heartbeat_period

9.257.4.6 VirtualHeartbeatPeriod

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.VirtualHeartbeatPeriod [get], [set]

The period at which to send virtual heartbeats. Virtual heartbeats inform the reliable reader about the range of samples currently present, for each virtual GUID, in the reliable writer's queue.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_virtual_heartbeat_period

9.257.4.7 SamplesPerVirtualHeartbeat

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.SamplesPerVirtualHeartbeat [get], [set]

The number of samples that a reliable writer has to publish before sending a virtual heartbeat.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_samples_per_virtual_heartbeat

9.257.4.8 MaxHeartbeatRetries

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.MaxHeartbeatRetries [get], [set]

The maximum number of *periodic* heartbeat retries before marking a remote reader as inactive.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_heartbeat_retries

9.257.4.9 InactivateNonprogressingReaders

bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.InactivateNonprogressingReaders [get], [set]

Whether to treat remote readers as inactive when their NACKs do not progress

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_inactivate_nonprogressing_readers

9.257.4.10 HeartbeatsPerMaxSamples

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.HeartbeatsPerMaxSamples [get], [set]

The number of heartbeats per current send window.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_heartbeats_per_max_samples

9.257.4.11 MinNackResponseDelay

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.MinNackResponseDelay [get], [set]

The minimum delay to respond to a NACK or NACK_FRAG.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_min_nack_↩response_delay

9.257.4.12 MaxNackResponseDelay

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.MaxNackResponseDelay [get], [set]

The maximum delay to respond to a NACK or NACK_FRAG.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_nack_↩response_delay

9.257.4.13 NackSuppressionDuration

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.NackSuppressionDuration [get], [set]

The duration for ignoring consecutive NACKs/NACK_FRAGs that may trigger redundant repairs.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_nack_↩suppression_duration

9.257.4.14 MaxBytesPerNackResponse

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.MaxBytesPerNackResponse [get], [set]

The maximum total message size when resending rejected samples or data fragments.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_bytes_↩per_nack_response

9.257.4.15 DisablePositiveAcksMinSampleKeepDuration

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.DisablePositiveAcksMinSampleKeep↩Duration [get], [set]

The minimum duration a sample is queued for ACK-disabled readers.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_↩positive_acks_min_sample_keep_duration

9.257.4.16 DisablePositiveAcksMaxSampleKeepDuration

Duration Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.DisablePositiveAcksMaxSampleKeep↩
Duration [get], [set]

The maximum duration a sample is queued for ACK-disabled readers.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_↩
positive_acks_max_sample_keep_duration

9.257.4.17 DisablePositiveAcksEnableAdaptiveSampleKeepDuration

bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.DisablePositiveAcksEnableAdaptive↩
SampleKeepDuration [get], [set]

Enables dynamic adjustment of sample keep duration in response to congestion.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_↩
positive_acks_enable_adaptive_sample_keep_duration

9.257.4.18 DisablePositiveAcksDecreaseSampleKeepDurationFactor

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.DisablePositiveAcksDecreaseSampleKeep↩
DurationFactor [get], [set]

Controls rate of contraction of dynamic sample keep duration.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_↩
positive_acks_decrease_sample_keep_duration_factor

9.257.4.19 DisablePositiveAcksIncreaseSampleKeepDurationFactor

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.DisablePositiveAcksIncreaseSampleKeep↩
DurationFactor [get], [set]

Controls rate of growth of dynamic sample keep duration.

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_↩
positive_acks_increase_sample_keep_duration_factor

9.257.4.20 MinSendWindowSize

int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.MinSendWindowSize [get], [set]

Minimum size of send window of unacknowledged samples

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_min_send_↩
window_size

9.257.4.21 MaxSendWindowSize

`int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.MaxSendWindowSize [get], [set]`

Maximum size of send window of unacknowledged samples

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_max_send_↩ window_size

9.257.4.22 SendWindowUpdatePeriod

Duration `Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.SendWindowUpdatePeriod [get], [set]`

Period in which send window may be dynamically changed

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_send_↩ window_update_period

9.257.4.23 SendWindowIncreaseFactor

`int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.SendWindowIncreaseFactor [get], [set]`

Increases send window size by this percentage when reacting dynamically to network conditions

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_send_↩ window_increase_factor

9.257.4.24 SendWindowDecreaseFactor

`int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.SendWindowDecreaseFactor [get], [set]`

Decreases send window size by this percentage when reacting dynamically to network conditions

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_send_↩ window_decrease_factor

9.257.4.25 EnableMulticastPeriodicHeartbeat

`bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.EnableMulticastPeriodicHeartbeat [get], [set]`

Whether periodic heartbeat messages are sent over multicast

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_enable_↩ multicast_periodic_heartbeat

9.257.4.26 MulticastResendThreshold

```
int Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.MulticastResendThreshold [get], [set]
```

The minimum number of requesting readers needed to trigger a multicast resend

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_multicast_resend_threshold

9.257.4.27 DisableRepairPiggybackHeartbeat

```
bool Rti.Dds.Core.Policy.RtpsReliableWriterProtocolBuilder.DisableRepairPiggybackHeartbeat [get], [set]
```

Prevents piggyback heartbeats from being sent with repair samples

The full documentation is available in the C API: DDS_RtpsReliableWriterProtocol_t_disable_repair_piggyback_heartbeat

9.258 Rti.Dds.Core.Policy.RtpsWellKnownPorts Class Reference

Configures the RTPS well-known ports mapping.

Inherits IEquatable< RtpsWellKnownPorts >.

Public Member Functions

- **RtpsWellKnownPorts With** (Action< **RtpsWellKnownPortsBuilder** > build)

  *Creates a new **RtpsWellKnownPorts** (p. 1015) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**RtpsWellKnownPorts** other)

  Compares for equality

Properties

- static **RtpsWellKnownPorts RtiBackwardsCompatible** [get]

  *Well-known port mappings which are compatible with previous versions of the RTI Data Distribution **Service** (p. 1049) middleware.*
- static **RtpsWellKnownPorts Interoperable** [get]

  Well-known port mappings which are compliant with the standard DDS Interoperability Wire Protocol.
- static **RtpsWellKnownPorts Default** [get]

  *Default **RtpsWellKnownPorts** (p. 1015), same as **Interoperable** (p. 1017).*
- int **PortBase** [get]

  The base port offset.
- int **DomainIdGain** [get]

  Tunable domain gain parameter.
- int **ParticipantIdGain** [get]

  Tunable participant gain parameter.
- int **BuiltinMulticastPortOffset** [get]

  *Additional offset for **metatraffic** multicast port.*
- int **BuiltinUnicastPortOffset** [get]

  *Additional offset for **metatraffic** unicast port.*
- int **UserMulticastPortOffset** [get]

  *Additional offset for **usertraffic** multicast port.*
- int **UserUnicastPortOffset** [get]

  *Additional offset for **usertraffic** unicast port.*

9.258.1 Detailed Description

Configures the RTPS well-known ports mapping.

9.258.2 Member Function Documentation

9.258.2.1 With()

```
RtpsWellKnownPorts Rti.Dds.Core.Policy.RtpsWellKnownPorts.With (
            Action< RtpsWellKnownPortsBuilder > build ) [inline]
```

Creates a new **RtpsWellKnownPorts** (p. 1015) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **RtpsWellKnownPorts** (p. 1015).

Returns

A new **RtpsWellKnownPorts** (p. 1015) with the changes applied by the Action

9.258.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.RtpsWellKnownPorts.GetHashCode ( )  [inline]
```

Gets the hash code

9.258.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.RtpsWellKnownPorts.Equals (
            object other )
```

Compares for equality

9.258.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.RtpsWellKnownPorts.Equals (
             RtpsWellKnownPorts other )  [inline]
```

Compares for equality

9.258.3 Property Documentation

9.258.3.1 RtiBackwardsCompatible

RtpsWellKnownPorts Rti.Dds.Core.Policy.RtpsWellKnownPorts.RtiBackwardsCompatible [static], [get]

Well-known port mappings which are compatible with previous versions of the RTI Data Distribution **Service** (p. 1049) middleware.

The full documentation is available in the C API: DDSRtpsWellKnownPorts_tRTI_BACKWARDS_↩ COMPATIBLE_RTPS_WELL_KNOWN_PORTS

9.258.3.2 Interoperable

RtpsWellKnownPorts Rti.Dds.Core.Policy.RtpsWellKnownPorts.Interoperable [static], [get]

Initial value:

```
= new RtpsWellKnownPorts(
                portBase : 7400,
                domainIdGain : 10,
                participantIdGain : 1000,
                builtinMulticastPortOffset : 2,
                builtinUnicastPortOffset : 0,
                userMulticastPortOffset : 1,
                userUnicastPortOffset : 3)
```

Well-known port mappings which are compliant with the standard DDS Interoperability Wire Protocol.

The full documentation is available in the C API: DDSRtpsWellKnownPorts_tINTEROPERABLE_RTPS_↩ WELL_KNOWN_PORTS

9.258.3.3 Default

RtpsWellKnownPorts Rti.Dds.Core.Policy.RtpsWellKnownPorts.Default [static], [get]

Default **RtpsWellKnownPorts** (p. 1015), same as **Interoperable** (p. 1017).

9.258.3.4 PortBase

int Rti.Dds.Core.Policy.RtpsWellKnownPorts.PortBase [get]

The base port offset.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_port_base

9.258.3.5 DomainIdGain

int Rti.Dds.Core.Policy.RtpsWellKnownPorts.DomainIdGain [get]

Tunable domain gain parameter.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_domain_id_gain

9.258.3.6 ParticipantIdGain

int Rti.Dds.Core.Policy.RtpsWellKnownPorts.ParticipantIdGain [get]

Tunable participant gain parameter.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_participant_id_gain

9.258.3.7 BuiltinMulticastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPorts.BuiltinMulticastPortOffset [get]
```

Additional offset for **metatraffic** multicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_builtin_multicast_port_offset

9.258.3.8 BuiltinUnicastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPorts.BuiltinUnicastPortOffset [get]
```

Additional offset for **metatraffic** unicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_builtin_unicast_port_offset

9.258.3.9 UserMulticastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPorts.UserMulticastPortOffset [get]
```

Additional offset for **usertraffic** multicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_user_multicast_port_offset

9.258.3.10 UserUnicastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPorts.UserUnicastPortOffset [get]
```

Additional offset for **usertraffic** unicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_user_unicast_port_offset

9.259 Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder Class Reference

A modifiable type used to create an immutable **RtpsWellKnownPorts** (p. 1015)

Public Member Functions

- **RtpsWellKnownPortsBuilder** (**RtpsWellKnownPorts** data)

  Creates a builder with the values of an existing immutable instance
- **RtpsWellKnownPorts Build** ()

  *Creates a new **RtpsWellKnownPorts** (p. 1015) immutable object from this one.*

Properties

- int **PortBase** [get, set]
  The base port offset.
- int **DomainIdGain** [get, set]
  Tunable domain gain parameter.
- int **ParticipantIdGain** [get, set]
  Tunable participant gain parameter.
- int **BuiltinMulticastPortOffset** [get, set]
  *Additional offset for **metatraffic** multicast port.*
- int **BuiltinUnicastPortOffset** [get, set]
  *Additional offset for **metatraffic** unicast port.*
- int **UserMulticastPortOffset** [get, set]
  *Additional offset for **usertraffic** multicast port.*
- int **UserUnicastPortOffset** [get, set]
  *Additional offset for **usertraffic** unicast port.*

9.259.1 Detailed Description

A modifiable type used to create an immutable **RtpsWellKnownPorts** (p. 1015)

9.259.2 Constructor & Destructor Documentation

9.259.2.1 RtpsWellKnownPortsBuilder()

```
Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.RtpsWellKnownPortsBuilder (
            RtpsWellKnownPorts data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.259.3 Member Function Documentation

9.259.3.1 Build()

```
RtpsWellKnownPorts Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.Build ( )
```

Creates a new **RtpsWellKnownPorts** (p. 1015) immutable object from this one.

9.259.4 Property Documentation

9.259.4.1 PortBase

```
int Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.PortBase [get], [set]
```

The base port offset.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_port_base

9.259.4.2 DomainIdGain

```
int Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.DomainIdGain [get], [set]
```

Tunable domain gain parameter.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_domain_id_gain

9.259.4.3 ParticipantIdGain

```
int Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.ParticipantIdGain [get], [set]
```

Tunable participant gain parameter.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_participant_id_gain

9.259.4.4 BuiltinMulticastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.BuiltinMulticastPortOffset [get], [set]
```

Additional offset for **metatraffic** multicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_builtin_multicast_↩ port_offset

9.259.4.5 BuiltinUnicastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.BuiltinUnicastPortOffset [get], [set]
```

Additional offset for **metatraffic** unicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_builtin_unicast_↩ port_offset

9.259.4.6 UserMulticastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.UserMulticastPortOffset  [get], [set]
```

Additional offset for **usertraffic** multicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_user_multicast_port_offset

9.259.4.7 UserUnicastPortOffset

```
int Rti.Dds.Core.Policy.RtpsWellKnownPortsBuilder.UserUnicastPortOffset  [get], [set]
```

Additional offset for **usertraffic** unicast port.

The full documentation is available in the C API: DDS_RtpsWellKnownPorts_t_user_unicast_port_offset

9.260 Rti.RequestReply.SampleFlags Class Reference

A set of flags that can be associated with a sample.

Static Public Attributes

- const int **IntermediateReplySequence** = 1 << 1

  Indicates that a response sample is not the last response sample for a given request. This bit is usually set by Connext Repliers sending multiple responses for a request.

9.260.1 Detailed Description

A set of flags that can be associated with a sample.

9.260.2 Field Documentation

9.260.2.1 IntermediateReplySequence

```
const int Rti.RequestReply.SampleFlags.IntermediateReplySequence = 1 << 1  [static]
```

Indicates that a response sample is not the last response sample for a given request. This bit is usually set by Connext Repliers sending multiple responses for a request.

9.261 Rti.Dds.Core.SampleIdentity Struct Reference

Uniquely identifies a data sample within a DDS domain and a Topic.

Inherits IEquatable< SampleIdentity >, and IComparable< SampleIdentity >.

Public Member Functions

- **SampleIdentity** (in **Guid** writerGuid, long sequenceNumber)

  *Creates a **SampleIdentity** (p. 1023) with its two components*
- int **CompareTo** (**SampleIdentity** other)

  Compares two objects.
- bool **Equals** (**SampleIdentity** other)

  Compares two objects.
- override bool **Equals** (object obj)

  Compares two objects.
- override int **GetHashCode** ()

  Gets the hash code.
- override string **ToString** ()

  Converts to a readable string.

Properties

- **Guid WriterGuid** [get]

  Identifies the data source.
- long **SequenceNumber** [get]

  The monotonically increasing 64-bit sequence number that identifies the sample in the data source.
- static **SampleIdentity Unknown** [get]

  Special value that indicates that the identity is unknown.
- static **SampleIdentity Auto** [get]

  *Special value to indicate that a writer will automatically assign the identity of the sample in **Publication.DataWriter**<↩ **T**>**.Write(T, Publication.WriteParams)** (p. 338)*

9.261.1 Detailed Description

Uniquely identifies a data sample within a DDS domain and a Topic.

9.261.2 Constructor & Destructor Documentation

9.261.2.1 SampleIdentity()

```
Rti.Dds.Core.SampleIdentity.SampleIdentity (
            in  Guid writerGuid,
            long sequenceNumber )  [inline]
```

Creates a **SampleIdentity** (p. 1023) with its two components

9.261.3 Member Function Documentation

9.261.3.1 CompareTo()

```
int Rti.Dds.Core.SampleIdentity.CompareTo (
             SampleIdentity other )
```

Compares two objects.

9.261.3.2 Equals() [1/2]

```
bool Rti.Dds.Core.SampleIdentity.Equals (
             SampleIdentity other )
```

Compares two objects.

9.261.3.3 Equals() [2/2]

```
override bool Rti.Dds.Core.SampleIdentity.Equals (
            object obj )
```

Compares two objects.

9.261.3.4 GetHashCode()

```
override int Rti.Dds.Core.SampleIdentity.GetHashCode ( )
```

Gets the hash code.

9.261.3.5 ToString()

```
override string Rti.Dds.Core.SampleIdentity.ToString ( )
```

Converts to a readable string.

9.261.4 Property Documentation

9.261.4.1 WriterGuid

```
Guid Rti.Dds.Core.SampleIdentity.WriterGuid  [get]
```

Identifies the data source.

9.261.4.2 SequenceNumber

```
long Rti.Dds.Core.SampleIdentity.SequenceNumber  [get]
```

The monotonically increasing 64-bit sequence number that identifies the sample in the data source.

9.261.4.3 Unknown

```
SampleIdentity Rti.Dds.Core.SampleIdentity.Unknown  [static], [get]
```

Initial value:

```
=
            new SampleIdentity(Guid.Unknown, Core.SequenceNumber.Unknown)
```

Special value that indicates that the identity is unknown.

9.261.4.4 Auto

```
SampleIdentity Rti.Dds.Core.SampleIdentity.Auto  [static], [get]
```

Initial value:

```
=
            new SampleIdentity(Guid.Auto, Core.SequenceNumber.Auto)
```

Special value to indicate that a writer will automatically assign the identity of the sample in **Publication.DataWriter<↩ T>.Write(T, Publication.WriteParams)** (p. 338)

9.262 Rti.Dds.Subscription.SampleInfo Class Reference

Information that accompanies each sample received by a **DataReader** (p. 243)

Properties

- bool **ValidData** [get]

  Indicates whether the sample contains data or else it is only used to communicate a change in the instance state (this.↩ State.InstanceState)
- **DataState State** [get]

  Contains the sample, view and instance states
- **GenerationCount GenerationCount** [get]

  *Keeps track of changes in the InstanceState (**State** (p. 1027)) for a given instance.*
- **Rank Rank** [get]

  Keeps track of the number of samples related to the same instance
- **InstanceHandle InstanceHandle** [get]

  Identifies locally the corresponding instance.
- **InstanceHandle PublicationHandle** [get]

  Identifies locally the DataWriter that modified the instance.
- **Time SourceTimestamp** [get]

  The timestamp when the sample was written by a DataWriter.
- **Time ReceptionTimestamp** [get]

  *The timestamp when the sample was received and added to the **DataReader** (p. 243)'s queue.*
- long **PublicationSequenceNumber** [get]

  The publication sequence number.
- long **ReceptionSequenceNumber** [get]

  *The reception sequence number when sample was committed by a **DataReader** (p. 243)*
- **SampleIdentity PublicationVirtualSampleIdentity** [get]

  The original publication virtual sample identity.
- **SampleIdentity OriginalPublicationVirtualSampleIdentity** [get]

  The original publication virtual identity.
- **SampleIdentity RelatedOriginalPublicationVirtualSampleIdentity** [get]

  The original publication virtual identity of a related sample.
- int **Flag** [get]

  Flags associated with the sample.
- **Guid SourceGuid** [get]

  The application logical data source associated with the sample.
- **Guid RelatedSourceGuid** [get]

  The application logical data source that is related to the sample.
- **Guid RelatedSubscriptionGuid** [get]

  The related_reader_guid associated with the sample.
- **Guid TopicQueryGuid** [get]

  *The Guid of the **TopicQuery** (p. 1174) that is related to the sample.*
- **CoherentSetInfo CoherentSetInfo** [get]

  If this sample belongs to a coherent set, this property contains information about the coherent set.

9.262.1 Detailed Description

Information that accompanies each sample received by a **DataReader** (p. 243)

The full documentation is available in the C API: DDS_SampleInfo

9.262.2 Property Documentation

9.262.2.1 ValidData

```
bool Rti.Dds.Subscription.SampleInfo.ValidData [get]
```

Indicates whether the sample contains data or else it is only used to communicate a change in the instance state (this.State.InstanceState)

The full documentation is available in the C API: DDS_SampleInfo_valid_data

9.262.2.2 State

```
DataState Rti.Dds.Subscription.SampleInfo.State [get]
```

Contains the sample, view and instance states

9.262.2.3 GenerationCount

```
GenerationCount Rti.Dds.Subscription.SampleInfo.GenerationCount [get]
```

Keeps track of changes in the InstanceState (**State** (p. 1027)) for a given instance.

The full documentation is available in the C API: DDS_SampleInfo_disposed_generation_count

9.262.2.4 Rank

```
Rank Rti.Dds.Subscription.SampleInfo.Rank [get]
```

Keeps track of the number of samples related to the same instance

that follow in a LoanedSamples<T> collection.

The full documentation is available in the C API: DDS_SampleInfo_sample_rank

9.262.2.5 InstanceHandle

InstanceHandle Rti.Dds.Subscription.SampleInfo.InstanceHandle [get]

Identifies locally the corresponding instance.

The full documentation is available in the C API: DDS_SampleInfo_instance_handle

9.262.2.6 PublicationHandle

InstanceHandle Rti.Dds.Subscription.SampleInfo.PublicationHandle [get]

Identifies locally the DataWriter that modified the instance.

The full documentation is available in the C API: DDS_SampleInfo_publication_handle

9.262.2.7 SourceTimestamp

Time Rti.Dds.Subscription.SampleInfo.SourceTimestamp [get]

The timestamp when the sample was written by a DataWriter.

The full documentation is available in the C API: DDS_SampleInfo_source_timestamp

9.262.2.8 ReceptionTimestamp

Time Rti.Dds.Subscription.SampleInfo.ReceptionTimestamp [get]

The timestamp when the sample was received and added to the **DataReader** (p. 243)'s queue.

The full documentation is available in the C API: DDS_SampleInfo_reception_timestamp

9.262.2.9 PublicationSequenceNumber

long Rti.Dds.Subscription.SampleInfo.PublicationSequenceNumber [get]

The publication sequence number.

The full documentation is available in the C API: DDS_SampleInfo_publication_sequence_number

9.262.2.10 ReceptionSequenceNumber

long Rti.Dds.Subscription.SampleInfo.ReceptionSequenceNumber [get]

The reception sequence number when sample was committed by a **DataReader** (p. 243)

The full documentation is available in the C API: DDS_SampleInfo_reception_sequence_number

9.262.2.11 PublicationVirtualSampleIdentity

SampleIdentity Rti.Dds.Subscription.SampleInfo.PublicationVirtualSampleIdentity [get]

The original publication virtual sample identity.

The full documentation is available in the C API: DDS_SampleInfo_original_publication_virtual_guid

9.262.2.12 OriginalPublicationVirtualSampleIdentity

SampleIdentity Rti.Dds.Subscription.SampleInfo.OriginalPublicationVirtualSampleIdentity [get]

The original publication virtual identity.

The full documentation is available in the C API: DDS_SampleInfo_original_publication_virtual_guid

9.262.2.13 RelatedOriginalPublicationVirtualSampleIdentity

SampleIdentity Rti.Dds.Subscription.SampleInfo.RelatedOriginalPublicationVirtualSampleIdentity [get]

The original publication virtual identity of a related sample.

The full documentation is available in the C API: DDS_SampleInfo_related_original_publication_virtual_guid

9.262.2.14 Flag

int Rti.Dds.Subscription.SampleInfo.Flag [get]

Flags associated with the sample.

The full documentation is available in the C API: DDS_SampleInfo_flag

9.262.2.15 SourceGuid

Guid Rti.Dds.Subscription.SampleInfo.SourceGuid [get]

The application logical data source associated with the sample.

The full documentation is available in the C API: DDS_SampleInfo_source_guid

9.262.2.16 RelatedSourceGuid

```
Guid Rti.Dds.Subscription.SampleInfo.RelatedSourceGuid [get]
```

The application logical data source that is related to the sample.

The full documentation is available in the C API: DDS_SampleInfo_related_source_guid

9.262.2.17 RelatedSubscriptionGuid

```
Guid Rti.Dds.Subscription.SampleInfo.RelatedSubscriptionGuid [get]
```

The related_reader_guid associated with the sample.

The full documentation is available in the C API: DDS_SampleInfo_related_subscription_guid

9.262.2.18 TopicQueryGuid

```
Guid Rti.Dds.Subscription.SampleInfo.TopicQueryGuid [get]
```

The Guid of the **TopicQuery** (p. 1174) that is related to the sample.

The full documentation is available in the C API: DDS_SampleInfo_topic_query_guid

9.262.2.19 CoherentSetInfo

```
CoherentSetInfo Rti.Dds.Subscription.SampleInfo.CoherentSetInfo [get]
```

If this sample belongs to a coherent set, this property contains information about the coherent set.

A nonnull object if this sample belongs to a coherent or null if it doesn't.

9.263 Rti.Dds.Core.Status.SampleLostStatus Class Reference

Indicates that one or more samples written by a matched Publication.DataWriter<T> have failed to be received by the Subscription.DataReader<T>.

Inherits IEquatable< SampleLostStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code.
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**SampleLostStatus** other)

  Compares for equality.
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** `[get]`

  Cumulative count of all the samples that have been lost across all instances of data written for the Topics.Topic<T>.
- **SampleLostStatusKind LastReason** `[get]`

  The reason the last sample was lost.

9.263.1 Detailed Description

Indicates that one or more samples written by a matched Publication.DataWriter<T> have failed to be received by the Subscription.DataReader<T>.

The full documentation is available in the C API:`DDS_SampleLostStatus`

9.263.2 Member Function Documentation

9.263.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.SampleLostStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.263.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.SampleLostStatus.Equals (
            object other )
```

Compares for equality.

9.263.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.SampleLostStatus.Equals (
            SampleLostStatus other )  [inline]
```

Compares for equality.

9.263.2.4 ToString()

```
override string Rti.Dds.Core.Status.SampleLostStatus.ToString ( )
```

Returns a readable summary of the status

9.263.3 Property Documentation

9.263.3.1 TotalCount

```
EventCount<int> Rti.Dds.Core.Status.SampleLostStatus.TotalCount  [get]
```

Cumulative count of all the samples that have been lost across all instances of data written for the Topics.Topic<T>.

The full documentation is available in the C API: DDS_SampleLostStatus_total_count

9.263.3.2 LastReason

```
SampleLostStatusKind Rti.Dds.Core.Status.SampleLostStatus.LastReason  [get]
```

The reason the last sample was lost.

The full documentation is available in the C API: DDS_SampleLostStatus_last_reason

9.264 Rti.Dds.Subscription.SampleProcessor Class Reference

A **SampleProcessor** (p. 1032) automatically takes the data from the attached readers and provides each data sample to a user-defined handler function. The **SampleProcessor** (p. 1032) uses a configurable thread pool to wait for the data and call the handlers.

Inherits IDisposable.

Public Member Functions

- **SampleProcessor** ()

  *Creates a new **SampleProcessor** (p. 1032) with default configuration.*
- **SampleProcessor** (**AsyncWaitSetProperty** property)

  *Creates a new **SampleProcessor** (p. 1032) with the specified configuration.*
- void **AttachDataReader**< **T** > (**DataReader**< T > reader, Action< **LoanedSample**< T > > handler)

  Adds a handler to be called for each data sample received by a DataReader<T> .
- void **DetachDataReader** (**AnyDataReader** reader)

  *Detaches a reader. The **SampleProcessor** (p. 1032) stops taking data from this reader.*
- void **Dispose** ()

  Releases the native resources used by this object. A finalizer is also provided, so it is not necessary to call Dispose.

9.264.1 Detailed Description

A **SampleProcessor** (p. 1032) automatically takes the data from the attached readers and provides each data sample to a user-defined handler function. The **SampleProcessor** (p. 1032) uses a configurable thread pool to wait for the data and call the handlers.

Readers cannot be disposed while they're attached to a **SampleProcessor** (p. 1032).

9.264.2 Constructor & Destructor Documentation

9.264.2.1 SampleProcessor() [1/2]

```
Rti.Dds.Subscription.SampleProcessor.SampleProcessor ( )  [inline]
```

Creates a new **SampleProcessor** (p. 1032) with default configuration.

9.264.2.2 SampleProcessor() [2/2]

```
Rti.Dds.Subscription.SampleProcessor.SampleProcessor (
            AsyncWaitSetProperty property )
```

Creates a new **SampleProcessor** (p. 1032) with the specified configuration.

9.264.3 Member Function Documentation

9.264.3.1 AttachDataReader< T >()

```
void Rti.Dds.Subscription.SampleProcessor.AttachDataReader< T > (
            DataReader< T > reader,
           Action< LoanedSample< T > > handler )
```

Adds a handler to be called for each data sample received by a DataReader<T> .

Parameters

reader	The reader to read from. Important: the reader must not be Disposed while attached.
handler	A function that receives a LoanedSample<T>. Important: the sample is only valid inside the handler. It cannot be used after the handler returns.

Template Parameters

T	The reader's topic-type

9.264.3.2 DetachDataReader()

```
void Rti.Dds.Subscription.SampleProcessor.DetachDataReader (
            AnyDataReader reader )
```

Detaches a reader. The **SampleProcessor** (p. 1032) stops taking data from this reader.

Parameters

reader	The reader to detach.

9.264.3.3 Dispose()

```
void Rti.Dds.Subscription.SampleProcessor.Dispose ( )
```

Releases the native resources used by this object. A finalizer is also provided, so it is not necessary to call Dispose.

9.265 Rti.Dds.Core.Status.SampleRejectedStatus Class Reference

Indicates that one or more samples received from a matched Publication.DataWriter<T> have been rejected by the Subscription.DataReader<T> because a resource limit would have been exceeded.

Inherits IEquatable< SampleRejectedStatus >.

Public Member Functions

- override int **GetHashCode** ()

  Gets the hash code.
- override bool **Equals** (object other)

  Compares for equality.
- bool **Equals** (**SampleRejectedStatus** other)

  Compares for equality.
- override string **ToString** ()

  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** `[get]`

  Total cumulative count of samples rejected by the Subscription.DataReader<T>.
- **SampleRejectedStatusKind LastReason** `[get]`

  Reason for rejecting the last sample.
- **InstanceHandle LastInstanceHandle** `[get]`

  InstanceHandle *(p. 661) to the data-instance for which the last sample was rejected.*

9.265.1 Detailed Description

Indicates that one or more samples received from a matched Publication.DataWriter<T> have been rejected by the Subscription.DataReader<T> because a resource limit would have been exceeded.

The full documentation is available in the C API: `DDS_SampleRejectedStatus`

9.265.2 Member Function Documentation

9.265.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.SampleRejectedStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.265.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.SampleRejectedStatus.Equals (
            object other )
```

Compares for equality.

9.265.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.SampleRejectedStatus.Equals (
            SampleRejectedStatus other )  [inline]
```

Compares for equality.

9.265.2.4 ToString()

```
override string Rti.Dds.Core.Status.SampleRejectedStatus.ToString ( )
```

Returns a readable summary of the status

9.265.3 Property Documentation

9.265.3.1 TotalCount

```
EventCount<int> Rti.Dds.Core.Status.SampleRejectedStatus.TotalCount  [get]
```

Total cumulative count of samples rejected by the Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_SampleRejectedStatus_total_count

9.265.3.2 LastReason

```
SampleRejectedStatusKind Rti.Dds.Core.Status.SampleRejectedStatus.LastReason  [get]
```

Reason for rejecting the last sample.

The full documentation is available in the C API: DDS_SampleRejectedStatus_last_reason

9.265.3.3 LastInstanceHandle

```
InstanceHandle Rti.Dds.Core.Status.SampleRejectedStatus.LastInstanceHandle  [get]
```

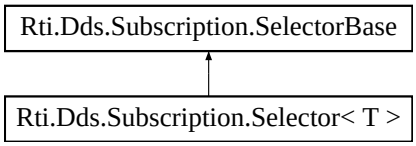
InstanceHandle (p. 661) to the data-instance for which the last sample was rejected.

The full documentation is available in the C API: DDS_SampleRejectedStatus_last_instance_↩ handle

9.266 Rti.Dds.Subscription.Selector< T > Class Template Reference

Allows composing read and take operations. Selectors are returned by **DataReader<T>.Select** (p. 245)

Inheritance diagram for Rti.Dds.Subscription.Selector< T >:



Public Member Functions

- **Selector**< T > **WithState** (**DataState** state)
  Select a specific DataState
- **Selector**< T > **WithMaxSamples** (int maxSamples)
  Choose to only read/take up to a maximum number of samples
- **Selector**< T > **WithInstance** (in **InstanceHandle** instanceHandle)
  Select a specific instance
- **Selector**< T > **WithNextInstance** (in **InstanceHandle** instanceHandle)
  Select the instance after a specific instance
- **Selector**< T > **WithCondition** (**ReadCondition** condition)
  *Select based on the state or content filter of a **ReadCondition** (p. 928) or a **QueryCondition** (p. 925)*
- **LoanedSamples**< T > **Take** ()
  Access (and remove) the samples selected by this selector
- **LoanedSamples**< T > **Read** ()
  Access (without removing) the samples selected by this selector

Properties

- **DataReader**< T > **RelatedReader** `[get]`
  The reader that created this selector

9.266.1 Detailed Description

Allows composing read and take operations. Selectors are returned by **DataReader<T>.Select** (p. 245)

Template Parameters

T	The topic-type of the associated reader

9.266.2 Member Function Documentation

9.266.2.1 WithState()

```
Selector< T > Rti.Dds.Subscription.Selector< T >.WithState (
            DataState state ) [inline]
```

Select a specific DataState

Returns

This **Selector** (p. 1037)

9.266.2.2 WithMaxSamples()

```
Selector< T > Rti.Dds.Subscription.Selector< T >.WithMaxSamples (
            int maxSamples ) [inline]
```

Choose to only read/take up to a maximum number of samples

Returns

This **Selector** (p. 1037)

9.266.2.3 WithInstance()

```
Selector< T > Rti.Dds.Subscription.Selector< T >.WithInstance (
            in InstanceHandle instanceHandle ) [inline]
```

Select a specific instance

Returns

This **Selector** (p. 1037)

9.266.2.4 WithNextInstance()

```
Selector< T >  Rti.Dds.Subscription.Selector< T >.WithNextInstance (
            in  InstanceHandle instanceHandle )  [inline]
```

Select the instance after a specific instance

Returns

This **Selector** (p. 1037)

9.266.2.5 WithCondition()

```
Selector< T >  Rti.Dds.Subscription.Selector< T >.WithCondition (
             ReadCondition condition )  [inline]
```

Select based on the state or content filter of a **ReadCondition** (p. 928) or a **QueryCondition** (p. 925)

Returns

This **Selector** (p. 1037)

9.266.2.6 Take()

```
LoanedSamples< T >  Rti.Dds.Subscription.Selector< T >.Take ( )
```

Access (and remove) the samples selected by this selector

9.266.2.7 Read()

```
LoanedSamples< T >  Rti.Dds.Subscription.Selector< T >.Read ( )
```

Access (without removing) the samples selected by this selector

9.266.3 Property Documentation

9.266.3.1 RelatedReader

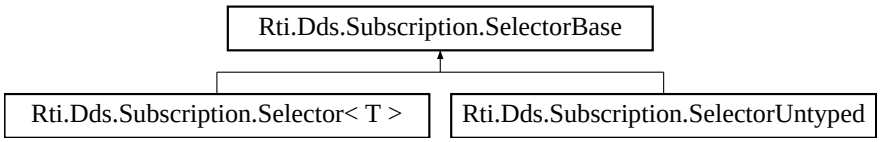
`DataReader<T> Rti.Dds.Subscription.Selector< T >.RelatedReader [get]`

The reader that created this selector

9.267 Rti.Dds.Subscription.SelectorBase Class Reference

Base class for the Selector<T> and **SelectorUntyped** (p. 1041) classes.

Inheritance diagram for Rti.Dds.Subscription.SelectorBase:



Properties

- **DataState State** = DataState.Any `[get, set]`
  Get or set the data state
- int **MaxSamples** = LengthUnlimited.Value `[get, set]`
  Get or set the maximum samples
- **InstanceHandle Instance** `[get, set]`
  Get or set the instance handle
- **InstanceHandle NextInstance** `[get, set]`
  Get or set the next instance
- **ReadCondition Condition** `[get, set]`
  Get or set the condition

9.267.1 Detailed Description

Base class for the Selector<T> and **SelectorUntyped** (p. 1041) classes.

This class contains all of the methods shared between Selector<T> and **SelectorUntyped** (p. 1041).

9.267.2 Property Documentation

9.267.2.1 State

```
DataState Rti.Dds.Subscription.SelectorBase.State = DataState.Any  [get], [set]
```

Get or set the data state

9.267.2.2 MaxSamples

```
int Rti.Dds.Subscription.SelectorBase.MaxSamples = LengthUnlimited.Value  [get], [set]
```

Get or set the maximum samples

9.267.2.3 Instance

```
InstanceHandle Rti.Dds.Subscription.SelectorBase.Instance  [get], [set]
```

Get or set the instance handle

9.267.2.4 NextInstance

```
InstanceHandle Rti.Dds.Subscription.SelectorBase.NextInstance  [get], [set]
```

Get or set the next instance

9.267.2.5 Condition

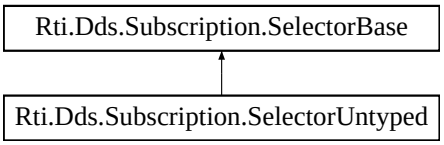
```
ReadCondition Rti.Dds.Subscription.SelectorBase.Condition  [get], [set]
```

Get or set the condition

9.268 Rti.Dds.Subscription.SelectorUntyped Class Reference

Allows composing read and take operations. Selectors are returned by **AnyDataReader.SelectUntyped** (p. 156)

Inheritance diagram for Rti.Dds.Subscription.SelectorUntyped:



Public Member Functions

- **LoanedSamples**< object > **Take** ()

  Access (and remove) the samples selected by this selector
- **LoanedSamples**< object > **Read** ()

  Access (without removing) the samples selected by this selector
- **SelectorUntyped WithState** (**DataState** state)

  Select a specific DataState
- **SelectorUntyped WithMaxSamples** (int maxSamples)

  Choose to only read/take up to a maximum number of samples
- **SelectorUntyped WithInstance** (in **InstanceHandle** instanceHandle)

  Select a specific instance
- **SelectorUntyped WithNextInstance** (in **InstanceHandle** instanceHandle)

  Select the instance after a specific instance
- **SelectorUntyped WithCondition** (**ReadCondition** condition)

  *Select based on the state or content filter of a **ReadCondition** (p. 928) or a **QueryCondition** (p. 925)*

Properties

- **AnyDataReader RelatedReader** `[get]`

  The reader that created this selector

9.268.1 Detailed Description

Allows composing read and take operations. Selectors are returned by **AnyDataReader.SelectUntyped** (p. 156)

9.268.2 Member Function Documentation

9.268.2.1 Take()

```
LoanedSamples< object > Rti.Dds.Subscription.SelectorUntyped.Take ( )
```

Access (and remove) the samples selected by this selector

9.268.2.2 Read()

```
LoanedSamples< object > Rti.Dds.Subscription.SelectorUntyped.Read ( )
```

Access (without removing) the samples selected by this selector

9.268.2.3 WithState()

```
SelectorUntyped Rti.Dds.Subscription.SelectorUntyped.WithState (
            DataState state )  [inline]
```

Select a specific DataState

Returns

This **Selector** (p. 1037)

9.268.2.4 WithMaxSamples()

```
SelectorUntyped Rti.Dds.Subscription.SelectorUntyped.WithMaxSamples (
            int maxSamples )  [inline]
```

Choose to only read/take up to a maximum number of samples

Returns

This **Selector** (p. 1037)

9.268.2.5 WithInstance()

```
SelectorUntyped Rti.Dds.Subscription.SelectorUntyped.WithInstance (
            in  InstanceHandle instanceHandle )  [inline]
```

Select a specific instance

Returns

This **Selector** (p. 1037)

9.268.2.6 WithNextInstance()

```
SelectorUntyped Rti.Dds.Subscription.SelectorUntyped.WithNextInstance (
            in  InstanceHandle instanceHandle )  [inline]
```

Select the instance after a specific instance

Returns

This **Selector** (p. 1037)

9.268.2.7 WithCondition()

```
SelectorUntyped Rti.Dds.Subscription.SelectorUntyped.WithCondition (
            ReadCondition condition ) [inline]
```

Select based on the state or content filter of a **ReadCondition** (p. 928) or a **QueryCondition** (p. 925)

Returns

This **Selector** (p. 1037)

9.268.3 Property Documentation

9.268.3.1 RelatedReader

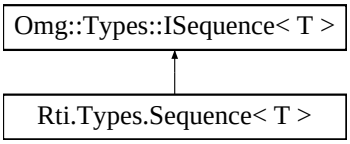
```
AnyDataReader Rti.Dds.Subscription.SelectorUntyped.RelatedReader [get]
```

The reader that created this selector

9.269 Rti.Types.Sequence< T > Class Template Reference

IDL sequences map to this type.

Inheritance diagram for Rti.Types.Sequence< T >:



9.269.1 Detailed Description

IDL sequences map to this type.

This class provides the same methods and properties as `System.Collections.Generic.List` (`https://docs.microsoft.com/en-us/dotnet/api/system.collections.generic.list-1?view=netcore-3.1`).

9.270 Rti.Dds.Core.SequenceNumber Class Reference

Contains constants for particular sequence numbers

Static Public Attributes

- const long **Unknown** = -1

  Unknown sequence number.
- const long **Auto** = **Unknown**

  The sequence number is internally determined by Connext.
- const long **Maximum** = long.MaxValue

  Represents the highest, most positive value for the sequence number.

9.270.1 Detailed Description

Contains constants for particular sequence numbers

9.270.2 Field Documentation

9.270.2.1 Unknown

```
const long Rti.Dds.Core.SequenceNumber.Unknown = -1  [static]
```

Unknown sequence number.

The full documentation is available in the C API: DDS_SequenceNumber_t_UNKNOWN

9.270.2.2 Auto

```
const long Rti.Dds.Core.SequenceNumber.Auto = Unknown  [static]
```

The sequence number is internally determined by Connext.

The full documentation is available in the C API: AUTOSEQUENCE_NUMBER

9.270.2.3 Maximum

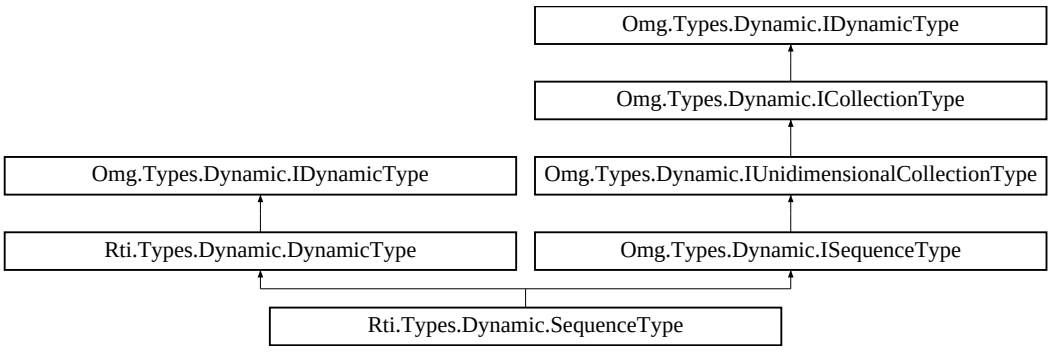
```
const long Rti.Dds.Core.SequenceNumber.Maximum = long.MaxValue  [static]
```

Represents the highest, most positive value for the sequence number.

9.271 Rti.Types.Dynamic.SequenceType Class Reference

Represents an IDL sequence.

Inheritance diagram for Rti.Types.Dynamic.SequenceType:



Static Public Attributes

- const int **Unbounded** = int.MaxValue

  *Special value for **Bounds** (p. 1047) that indicates that the sequence is unbounded.*

Properties

- uint **Bounds** `[get]`

  *The maximum number of elements, or **Unbounded** (p. 1046)*
- **IDynamicType ContentType** `[get]`

  The type of the sequence elements.

Additional Inherited Members

9.271.1 Detailed Description

Represents an IDL sequence.

9.271.2 Field Documentation

9.271.2.1 Unbounded

```
const int Rti.Types.Dynamic.SequenceType.Unbounded = int.MaxValue  [static]
```

Special value for **Bounds** (p. 1047) that indicates that the sequence is unbounded.

9.271.3 Property Documentation

9.271.3.1 Bounds

```
uint Rti.Types.Dynamic.SequenceType.Bounds  [get]
```

The maximum number of elements, or **Unbounded** (p. 1046)

Implements **Omg.Types.Dynamic.IUnidimensionalCollectionType** (p. 684).

9.271.3.2 ContentType

```
IDynamicType Rti.Types.Dynamic.SequenceType.ContentType  [get]
```

The type of the sequence elements.

Implements **Omg.Types.Dynamic.ICollectionType** (p. 652).

9.272 Rti.Dds.Topics.SerializerExtensions Class Reference

Provides additional operations for ISerializer<T>

Static Public Member Functions

- static Span< byte > **Serialize**< **T** > (this **ISerializer**< T > self, T sample, Span< byte > buffer)
  Serializes a data sample into a byte span
- static T **Deserialize**< **T** > (this **ISerializer**< T > self, Span< byte > buffer)
  Deserializes a data sample from a byte span

9.272.1 Detailed Description

Provides additional operations for ISerializer<T>

Note

These methods require the package `Rti.ConnextDds.Extra`. This package requires .NET Standard 2.1 (while `Rti.ConnextDds` only requires .NET Standard 2.0).

9.272.2 Member Function Documentation

9.272.2.1 Serialize< T >()

```
static Span< byte > Rti.Dds.Topics.SerializerExtensions.Serialize< T > (
            this  ISerializer< T > self,
            T sample,
            Span< byte > buffer )  [inline], [static]
```

Serializes a data sample into a byte span

Parameters

self	This **ISerializer** (p. 673) object (this is an extension method)
sample	A data sample
buffer	A byte span with enough space to contain the serialized data. This operation throws DdsException if the data doesn't fit. You can obtain the exact size required for this sample with **ISerializer**<**T**>**.GetSerializedSampleSize** (p. 677) or a size that is guaranteed to suffice for any sample of this type with **ISerializer**<**T**>**.GetSerializedSampleMaxSize** (p. 676).

Template Parameters

T	The type of the data sample

Returns

A slice of the input span with the exact serialized buffer

9.272.2.2 Deserialize< T >()

```
static T Rti.Dds.Topics.SerializerExtensions.Deserialize< T > (
            this  ISerializer< T > self,
            Span< byte > buffer )  [inline], [static]
```

Deserializes a data sample from a byte span

Parameters

self	This **ISerializer** (p. 673) object (this is an extension method)
buffer	A byte span containing the serialized data

Template Parameters

T	The type of the data sample

Returns

A new data sample created by deserializing the buffer

9.273 Rti.Dds.Core.Policy.Service Class Reference

Identifies the Connext DDS **Service** (p. 1049) that created an **Entity** (p. 596), if any.

Inherits IEquatable< Service >.

Public Member Functions

- **Service** (**ServiceKind** kind)

  *Creates a new **Service** (p. 1049)*
- **Service With** (Action< **ServiceBuilder** > build)

  *Creates a new **Service** (p. 1049) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**Service** other)

  Compares for equality

Properties

- **ServiceKind Kind** `[get]`

  The kind of service.
- static **Service Default** `[get]`

  *Singleton containing the default value of a **Service** (p. 1049)*

9.273.1 Detailed Description

Identifies the Connext DDS **Service** (p. 1049) that created an **Entity** (p. 596), if any.

9.273.2 Constructor & Destructor Documentation

9.273.2.1 Service()

```
Rti.Dds.Core.Policy.Service.Service (
            ServiceKind kind )
```

Creates a new **Service** (p. 1049)

Parameters

kind	The value for **Kind** (p. 1051)

9.273.3 Member Function Documentation

9.273.3.1 With()

```
Service Rti.Dds.Core.Policy.Service.With (
            Action< ServiceBuilder > build )  [inline]
```

Creates a new **Service** (p. 1049) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **Service** (p. 1049).

Returns

A new **Service** (p. 1049) with the changes applied by the Action

9.273.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.Service.GetHashCode ( )  [inline]
```

Gets the hash code

9.273.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.Service.Equals (
            object other )
```

Compares for equality

9.273.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.Service.Equals (
             Service other )  [inline]
```

Compares for equality

9.273.4 Property Documentation

9.273.4.1 Kind

ServiceKind Rti.Dds.Core.Policy.Service.Kind [get]

The kind of service.

The full documentation is available in the C API: DDS_ServiceQosPolicy_kind

9.273.4.2 Default

Service Rti.Dds.Core.Policy.Service.Default [static], [get]

Singleton containing the default value of a **Service** (p. 1049)

9.274 Rti.Dds.Core.Policy.ServiceBuilder Class Reference

A modifiable type used to create an immutable **Service** (p. 1049)

Public Member Functions

- **ServiceBuilder** (**Service** data)

  Creates a builder with the values of an existing immutable instance
- **Service Build** ()

  *Creates a new **Service** (p. 1049) immutable object from this one.*

Properties

- **ServiceKind Kind** [get, set]

  The kind of service.

9.274.1 Detailed Description

A modifiable type used to create an immutable **Service** (p. 1049)

9.274.2 Constructor & Destructor Documentation

9.274.2.1 ServiceBuilder()

```
Rti.Dds.Core.Policy.ServiceBuilder.ServiceBuilder (
              Service data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.274.3 Member Function Documentation

9.274.3.1 Build()

```
Service Rti.Dds.Core.Policy.ServiceBuilder.Build ( )
```

Creates a new **Service** (p. 1049) immutable object from this one.

9.274.4 Property Documentation

9.274.4.1 Kind

```
ServiceKind Rti.Dds.Core.Policy.ServiceBuilder.Kind [get], [set]
```

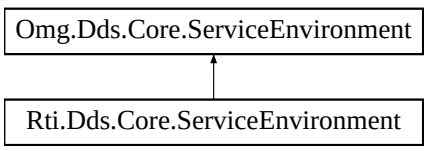
The kind of service.

The full documentation is available in the C API: `DDS_ServiceQosPolicy_kind`

9.275 Omg.Dds.Core.ServiceEnvironment Class Reference

Contains global objects used by DDS.

Inheritance diagram for Omg.Dds.Core.ServiceEnvironment:



Public Member Functions

- abstract void **Dispose** ()

  Cleans up all the memory used by global objects

Static Public Member Functions

- static **ServiceEnvironment** **CreateInstance** (string className)

  *Creates a **ServiceEnvironment** (p. 1053) instance from a given class name.*
- static **ServiceEnvironment** **CreateInstance** (string className, Assembly assembly)

  *Creates a **ServiceEnvironment** (p. 1053) instance from a given class name and Assembly.*
- static **ServiceEnvironment** **CreateInstance** (string className, AppDomain appDomain)

  *Creates a **ServiceEnvironment** (p. 1053) instance from a given class name and AppDomain.*

Properties

- abstract **DynamicTypeFactory** **TypeFactory** `[get]`

  A factory for creating DynamicType.

9.275.1 Detailed Description

Contains global objects used by DDS.

9.275.2 Member Function Documentation

9.275.2.1 CreateInstance() [1/3]

```
static  ServiceEnvironment Omg.Dds.Core.ServiceEnvironment.CreateInstance (
            string className )  [static]
```

Creates a **ServiceEnvironment** (p. 1053) instance from a given class name.

9.275.2.2 CreateInstance() [2/3]

```
static  ServiceEnvironment Omg.Dds.Core.ServiceEnvironment.CreateInstance (
            string className,
            Assembly assembly )  [inline], [static]
```

Creates a **ServiceEnvironment** (p. 1053) instance from a given class name and Assembly.

9.275.2.3 CreateInstance() [3/3]

```
static  ServiceEnvironment Omg.Dds.Core.ServiceEnvironment.CreateInstance (
            string className,
            AppDomain appDomain )  [inline], [static]
```

Creates a **ServiceEnvironment** (p. 1053) instance from a given class name and AppDomain.

9.275.2.4 Dispose()

```
abstract void Omg.Dds.Core.ServiceEnvironment.Dispose ( )  [pure virtual]
```

Cleans up all the memory used by global objects

Implemented in **Rti.Dds.Core.ServiceEnvironment** (p. 1057).

9.275.3 Property Documentation

9.275.3.1 TypeFactory

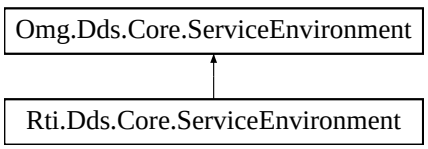
```
abstract  DynamicTypeFactory Omg.Dds.Core.ServiceEnvironment.TypeFactory  [get]
```

A factory for creating DynamicType.

9.276 Rti.Dds.Core.ServiceEnvironment Class Reference

The global entry point to the RTI Connext DDS API.

Inheritance diagram for Rti.Dds.Core.ServiceEnvironment:



Data Structures

- class **InternalDetails**
  For internal use only

Public Member Functions

- **GuardCondition CreateGuardCondition** ()

  *Creates a **GuardCondition** (p. 636).*
- **WaitSet CreateWaitSet** ()

  *Creates a **WaitSet** (p. 1248).*
- **ThreadContext GetThreadContext** ()

  *Obtains a **ThreadContext** (p. 1128) instance.*
- void **EnableAutomaticTssCleanup** (bool enable)

  Enable or disable automatic tss cleanup on platforms that support it.
- override void **Dispose** ()

  Forces the deletion of all global object and memory used by RTI Connext.

Properties

- static **ServiceEnvironment Instance** = new **ServiceEnvironment**() `[get]`

  The singleton instance
- **ProductVersion Version** = new **ProductVersion**() `[get]`

  *Unique identifier for the build of the RTI Connext DDS **Core** (p. 77) Libraries*
- **DomainParticipantFactory ParticipantFactory** `[get]`

  Obtains the singleton DomainParticipantFactory.
- override **DynamicTypeFactory TypeFactory** `[get]`

  Obtains the singleton DynamicTypeFactory.
- **InternalDetails Internal** = new **InternalDetails**() `[get]`

  For internal use only

Additional Inherited Members

9.276.1 Detailed Description

The global entry point to the RTI Connext DDS API.

The ServiceEndpoint singleton is implicitly used when other objects are created or accessed. For example, `Service↩ Environment.Instance.ParticipantFactory` returns the same object as **`DomainParticipant↩ Factory.Instance`** (p. 482).

9.276.2 Member Function Documentation

9.276.2.1 CreateGuardCondition()

```
GuardCondition Rti.Dds.Core.ServiceEnvironment.CreateGuardCondition ( )
```

Creates a **GuardCondition** (p. 636).

9.276.2.2 CreateWaitSet()

```
WaitSet Rti.Dds.Core.ServiceEnvironment.CreateWaitSet ( )
```

Creates a **WaitSet** (p. 1248).

9.276.2.3 GetThreadContext()

```
ThreadContext Rti.Dds.Core.ServiceEnvironment.GetThreadContext ( )
```

Obtains a **ThreadContext** (p. 1128) instance.

9.276.2.4 EnableAutomaticTssCleanup()

```
void Rti.Dds.Core.ServiceEnvironment.EnableAutomaticTssCleanup (
            bool enable )
```

Enable or disable automatic tss cleanup on platforms that support it.

9.276.2.5 Dispose()

```
override void Rti.Dds.Core.ServiceEnvironment.Dispose ( )  [inline], [virtual]
```

Forces the deletion of all global object and memory used by RTI Connext.

Calling this function is not necessary, but it can be called at the end of the application when a memory profiler is being used.

Implements **Omg.Dds.Core.ServiceEnvironment** (p. 1055).

9.276.3 Property Documentation

9.276.3.1 Instance

```
ServiceEnvironment Rti.Dds.Core.ServiceEnvironment.Instance = new ServiceEnvironment()  [static],
[get]
```

The singleton instance

9.276.3.2 Version

```
ProductVersion Rti.Dds.Core.ServiceEnvironment.Version = new ProductVersion() [get]
```

Unique identifier for the build of the RTI Connext DDS **Core** (p. 77) Libraries

9.276.3.3 ParticipantFactory

```
DomainParticipantFactory Rti.Dds.Core.ServiceEnvironment.ParticipantFactory [get]
```

Obtains the singleton DomainParticipantFactory.

9.276.3.4 TypeFactory

```
override DynamicTypeFactory Rti.Dds.Core.ServiceEnvironment.TypeFactory [get]
```

Obtains the singleton DynamicTypeFactory.

9.276.3.5 Internal

```
InternalDetails Rti.Dds.Core.ServiceEnvironment.Internal = new InternalDetails() [get]
```

For internal use only

9.277 Rti.Dds.Core.Status.ServiceRequestAcceptedStatus Class Reference

Notifies of a change in the **StatusMask.ServiceRequestAccepted** (p. 109) status.

Inherits IEquatable< ServiceRequestAcceptedStatus >.

Public Member Functions

- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**ServiceRequestAcceptedStatus** other)
  Compares for equality
- override string **ToString** ()
  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]

  The total cumulative number of ServiceRequests that have been accepted by a Publication.DataWriter<T>.
- **EventCount**< int > **CurrentCount** [get]

  The current number of ServiceRequests that have been accepted by this Publication.DataWriter<T>.
- **InstanceHandle LastRequestHandle** [get]

  A handle to the last ServiceRequest that caused the Publication.DataWriter<T>'s status to change.
- int **ServiceId** [get]

  ID of the service to which the accepted Request belongs.

9.277.1 Detailed Description

Notifies of a change in the **StatusMask.ServiceRequestAccepted** (p. 109) status.

*The full documentation is available in the C API:*DDS_ServiceRequestAcceptedStatus

9.277.2 Member Function Documentation

9.277.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.GetHashCode ( )  [inline]
```

Gets the hash code

9.277.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.Equals (
            object other )
```

Compares for equality

9.277.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.Equals (
             ServiceRequestAcceptedStatus other )  [inline]
```

Compares for equality

9.277.2.4 ToString()

```
override string Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.ToString ( )
```

Returns a readable summary of the status

9.277.3 Property Documentation

9.277.3.1 TotalCount

EventCount<int> Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.TotalCount [get]

The total cumulative number of ServiceRequests that have been accepted by a Publication.DataWriter<T>.

The full documentation is available in the C API: DDS_ServiceRequestAcceptedStatus_total_count

9.277.3.2 CurrentCount

EventCount<int> Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.CurrentCount [get]

The current number of ServiceRequests that have been accepted by this Publication.DataWriter<T>.

The full documentation is available in the C API: DDS_ServiceRequestAcceptedStatus_current_count

9.277.3.3 LastRequestHandle

InstanceHandle Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.LastRequestHandle [get]

A handle to the last ServiceRequest that caused the Publication.DataWriter<T>'s status to change.

The full documentation is available in the C API: DDS_ServiceRequestAcceptedStatus_last_request_handle

9.277.3.4 ServiceId

```
int Rti.Dds.Core.Status.ServiceRequestAcceptedStatus.ServiceId [get]
```

ID of the service to which the accepted Request belongs.

The full documentation is available in the C API: DDS_ServiceRequestAcceptedStatus_service_id

9.278 Rti.RequestReply.SimpleReplier< TRequest, TReply > Class Template Reference

A simplified version of **Replier** (p. 951) that can be used to reply to incoming requests on an individual basis.

Properties

- **DataReader**< TRequest > **RequestReader** `[get]`

  The underlying DataReader<TRequest> used to read requests.
- **DataWriter**< TReply > **ReplyWriter** `[get]`

  The underlying DataWriter<TReply> used to send replies.

9.278.1 Detailed Description

A simplified version of **Replier** (p. 951) that can be used to reply to incoming requests on an individual basis.

Template Parameters

TRequest	The type of the requests to be received.
TReply	The type of the replies to be sent.

A **SimpleReplier** (p. 1061) is based on an event handler. Requests are passed to the handler, which returns a reply. The reply is directed only to the **Requester** (p. 971) that sent the request. SimpleRepliers are useful for simple use cases where a single reply for a request can be generated quickly, for example, looking up a table. When more than one reply for a request can be generated or the processing is complex or needs to happen asynchronously, use a **Replier** (p. 951) instead.

Use `participant.BuildSimpleReplier<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequestReplyExtensions** (p. 509)) to configure and build a **SimpleReplier** (p. 1061).

For example, to create a **SimpleReplier** (p. 1061):

```
var simpleReplier = participant.BuildSimpleReplier<FooRequest, FooReply>()
        .WithServiceName("FooService")
        .WithRequestHandler(request => new FooReply(request)")
        .Create();
```

See also

Request-Reply Examples (p. 55)

9.278.2 Property Documentation

9.278.2.1 RequestReader

```
DataReader<TRequest> Rti.RequestReply.SimpleReplier< TRequest, TReply >.RequestReader [get]
```

The underlying DataReader<TRequest> used to read requests.

9.278.2.2 ReplyWriter

```
DataWriter<TReply> Rti.RequestReply.SimpleReplier< TRequest, TReply >.ReplyWriter [get]
```

The underlying DataWriter<TReply> used to send replies.

9.279 Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply > Class Template Reference

A builder that allows configuring and creating a new **SimpleReplier** (p. 1061). It can be retrieved via `participant.BuildSimpleReplier<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequestReplyExtensions** (p. 509)).

Public Member Functions

- **SimpleReplierBuilder**< TRequest, TReply > **WithTopicNames** (string requestTopicName, string replyTopicName)

  *Sets **RequestTopicName** (p. 1067) and **ReplyTopicName** (p. 1068).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithServiceName** (string serviceName)

  *Sets **ServiceName** (p. 1068).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithRequestHandler** (Func< TRequest, TReply > requestHandler)

  *Sets **RequestHandler** (p. 1068).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithPublisher** (**Publisher** publisher)

  *Sets **Publisher** (p. 1068).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithSubscriber** (**Subscriber** subscriber)

  *Sets **Subscriber** (p. 1068).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithDataWriterQos** (**DataWriterQos** dataWriterQos)

  *Sets **DataWriterQos** (p. 1068).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithDataReaderQos** (**DataReaderQos** dataReaderQos)

  *Sets **DataReaderQos** (p. 1069).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithRequestDynamicType** (**DynamicType** requestDynamicType)

  *Sets **RequestDynamicType** (p. 1069).*
- **SimpleReplierBuilder**< TRequest, TReply > **WithReplyDynamicType** (**DynamicType** replyDynamicType)

  *Sets **ReplyDynamicType** (p. 1069).*
- **SimpleReplier**< TRequest, TReply > **Create** ()

  *Creates a new **SimpleReplier** (p. 1061) object using the current properties of the SimpleReplierBuilder<TRequest, TReply> instance.*

Properties

- **DomainParticipant Participant** `[get]`

  *The DomainParticipant used by the **Replier** (p. 951).*
- string **RequestTopicName** `[get, set]`

  *The name of the request topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- string **ReplyTopicName** `[get, set]`

  *The name of the reply topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- string **ServiceName** `[get, set]`

  *The service name that a **Requester** (p. 971) and a **Replier** (p. 951) use to match.*
- Func< TRequest, TReply > **RequestHandler** `[get, set]`

  The handler to produce a reply for every incoming request.
- **Publisher Publisher** `[get, set]`

  *The publisher used by the **Replier** (p. 951).*
- **Subscriber Subscriber** `[get, set]`

  *The subscriber used by the **Replier** (p. 951).*
- **DataWriterQos DataWriterQos** `[get, set]`

  *The QoS used by the **Replier** (p. 951)'s underlying DataWriter<TReply>.*
- **DataReaderQos DataReaderQos** `[get, set]`

  *The QoS used by the **Replier** (p. 951)'s underlying DataReader<TRequest>.*
- **DynamicType RequestDynamicType** `[get, set]`

  *The request type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.*
- **DynamicType ReplyDynamicType** `[get, set]`

  *The reply type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.*

9.279.1 Detailed Description

A builder that allows configuring and creating a new **SimpleReplier** (p. 1061). It can be retrieved via `participant.BuildSimpleReplier<TRequest, TReply>()` (an extension method defined in **DomainParticipantRequestReplyExtensions** (p. 509)).

The builder's configuration will be used to create the resulting **SimpleReplier** (p. 1061). At its simplest form, a **SimpleReplier** (p. 1061) requires only the use of **WithServiceName** (p. 1064) and **WithRequestHandler** (p. 1064) to set the corresponding properties for creation to be successful. Several other "With" methods provide further configuration options.

9.279.2 Member Function Documentation

9.279.2.1 WithTopicNames()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithTopicNames (
            string requestTopicName,
            string replyTopicName ) [inline]
```

Sets **RequestTopicName** (p. 1067) and **ReplyTopicName** (p. 1068).

Parameters

requestTopicName	The new **RequestTopicName** (p. 1067) to be set.
replyTopicName	The new **ReplyTopicName** (p. 1068) to be set.

Returns

The same builder.

Either the topic names or **ServiceName** (p. 1068) have to be set in order to call **Create()** (p. 1067).

9.279.2.2 WithServiceName()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithServiceName (
            string serviceName ) [inline]
```

Sets **ServiceName** (p. 1068).

Parameters

serviceName	The new **ServiceName** (p. 1068) to be set.

Returns

The same builder.

Either the topic names or **ServiceName** (p. 1068) have to be set in order to call **Create()** (p. 1067).

9.279.2.3 WithRequestHandler()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithRequestHandler (
            Func< TRequest, TReply > requestHandler ) [inline]
```

Sets **RequestHandler** (p. 1068).

Parameters

requestHandler	The new **RequestHandler** (p. 1068) to be set.

9.279.2.4 WithPublisher()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithPublisher (
            Publisher publisher ) [inline]
```

Sets **Publisher** (p. 1068).

Parameters

publisher	The new **Publisher** (p. 1068) to be set.

Returns

The same builder.

9.279.2.5 WithSubscriber()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithSubscriber (
            Subscriber subscriber ) [inline]
```

Sets **Subscriber** (p. 1068).

Parameters

subscriber	The new **Subscriber** (p. 1068) to be set.

Returns

The same builder.

9.279.2.6 WithDataWriterQos()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithDataWriterQos (
            DataWriterQos dataWriterQos ) [inline]
```

Sets **DataWriterQos** (p. 1068).

Parameters

dataWriterQos	The new **DataWriterQos** (p. 1068) to be set.

Returns

The same builder.

9.279.2.7 WithDataReaderQos()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithDataReaderQos (
            DataReaderQos dataReaderQos ) [inline]
```

Sets **DataReaderQos** (p. 1069).

Parameters

dataReaderQos	The new **DataReaderQos** (p. 1069) to be set.

Returns

The same builder.

9.279.2.8 WithRequestDynamicType()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithRequestDynamicType (
            DynamicType requestDynamicType ) [inline]
```

Sets **RequestDynamicType** (p. 1069).

Parameters

requestDynamicType	The new **RequestDynamicType** (p. 1069) to be set.

Returns

The same builder.

9.279.2.9 WithReplyDynamicType()

```
SimpleReplierBuilder< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply
>.WithReplyDynamicType (
            DynamicType replyDynamicType ) [inline]
```

Sets **ReplyDynamicType** (p. 1069).

Parameters

replyDynamicType	The new **ReplyDynamicType** (p. 1069) to be set.

Returns

The same builder.

9.279.2.10 Create()

```
SimpleReplier< TRequest, TReply > Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply >.Create
( ) [inline]
```

Creates a new **SimpleReplier** (p. 1061) object using the current properties of the SimpleReplierBuilder<TRequest, TReply> instance.

Returns

The new **SimpleReplier** (p. 1061) object.

9.279.3 Property Documentation

9.279.3.1 Participant

```
DomainParticipant Rti.RequestReply.SimpleReplierBuilder< TRequest, TReply >.Participant [get]
```

The DomainParticipant used by the **Replier** (p. 951).

9.279.3.2 RequestTopicName

`string` **`Rti.RequestReply.SimpleReplierBuilder`**`< TRequest, TReply >.RequestTopicName [get], [set]`

The name of the request topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 1068) have to be set.

9.279.3.3 ReplyTopicName

`string` **`Rti.RequestReply.SimpleReplierBuilder`**`< TRequest, TReply >.ReplyTopicName [get], [set]`

The name of the reply topic a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 1068) have to be set.

9.279.3.4 ServiceName

`string` **`Rti.RequestReply.SimpleReplierBuilder`**`< TRequest, TReply >.ServiceName [get], [set]`

The service name that a **Requester** (p. 971) and a **Replier** (p. 951) use to match.

Either both topic names or **ServiceName** (p. 1068) have to be set.

9.279.3.5 RequestHandler

`Func<TRequest, TReply>` **`Rti.RequestReply.SimpleReplierBuilder`**`< TRequest, TReply >.RequestHandler [get], [set]`

The handler to produce a reply for every incoming request.

9.279.3.6 Publisher

`Publisher` **`Rti.RequestReply.SimpleReplierBuilder`**`< TRequest, TReply >.` **`Publisher`** `[get], [set]`

The publisher used by the **Replier** (p. 951).

9.279.3.7 Subscriber

`Subscriber` **`Rti.RequestReply.SimpleReplierBuilder`**`< TRequest, TReply >.` **`Subscriber`** `[get], [set]`

The subscriber used by the **Replier** (p. 951).

9.279.3.8 DataWriterQos

DataWriterQos **Rti.RequestReply.SimpleReplierBuilder**< TRequest, TReply >. **DataWriterQos** [get], [set]

The QoS used by the **Replier** (p. 951)'s underlying DataWriter<TReply>.

9.279.3.9 DataReaderQos

DataReaderQos **Rti.RequestReply.SimpleReplierBuilder**< TRequest, TReply >. **DataReaderQos** [get], [set]

The QoS used by the **Replier** (p. 951)'s underlying DataReader<TRequest>.

9.279.3.10 RequestDynamicType

DynamicType **Rti.RequestReply.SimpleReplierBuilder**< TRequest, TReply >.RequestDynamicType [get], [set]

The request type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.

This is required when the **Replier** (p. 951)'s TRequest is **Rti.Types.Dynamic.DynamicData** (p. 564).

9.279.3.11 ReplyDynamicType

DynamicType **Rti.RequestReply.SimpleReplierBuilder**< TRequest, TReply >.ReplyDynamicType [get], [set]

The reply type, when **Rti.Types.Dynamic.DynamicData** (p. 564) is used.

This is required when the **Replier** (p. 951)'s TReply is **Rti.Types.Dynamic.DynamicData** (p. 564).

9.280 Rti.Utility.HeapMonitor.Snapshot Class Reference

Contains information about memory usage

Inherits IComparable< Snapshot >, and IEquatable< Snapshot >.

Public Member Functions

- int **CompareTo** (**Snapshot** snapshot)

  *Compares **CurrentHeapUsage*** (p. *1071) in two snapshots*
- bool **Equals** (**Snapshot** snapshot)

  *Compares **CurrentHeapUsage*** (p. *1071) in two snapshots for equality*
- override string **ToString** ()

  *Displays **CurrentHeapUsage*** (p. *1071).*
- override int **GetHashCode** ()

  *Returns **CurrentHeapUsage*** (p. *1071), cast to int.*

Properties

- ulong **CurrentHeapUsage** = 0 `[get]`

  The number bytes of native heap memory currently in use.

9.280.1 Detailed Description

Contains information about memory usage

9.280.2 Member Function Documentation

9.280.2.1 CompareTo()

```
int Rti.Utility.HeapMonitor.Snapshot.CompareTo (
              Snapshot snapshot )
```

Compares **CurrentHeapUsage** (p. 1071) in two snapshots

9.280.2.2 Equals()

```
bool Rti.Utility.HeapMonitor.Snapshot.Equals (
              Snapshot snapshot )
```

Compares **CurrentHeapUsage** (p. 1071) in two snapshots for equality

9.280.2.3 ToString()

```
override string Rti.Utility.HeapMonitor.Snapshot.ToString ( )
```

Displays **CurrentHeapUsage** (p. 1071).

9.280.2.4 GetHashCode()

```
override int Rti.Utility.HeapMonitor.Snapshot.GetHashCode ( )
```

Returns **CurrentHeapUsage** (p. 1071), cast to int.

9.280.3 Property Documentation

9.280.3.1 CurrentHeapUsage

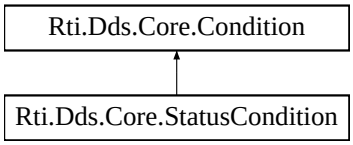
```
ulong Rti.Utility.HeapMonitor.Snapshot.CurrentHeapUsage = 0  [get]
```

The number bytes of native heap memory currently in use.

9.281 Rti.Dds.Core.StatusCondition Class Reference

A **Condition** (p. 228) that is associated with each **Entity** (p. 596) and activates when certain status changes happen to that **Entity** (p. 596).

Inheritance diagram for Rti.Dds.Core.StatusCondition:



Properties

- **Entity Entity** `[get]`

  *Get the **Entity** (p. 596) associated with the **StatusCondition** (p. 1071).*
- **StatusMask EnabledStatuses** `[get, set]`

  *Get or set the list of statuses enabled on an **Entity** (p. 596).*

Additional Inherited Members

9.281.1 Detailed Description

A **Condition** (p. 228) that is associated with each **Entity** (p. 596) and activates when certain status changes happen to that **Entity** (p. 596).

9.281.2 Property Documentation

9.281.2.1 Entity

Entity Rti.Dds.Core.StatusCondition.Entity [get]

Get the **Entity** (p. 596) associated with the **StatusCondition** (p. 1071).

The full documentation is available in the C API: DDS_StatusCondition_get_entity

9.281.2.2 EnabledStatuses

StatusMask Rti.Dds.Core.StatusCondition.EnabledStatuses [get], [set]

Get or set the list of statuses enabled on an **Entity** (p. 596).

The full documentation is available in the C API: DDS_StatusCondition_set_enabled_statuses

9.282 Rti.Types.Builtin.StringTopicType Class Reference

An un-keyed topic-type containing a single string. This type can be used to instantiate a Dds.Topics.Topic<T>.

Inherits IEquatable< StringTopicType >, and IEquatable< string >.

Public Member Functions

- override string **ToString** ()
  *Returns **Value** (p. 1074).*
- override bool **Equals** (object obj)
  Compares for equality
- bool **Equals** (**StringTopicType** other)
  Compares for equality
- bool **Equals** (string other)
  Compares for equality
- override int **GetHashCode** ()
  Returns Value.GetHashCode()

Static Public Member Functions

- static implicit **operator StringTopicType** (string value)

  *Implicit conversion from string to **StringTopicType** (p. 1072)*
- static implicit **operator string** (**StringTopicType** sample)

  *Implicit conversion from **StringTopicType** (p. 1072) to string.*

Properties

- string **Value** = string.Empty `[get, set]`

  The string (its maximum size is 1024 bytes in UTF-8 format)

9.282.1 Detailed Description

An un-keyed topic-type containing a single string. This type can be used to instantiate a Dds.Topics.Topic<T>.

This type is equivalent to the following IDL type:

```
struct StringTopicType {
    string<1024> value;
};
```

Note that the maximum size of the string that can be published with this type is 1024 bytes in UTF-8 format.

It is also possible to use `string` as the type argument for `Topic`, with the same effect as **`StringTopicType`** (p. `1072`).

9.282.2 Member Function Documentation

9.282.2.1 ToString()

```
override string Rti.Types.Builtin.StringTopicType.ToString ( )
```

Returns **Value** (p. 1074).

9.282.2.2 Equals() [1/3]

```
override bool Rti.Types.Builtin.StringTopicType.Equals (
            object obj )
```

Compares for equality

9.282.2.3 Equals() [2/3]

```
bool Rti.Types.Builtin.StringTopicType.Equals (
            StringTopicType other )
```

Compares for equality

9.282.2.4 Equals() [3/3]

```
bool Rti.Types.Builtin.StringTopicType.Equals (
            string other )
```

Compares for equality

9.282.2.5 GetHashCode()

```
override int Rti.Types.Builtin.StringTopicType.GetHashCode ( )
```

Returns Value.GetHashCode()

9.282.2.6 operator StringTopicType()

```
static implicit Rti.Types.Builtin.StringTopicType.operator  StringTopicType (
            string value )  [static]
```

Implicit conversion from string to **StringTopicType** (p. 1072)

9.282.2.7 operator string()

```
static implicit Rti.Types.Builtin.StringTopicType.operator string (
            StringTopicType sample )  [static]
```

Implicit conversion from **StringTopicType** (p. 1072) to string.

9.282.3 Property Documentation

9.282.3.1 Value

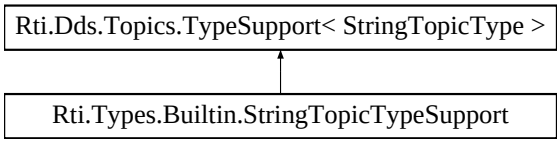
```
string Rti.Types.Builtin.StringTopicType.Value = string.Empty  [get], [set]
```

The string (its maximum size is 1024 bytes in UTF-8 format)

9.283 Rti.Types.Builtin.StringTopicTypeSupport Class Reference

The type support for **StringTopicType** (p. 1072).

Inheritance diagram for Rti.Types.Builtin.StringTopicTypeSupport:



Public Member Functions

- **StringTopicTypeSupport** ()
  *For internal use only. Use **Instance** (p. 1076) instead.*

Properties

- static **StringTopicTypeSupport Instance** `[get]`
  Gets the singleton

Additional Inherited Members

9.283.1 Detailed Description

The type support for **StringTopicType** (p. 1072).

9.283.2 Constructor & Destructor Documentation

9.283.2.1 StringTopicTypeSupport()

```
Rti.Types.Builtin.StringTopicTypeSupport.StringTopicTypeSupport ( )  [inline]
```

For internal use only. Use **Instance** (p. 1076) instead.

9.283.3 Property Documentation

9.283.3.1 Instance

```
StringTopicTypeSupport Rti.Types.Builtin.StringTopicTypeSupport.Instance  [static], [get]
```

Initial value:

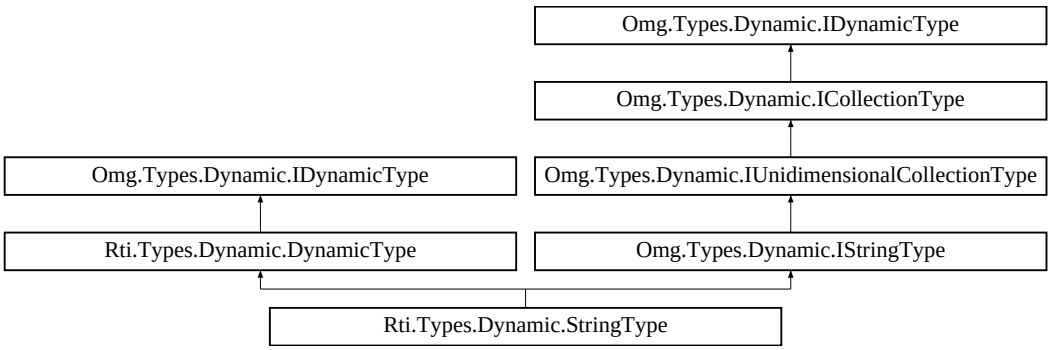
```
=
            ServiceEnvironment.Instance.Internal.TypeSupportFactory.CreateTypeSupport<StringTopicTypeSupport,
        StringTopicType>()
```

Gets the singleton

9.284 Rti.Types.Dynamic.StringType Class Reference

Represents an IDL string.

Inheritance diagram for Rti.Types.Dynamic.StringType:



Static Public Attributes

- const int **Unbounded** = int.MaxValue

  *Special value for **Bounds** (p. 1077) that indicates that the string is unbounded.*

Properties

- uint **Bounds** [get]

  *The maximum number of characters, or **Unbounded** (p. 1077)*
- **IDynamicType ContentType** [get]

  The type of the string characters.

Additional Inherited Members

9.284.1 Detailed Description

Represents an IDL string.

9.284.2 Field Documentation

9.284.2.1 Unbounded

```
const int Rti.Types.Dynamic.StringType.Unbounded = int.MaxValue  [static]
```

Special value for **Bounds** (p. 1077) that indicates that the string is unbounded.

9.284.3 Property Documentation

9.284.3.1 Bounds

```
uint Rti.Types.Dynamic.StringType.Bounds  [get]
```

The maximum number of characters, or **Unbounded** (p. 1077)

Implements **Omg.Types.Dynamic.IUnidimensionalCollectionType** (p. 684).

9.284.3.2 ContentType

```
IDynamicType Rti.Types.Dynamic.StringType.ContentType  [get]
```

The type of the string characters.

Implements **Omg.Types.Dynamic.ICollectionType** (p. 652).

9.285 Rti.Types.Dynamic.StructBuilder Class Reference

Allows creating a new **StructType** (p. 1086) via **DynamicTypeFactory.BuildStruct()** (p. 588).

Public Member Functions

- **StructBuilder WithName** (string name)

  *Returns the same **StructBuilder** (p. 1077) instance with a modified **Name** (p. 1080).*
- **StructBuilder WithParent** (**StructType** parent)

  *Returns the same **StructBuilder** (p. 1077) instance with a modified **Parent** (p. 1081).*
- **StructBuilder WithExtensibility** (**ExtensibilityKind** kind)

  *Returns the same **StructBuilder** (p. 1077) instance with a modified **ExtensibilityKind** (p. 1081).*
- **StructBuilder AddMember** (**StructMember** member)

  *Returns the same **StructBuilder** (p. 1077) instance with a new **StructMember** (p. 1081) added to **Members** (p. 1081).*
- **StructBuilder AddMembers** (params **StructMember**[ ] members)

  *Returns the same **StructBuilder** (p. 1077) instance with a number of new **StructMember** (p. 1081) added to **Members** (p. 1081).*
- **StructBuilder AddMembers** (IEnumerable< **StructMember** > members)

  *Returns the same **StructBuilder** (p. 1077) instance with a number of new **StructMember** (p. 1081) added to **Members** (p. 1081).*
- **StructType Create** ()

  *Creates a new **StructType** (p. 1086) object using the current properties of the **StructBuilder** (p. 1077) instance.*

Properties

- string **Name** [get]

  The type name.
- **StructType Parent** [get]

  The base type or null if the struct doesn't have one.
- **ExtensibilityKind ExtensibilityKind** [get]

  The value for the IDL extensibility kind.
- IList< **StructMember** > **Members** = new List< **StructMember**>() [get]

  The data members.

9.285.1 Detailed Description

Allows creating a new **StructType** (p. 1086) via **DynamicTypeFactory.BuildStruct()** (p. 588).

9.285.2 Member Function Documentation

9.285.2.1 WithName()

```
StructBuilder Rti.Types.Dynamic.StructBuilder.WithName (
            string name )  [inline]
```

Returns the same **StructBuilder** (p. 1077) instance with a modified **Name** (p. 1080).

Parameters

name	The new **Name** (p. 1080) to be set.

9.285.2.2 WithParent()

```
StructBuilder Rti.Types.Dynamic.StructBuilder.WithParent (
            StructType parent )  [inline]
```

Returns the same **StructBuilder** (p. 1077) instance with a modified **Parent** (p. 1081).

Parameters

parent	The new **Parent** (p. 1081) to be set.

9.285.2.3 WithExtensibility()

```
StructBuilder Rti.Types.Dynamic.StructBuilder.WithExtensibility (
            ExtensibilityKind kind )  [inline]
```

Returns the same **StructBuilder** (p. 1077) instance with a modified **ExtensibilityKind** (p. 1081).

Parameters

kind	The new **ExtensibilityKind** (p. 1081) to be set.

9.285.2.4 AddMember()

```
StructBuilder Rti.Types.Dynamic.StructBuilder.AddMember (
            StructMember member )  [inline]
```

Returns the same **StructBuilder** (p. 1077) instance with a new **StructMember** (p. 1081) added to **Members** (p. 1081).

Parameters

member	The **StructMember** (p. 1081) to be added.

9.285.2.5 AddMembers() [1/2]

```
StructBuilder Rti.Types.Dynamic.StructBuilder.AddMembers (
            params  StructMember[] members )  [inline]
```

Returns the same **StructBuilder** (p. 1077) instance with a number of new **StructMember** (p. 1081) added to **Members** (p. 1081).

Parameters

members	The array of **StructMember** (p. 1081) to be added.

9.285.2.6 AddMembers() [2/2]

```
StructBuilder Rti.Types.Dynamic.StructBuilder.AddMembers (
            IEnumerable<  StructMember > members )  [inline]
```

Returns the same **StructBuilder** (p. 1077) instance with a number of new **StructMember** (p. 1081) added to **Members** (p. 1081).

Parameters

members	The enumerable object of **StructMember** (p. 1081) to be added.

9.285.2.7 Create()

```
StructType Rti.Types.Dynamic.StructBuilder.Create ( )  [inline]
```

Creates a new **StructType** (p. 1086) object using the current properties of the **StructBuilder** (p. 1077) instance.

9.285.3 Property Documentation

9.285.3.1 Name

```
string Rti.Types.Dynamic.StructBuilder.Name  [get]
```

The type name.

9.285.3.2 Parent

```
StructType Rti.Types.Dynamic.StructBuilder.Parent  [get]
```

The base type or null if the struct doesn't have one.

9.285.3.3 ExtensibilityKind

```
ExtensibilityKind Rti.Types.Dynamic.StructBuilder.ExtensibilityKind  [get]
```

The value for the IDL extensibility kind.

9.285.3.4 Members

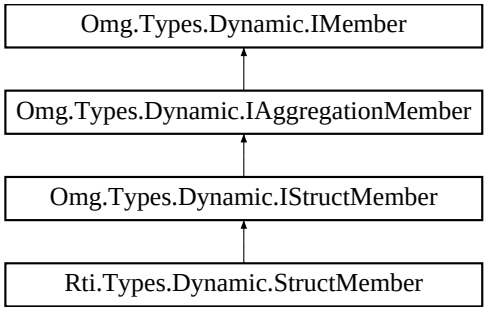
```
IList< StructMember> Rti.Types.Dynamic.StructBuilder.Members = new List< StructMember>()  [get]
```

The data members.

9.286 Rti.Types.Dynamic.StructMember Class Reference

Represents a data member in a **StructType** (p. 1086).

Inheritance diagram for Rti.Types.Dynamic.StructMember:



Public Member Functions

- **StructMember** (string name, **DynamicType** type, int id= **InvalidMemberId**, bool isExternal=false, bool is↩ Key=false, bool isOptional=false, bool isMustUnderstand=false, **Annotations** annotations=null)

  *Creates a new **StructMember** (p. 1081).*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Calculates a hash code
- bool **Equals** (**StructMember** other)

  Compares for equality
- override string **ToString** ()

  Returns the member type and name

Static Public Attributes

- const int **InvalidMemberId** = 0x7FFFFFFF

  The default value for a member id.

Properties

- string **Name** `[get]`

  The member name.
- **DynamicType Type** `[get]`

  The member type.
- bool **IsExternal** `[get]`

  Whether this member is annotated as `@external`.
- int **Id** `[get]`

  The member IDL (value of the `@id` annotation).
- bool **IsKey** `[get]`

  Whether this member is annotated as `@key`.
- bool **IsOptional** `[get]`

  Whether this member is annotated as ``.
- bool **IsMustUnderstand** `[get]`

  Whether this member is annotated as `@must_understand`.
- **Annotations Annotations** `[get, set]`

  Optional values for the annotated properties of this member.

9.286.1 Detailed Description

Represents a data member in a **StructType** (p. 1086).

9.286.2 Constructor & Destructor Documentation

9.286.2.1 StructMember()

```
Rti.Types.Dynamic.StructMember.StructMember (
            string name,
             DynamicType type,
            int id =  InvalidMemberId,
            bool isExternal = false,
            bool isKey = false,
            bool isOptional = false,
            bool isMustUnderstand = false,
             Annotations annotations = null )  [inline]
```

Creates a new **StructMember** (p. 1081).

Parameters

name	The name (required)
type	The type (required)
id	An explicit member ID (optional, automatically assigned by default)
isExternal	Whether to set @external (optional, false by default)
isKey	Whether to set @key (optional, false by default)
isOptional	Whether to set @optional (optional, false by default)
isMustUnderstand	Whether to set @must_understand (optional, false by default)
annotations	Member annotations (optional, none by default)

9.286.3 Member Function Documentation

9.286.3.1 Equals() [1/2]

```
override bool Rti.Types.Dynamic.StructMember.Equals (
            object other )
```

Compares for equality

9.286.3.2 GetHashCode()

```
override int Rti.Types.Dynamic.StructMember.GetHashCode ( )  [inline]
```

Calculates a hash code

9.286.3.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.StructMember.Equals (
            StructMember other )  [inline]
```

Compares for equality

9.286.3.4 ToString()

```
override string Rti.Types.Dynamic.StructMember.ToString ( )
```

Returns the member type and name

9.286.4 Field Documentation

9.286.4.1 InvalidMemberId

```
const int Rti.Types.Dynamic.StructMember.InvalidMemberId = 0x7FFFFFFF  [static]
```

The default value for a member id.

9.286.5 Property Documentation

9.286.5.1 Name

```
string Rti.Types.Dynamic.StructMember.Name  [get]
```

The member name.

Implements **Omg.Types.Dynamic.IMember** (p. 658).

9.286.5.2 Type

```
DynamicType Rti.Types.Dynamic.StructMember.Type [get]
```

The member type.

Implements **Omg.Types.Dynamic.IAggregationMember** (p. 648).

9.286.5.3 IsExternal

```
bool Rti.Types.Dynamic.StructMember.IsExternal [get]
```

Whether this member is annotated as `@external`.

Implements **Omg.Types.Dynamic.IAggregationMember** (p. 649).

9.286.5.4 Id

```
int Rti.Types.Dynamic.StructMember.Id [get]
```

The member IDL (value of the `@id` annotation).

Implements **Omg.Types.Dynamic.IAggregationMember** (p. 648).

9.286.5.5 IsKey

```
bool Rti.Types.Dynamic.StructMember.IsKey [get]
```

Whether this member is annotated as `@key`.

Implements **Omg.Types.Dynamic.IStructMember** (p. 679).

9.286.5.6 IsOptional

```
bool Rti.Types.Dynamic.StructMember.IsOptional [get]
```

Whether this member is annotated as ``.

Implements **Omg.Types.Dynamic.IStructMember** (p. 679).

9.286.5.7 IsMustUnderstand

```
bool Rti.Types.Dynamic.StructMember.IsMustUnderstand  [get]
```

Whether this member is annotated as `@must_understand`.

Note that members that are annotated as `@key` are always considered `@must_understand`, even if not explicitly annotated as such.

9.286.5.8 Annotations

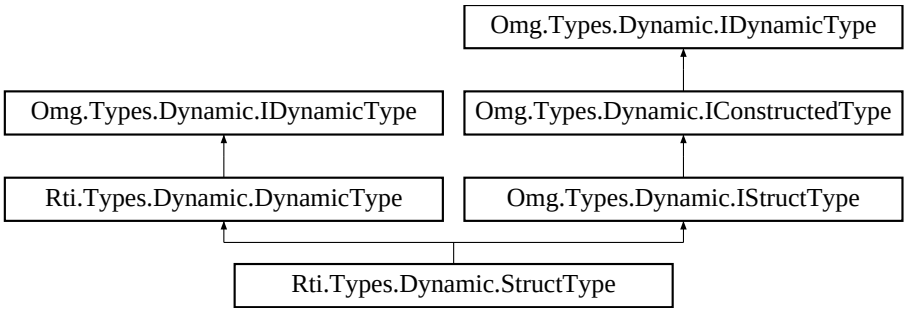
```
Annotations Rti.Types.Dynamic.StructMember.Annotations  [get], [set]
```

Optional values for the annotated properties of this member.

9.287 Rti.Types.Dynamic.StructType Class Reference

Represents an IDL struct.

Inheritance diagram for Rti.Types.Dynamic.StructType:



Public Member Functions

- **StructMember GetMember** (uint index)

  Returns a member by its position in the type
- **StructMember GetMember** (string name)

  Finds a member by its name
- uint **FindMemberByName** (string name)

  *Finds the index for a member name, which can be used as the argument for **GetMember(uint)** (p. 1087).*
- uint **FindMemberById** (int id)

  Finds the member index given a member ID (`@id` IDL annotation)
- uint **GetCdrSerializedSampleMaxSize** (short representationId=DataRepresentation.Xcdr)

  Gets the maximum serialized size of samples of this type using a certain DataRepresentation.
- uint **GetCdrSerializedSampleMinSize** (short representationId=DataRepresentation.Xcdr)

  Gets the minimum serialized size of samples of this type using a certain DataRepresentation.
- uint **GetCdrSerializedSampleKeyMaxSize** (short representationId=DataRepresentation.Xcdr)

  Gets the maximum serialized size of the data type's key using a certain DataRepresentation.

Properties

- **StructType Parent** [get]

  The base type or null if this struct doesn't have one.
- **ExtensibilityKind ExtensibilityKind** [get]

  The value for the IDL extensibility kind.
- IEnumerable< **StructMember** > **Members** [get]

  The data members.
- uint **MemberCount** [get]

  The number of data members.

9.287.1 Detailed Description

Represents an IDL struct.

9.287.2 Member Function Documentation

9.287.2.1 GetMember() [1/2]

```
StructMember Rti.Types.Dynamic.StructType.GetMember (
            uint index )
```

Returns a member by its position in the type

Exceptions

System.IndexOutOfRangeException	If `index >= MemberCount.`

Returns

The member if the index is valid, or null if the index is InvalidMemberIndex

Implements **Omg.Types.Dynamic.IConstructedType** (p. 653).

9.287.2.2 GetMember() [2/2]

```
StructMember Rti.Types.Dynamic.StructType.GetMember (
            string name )
```

Finds a member by its name

Returns

The member if the name exists, or null if the name doesn't exist

Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

9.287.2.3 FindMemberByName()

```
uint Rti.Types.Dynamic.StructType.FindMemberByName (
            string name )
```

Finds the index for a member name, which can be used as the argument for **GetMember(uint)** (p. 1087).

Returns

The member index, if the name exists or InvalidMemberIndex if it doesn't.

9.287.2.4 FindMemberById()

```
uint Rti.Types.Dynamic.StructType.FindMemberById (
            int id )
```

Finds the member index given a member ID (`@id` IDL annotation)

Returns

The member index, if the ID exists or InvalidMemberIndex if it doesn't.

The full documentation is available in the C API: `DDS_TypeCode_find_member_by_id`

9.287.2.5 GetCdrSerializedSampleMaxSize()

```
uint Rti.Types.Dynamic.StructType.GetCdrSerializedSampleMaxSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the maximum serialized size of samples of this type using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_max_size`

9.287.2.6 GetCdrSerializedSampleMinSize()

```
uint Rti.Types.Dynamic.StructType.GetCdrSerializedSampleMinSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the minimum serialized size of samples of this type using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_min_size`

9.287.2.7 GetCdrSerializedSampleKeyMaxSize()

```
uint Rti.Types.Dynamic.StructType.GetCdrSerializedSampleKeyMaxSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the maximum serialized size of the data type's key using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_key_max_size`

9.287.3 Property Documentation

9.287.3.1 Parent

StructType Rti.Types.Dynamic.StructType.Parent [get]

The base type or null if this struct doesn't have one.

Implements **Omg.Types.Dynamic.IStructType** (p. 680).

9.287.3.2 ExtensibilityKind

ExtensibilityKind Rti.Types.Dynamic.StructType.ExtensibilityKind [get]

The value for the IDL extensibility kind.

Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

9.287.3.3 Members

```
IEnumerable< StructMember> Rti.Types.Dynamic.StructType.Members  [get]
```

The data members.

Implements **Omg.Types.Dynamic.IStructType** (p. 681).

9.287.3.4 MemberCount

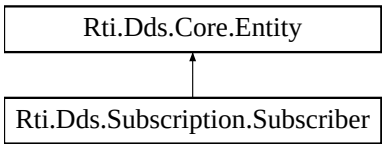
```
uint Rti.Types.Dynamic.StructType.MemberCount  [get]
```

The number of data members.

9.288 Rti.Dds.Subscription.Subscriber Class Reference

A subscriber is the object responsible for actually receiving data from a subscription.

Inheritance diagram for Rti.Dds.Subscription.Subscriber:



Public Member Functions

- **DataReader**< T > **CreateDataReader**< **T** > (**Topic**< T > topic)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS.*
- **DataReader**< T > **CreateDataReader**< **T** > (**Topic**< T > topic, Action< **DataReader**< T > > preEnable↩ Action)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS.*
- **DataReader**< T > **CreateDataReader**< **T** > (**Topic**< T > topic, **DataReaderQos** qos, Action< **Data**↩ **Reader**< T > > preEnableAction)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090).*
- **DataReader**< T > **CreateDataReader**< **T** > (**ContentFilteredTopic**< T > cft)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS.*
- **DataReader**< T > **CreateDataReader**< **T** > (**ContentFilteredTopic**< T > cft, Action< **DataReader**< T > > preEnableAction)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS*
- **DataReader**< T > **CreateDataReader**< **T** > (**ContentFilteredTopic**< T > cft, **DataReaderQos** qos, Action< **DataReader**< T > > preEnableAction)

*Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS*

- **DataReader**< T > **CreateDataReader**< **T** > (**Topic**< T > topic, **DataReaderQos** qos)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), providing the QoS.*
- **DataReader**< T > **CreateDataReader**< **T** > (**ContentFilteredTopic**< T > cft, **DataReaderQos** qos)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), providing the QoS.*
- **AnyDataReader CreateDataReader** (**ITopicDescription** topic)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), without knowing the type at compile time, using default QoS.*
- **AnyDataReader CreateDataReader** (**ITopicDescription** topic, **DataReaderQos** qos)

  *Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), without knowing the type at compile time, and providing the QoS.*
- **DataReader**< T > **CreateDataReader**< **T** > (**ITopicDescription** topicDescription, Action< **DataReader**< T > > preEnableAction)

  Creates a DataReader<T> that will be attached and belong to this subscriber.
- **DataReader**< T > **CreateDataReader**< **T** > (**ITopicDescription** topicDescription, **DataReaderQos** qos)

  Creates a DataReader<T> that will be attached and belong to this subscriber.
- **DataReader**< T > **CreateDataReader**< **T** > (**ITopicDescription** topicDescription, **DataReaderQos** qos, Action< **DataReader**< T > > preEnableAction)

  Creates a DataReader<T> that will be attached and belong to this subscriber.
- **DataReader**< T > **LookupDataReader**< **T** > (string topicName)

  *Retrieves a **DataReader** (p. 243) by looking it up by topic name*
- **AnyDataReader LookupDataReader** (string topicName)

  *Retrieves a **DataReader** (p. 243) by looking it up by topic name*
- **AnyDataReader LookupDataReaderByName** (string readerName)

  *Retrieves a **DataReader** (p. 243) contained within this looking it up by the **DataReader** (p. 243) entity name.*
- **CoherentAccess BeginAccess** ()

  Indicates that the application is about to access the data samples in any of the DataReader<T> objects attached to this subscriber.
- void **EndAccess** ()

  *Indicates that the application has finished accessing the data samples in DataReader<T> objects managed by this (alternative to **CoherentAccess.Dispose** (p. 217).)*
- IEnumerable< **AnyDataReader** > **GetDataReaders** ()

  *Returns all readers (equivalent to the property **DataReaders** (p. 1100)).*
- IEnumerable< **AnyDataReader** > **GetDataReaders** (**DataState** state)

  Returns the DataReader<T> objects that contain data samples with the specified state.
- void **NotifyDataReaders** ()

  *When a subscriber handles the **DataOnReaders** (p. 1100) event, the **AnyDataReader.DataAvailable** (p. 159) event is not triggered on its contained readers until this function is called.*
- override void **ResetEvents** (**StatusMask** eventsToRemove=StatusMask.All)

  Stop notifying of events and remove their event handlers
- void **DisposeContainedEntities** ()

  *Disposes all the entities that were created by this **Subscriber** (p. 1090).*

Static Public Attributes

- const string **SubscriptionBuiltinTopicName** = "DCPSSubscription"

  *The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about Subscriptions discovered by a participant.*
- const string **PublicationBuiltinTopicName** = "DCPSPublication"

  *The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about Publications discovered by a participant.*
- const string **TopicBuiltinTopicName** = "DCPSTopic"

  *The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about **Topics** (p. 118) discovered by a participant.*
- const string **ParticipantBuiltinTopicName** = "DCPSParticipant"

  *The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about participants discovered by another participant.*

Properties

- **DataReaderQos DefaultDataReaderQos** `[get, set]`

  *Copies the default **DataReaderQos** (p. 271) values into the provided **DataReaderQos** (p. 271) instance.*
- **SubscriberQos Qos** `[get, set]`

  Gets or sets the subscriber QoS.
- **DomainParticipant DomainParticipant** `[get]`

  *Returns the DomainParticipant to which this **Subscriber** (p. 1090) belongs.*
- IEnumerable< **AnyDataReader** > **DataReaders** `[get]`

  *Retrieve all the DataReaders created from this **Subscriber** (p. 1090)*
- **DataOnReadersEventHandler DataOnReaders**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataOnReaders** (p. 108) status changes on this **Subscriber** (p. 1090).*
- **SubscriptionMatchedEventHandler SubscriptionMatched**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SubscriptionMatched** (p. 109) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.*
- **DataAvailableEventHandler DataAvailable**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataAvailable** (p. 109) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.*
- **LivelinessChangedEventHandler LivelinessChanged**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessChanged** (p. 109) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.*
- **RequestedDeadlineMissedEventHandler RequestedDeadlineMissed**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedDeadlineMissed** (p. 108) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.*
- **RequestedIncompatibleQosEventHandler RequestedIncompatibleQos**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedIncompatibleQos** (p. 108) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.*
- **SampleLostEventHandler SampleLost**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleLost** (p. 108) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.*
- **SampleRejectedEventHandler SampleRejected**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleRejected** (p. 108) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.*

9.288.1 Detailed Description

A subscriber is the object responsible for actually receiving data from a subscription.

9.288.2 Member Function Documentation

9.288.2.1 CreateDataReader< T >() [1/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            Topic< T > topic ) [inline]
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS.

Parameters

topic	The Topic<T> that the **DataReader** (p. 243) will be associated with.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.2 CreateDataReader< T >() [2/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            Topic< T > topic,
           Action< DataReader< T > > preEnableAction )
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS.

Parameters

topic	The Topic<T> that the **DataReader** (p. 243) will be associated with.
preEnableAction	An action that allows adding handlers to reader events before the reader is enabled.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.3 CreateDataReader< T >() [3/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            Topic< T > topic,
            DataReaderQos qos,
           Action< DataReader< T > > preEnableAction )
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090).

Parameters

topic	The Topic<T> that the **DataReader** (p. 243) will be associated with.
qos	The reader QoS.
preEnableAction	An action that allows adding handlers to reader events before the reader is enabled.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.4 CreateDataReader< T >() [4/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            ContentFilteredTopic< T > cft ) [inline]
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS.

Parameters

cft	The ContentFilteredTopic<T> that the **DataReader** (p. 243) will be associated with

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.5 CreateDataReader< T >() [5/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            ContentFilteredTopic< T > cft,
           Action< DataReader< T > > preEnableAction )
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS

Parameters

cft	The ContentFilteredTopic<T> that the **DataReader** (p. 243) will be associated with.
preEnableAction	An action that allows adding handlers to reader events before the reader is enabled.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.6 CreateDataReader< T >() [6/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            ContentFilteredTopic< T > cft,
            DataReaderQos qos,
           Action< DataReader< T > > preEnableAction )
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), using default QoS

Parameters

cft	The ContentFilteredTopic<T> that the **DataReader** (p. 243) will be associated with.
qos	The reader QoS.
preEnableAction	An action that allows adding handlers to reader events before the reader is enabled.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.7 CreateDataReader< T >() [7/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            Topic< T > topic,
            DataReaderQos qos ) [inline]
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), providing the QoS.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.8 CreateDataReader< T >() [8/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            ContentFilteredTopic< T > cft,
            DataReaderQos qos ) [inline]
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), providing the QoS.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.9 CreateDataReader() [1/2]

```
AnyDataReader Rti.Dds.Subscription.Subscriber.CreateDataReader (
            ITopicDescription topic ) [inline]
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), without knowing the type at compile time, using default QoS.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.10 CreateDataReader() [2/2]

```
AnyDataReader Rti.Dds.Subscription.Subscriber.CreateDataReader (
            ITopicDescription topic,
            DataReaderQos qos ) [inline]
```

Creates a **DataReader** (p. 243) that will be attached and belong to this **Subscriber** (p. 1090), without knowing the type at compile time, and providing the QoS.

The full documentation is available in the C API: DDS_Subscriber_create_datareader

9.288.2.11 CreateDataReader< T >() [9/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            ITopicDescription topicDescription,
           Action< DataReader< T > > preEnableAction )
```

Creates a DataReader<T> that will be attached and belong to this subscriber.

Parameters

topicDescription	The ITopicDescription that the reader will be associated with.
preEnableAction	An action that allows adding handlers to reader events before the reader is enabled.

9.288.2.12 CreateDataReader< T >() [10/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            ITopicDescription topicDescription,
            DataReaderQos qos )
```

Creates a DataReader<T> that will be attached and belong to this subscriber.

Parameters

topicDescription	The ITopicDescription that the reader will be associated with.
qos	The reader QoS.

9.288.2.13 CreateDataReader< T >() [11/11]

```
DataReader< T > Rti.Dds.Subscription.Subscriber.CreateDataReader< T > (
            ITopicDescription topicDescription,
            DataReaderQos qos,
           Action< DataReader< T > > preEnableAction )
```

Creates a DataReader<T> that will be attached and belong to this subscriber.

Parameters

topicDescription	The ITopicDescription that the reader will be associated with.
qos	The reader QoS
preEnableAction	An action that allows adding handlers to reader events before the reader is enabled.

9.288.2.14 LookupDataReader< T >()

```
DataReader< T > Rti.Dds.Subscription.Subscriber.LookupDataReader< T > (
           string topicName )
```

Retrieves a **DataReader** (p. 243) by looking it up by topic name

Returns

A reader with that topic name or null if none exist

The full documentation is available in the C API: DDS_Subscriber_lookup_datareader

9.288.2.15 LookupDataReader()

```
AnyDataReader Rti.Dds.Subscription.Subscriber.LookupDataReader (
            string topicName )  [inline]
```

Retrieves a **DataReader** (p. 243) by looking it up by topic name

Returns

A reader with that topic name or null if none exist

The full documentation is available in the C API: DDS_Subscriber_lookup_datareader

9.288.2.16 LookupDataReaderByName()

```
AnyDataReader Rti.Dds.Subscription.Subscriber.LookupDataReaderByName (
            string readerName )  [inline]
```

Retrieves a **DataReader** (p. 243) contained within this looking it up by the **DataReader** (p. 243) entity name.

Returns

A reader with that entity name or null if none exist

The full documentation is available in the C API: DDS_Subscriber_lookup_datareader_by_name

9.288.2.17 BeginAccess()

```
CoherentAccess Rti.Dds.Subscription.Subscriber.BeginAccess ( )  [inline]
```

Indicates that the application is about to access the data samples in any of the DataReader<T> objects attached to this subscriber.

Returns

An object whose disposal indicates the end of the coherent access

The full documentation is available in the C API: DDS_Subscriber_begin_access

9.288.2.18 EndAccess()

```
void Rti.Dds.Subscription.Subscriber.EndAccess ( )
```

Indicates that the application has finished accessing the data samples in DataReader<T> objects managed by this (alternative to **CoherentAccess.Dispose** (p. 217).)

The full documentation is available in the C API: DDS_Subscriber_end_access

9.288.2.19 GetDataReaders() [1/2]

```
IEnumerable< AnyDataReader > Rti.Dds.Subscription.Subscriber.GetDataReaders ( )
```

Returns all readers (equivalent to the property **DataReaders** (p. 1100)).

9.288.2.20 GetDataReaders() [2/2]

```
IEnumerable< AnyDataReader > Rti.Dds.Subscription.Subscriber.GetDataReaders (
            DataState state )
```

Returns the DataReader<T> objects that contain data samples with the specified state.

The full documentation is available in the C API: DDS_Subscriber_get_datareaders

9.288.2.21 NotifyDataReaders()

```
void Rti.Dds.Subscription.Subscriber.NotifyDataReaders ( )
```

When a subscriber handles the **DataOnReaders** (p. 1100) event, the **AnyDataReader.DataAvailable** (p. 159) event is not triggered on its contained readers until this function is called.

The full documentation is available in the C API: DDS_Subscriber_notify_datareaders

9.288.2.22 ResetEvents()

```
override void Rti.Dds.Subscription.Subscriber.ResetEvents (
            StatusMask eventsToRemove = StatusMask.All )  [inline], [virtual]
```

Stop notifying of events and remove their event handlers

Parameters

eventsToRemove	Selects which events will stop receiving notifications. Use StatusMask.All to remove all event handlers.

Implements **Rti.Dds.Core.Entity** (p. 597).

9.288.2.23 DisposeContainedEntities()

```
void Rti.Dds.Subscription.Subscriber.DisposeContainedEntities ( )  [inline]
```

Disposes all the entities that were created by this **Subscriber** (p. 1090).

The full documentation is available in the C API: `DDS_Subscriber_delete_contained_entities`

9.288.3 Field Documentation

9.288.3.1 SubscriptionBuiltinTopicName

```
const string Rti.Dds.Subscription.Subscriber.SubscriptionBuiltinTopicName = "DCPSSubscription"
[static]
```

The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about Subscriptions discovered by a participant.

See **Accessing Information on Entity Discovery** (p. 40)

9.288.3.2 PublicationBuiltinTopicName

```
const string Rti.Dds.Subscription.Subscriber.PublicationBuiltinTopicName = "DCPSPublication"  [static]
```

The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about Publications discovered by a participant.

See **Accessing Information on Entity Discovery** (p. 40)

9.288.3.3 TopicBuiltinTopicName

```
const string Rti.Dds.Subscription.Subscriber.TopicBuiltinTopicName = "DCPSTopic"  [static]
```

The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about **Topics** (p. 118) discovered by a participant.

See **Accessing Information on Entity Discovery** (p. 40)

9.288.3.4 ParticipantBuiltinTopicName

```
const string Rti.Dds.Subscription.Subscriber.ParticipantBuiltinTopicName = "DCPSParticipant"  [static]
```

The topic name of the **DataReader** (p. 243) in DomainParticipant.BuiltinSubscriber that provides information about participants discovered by another participant.

See **Accessing Information on Entity Discovery** (p. 40)

9.288.4 Property Documentation

9.288.4.1 DefaultDataReaderQos

DataReaderQos Rti.Dds.Subscription.Subscriber.DefaultDataReaderQos [get], [set]

Copies the default **DataReaderQos** (p. 271) values into the provided **DataReaderQos** (p. 271) instance.

The full documentation is available in the C API: DDS_Subscriber_get_default_datareader_qos

9.288.4.2 Qos

SubscriberQos Rti.Dds.Subscription.Subscriber.Qos [get], [set]

Gets or sets the subscriber QoS.

The full documentation is available in the C API: DDS_Subscriber_get_qos

9.288.4.3 DomainParticipant

DomainParticipant Rti.Dds.Subscription.Subscriber.DomainParticipant [get]

Returns the DomainParticipant to which this **Subscriber** (p. 1090) belongs.

The full documentation is available in the C API: DDS_Subscriber_get_participant

9.288.4.4 DataReaders

IEnumerable< **AnyDataReader**> Rti.Dds.Subscription.Subscriber.DataReaders [get]

Retrieve all the DataReaders created from this **Subscriber** (p. 1090)

The full documentation is available in the C API: DDS_Subscriber_get_all_datareaders

9.288.4.5 DataOnReaders

DataOnReadersEventHandler Rti.Dds.Subscription.Subscriber.DataOnReaders [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataOnReaders** (p. 108) status changes on this **Subscriber** (p. 1090).

9.288.4.6 SubscriptionMatched

SubscriptionMatchedEventHandler Rti.Dds.Subscription.Subscriber.SubscriptionMatched [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SubscriptionMatched** (p. 109) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.

9.288.4.7 DataAvailable

DataAvailableEventHandler Rti.Dds.Subscription.Subscriber.DataAvailable [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.DataAvailable** (p. 109) status changes on any Data↩ Reader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.

9.288.4.8 LivelinessChanged

LivelinessChangedEventHandler Rti.Dds.Subscription.Subscriber.LivelinessChanged [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.LivelinessChanged** (p. 109) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.

9.288.4.9 RequestedDeadlineMissed

RequestedDeadlineMissedEventHandler Rti.Dds.Subscription.Subscriber.RequestedDeadlineMissed [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedDeadlineMissed** (p. 108) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.

9.288.4.10 RequestedIncompatibleQos

RequestedIncompatibleQosEventHandler Rti.Dds.Subscription.Subscriber.RequestedIncompatibleQos [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.RequestedIncompatibleQos** (p. 108) status changes on any DataReader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.

9.288.4.11 SampleLost

SampleLostEventHandler Rti.Dds.Subscription.Subscriber.SampleLost [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleLost** (p. 108) status changes on any Data↩ Reader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.

9.288.4.12 SampleRejected

SampleRejectedEventHandler Rti.Dds.Subscription.Subscriber.SampleRejected [add], [remove]

Event triggered when the **Rti.Dds.Core.Status.StatusMask.SampleRejected** (p. 108) status changes on any Data↩ Reader<T> created by this **Subscriber** (p. 1090) for which this event is not being monitored.

9.289 Rti.Dds.Subscription.SubscriberQos Class Reference

QoS policies supported by a **Subscriber** (p. 1090).

Inherits IEquatable< SubscriberQos >.

Public Member Functions

- **SubscriberQos WithPresentation** (**Presentation** policy)
  *Creates an instance with a new **Presentation** (p. 1109) policy.*
- **SubscriberQos WithPresentation** (Action< **PresentationBuilder** > build)
  *Creates a new instance with a new **Presentation** (p. 1109) policy as configured by a build action*
- **SubscriberQos WithPartition** (**Partition** policy)
  *Creates an instance with a new **Partition** (p. 1109) policy.*
- **SubscriberQos WithPartition** (Action< ImmutableList< string >.Builder > build)
  *Creates a new instance with a new **Partition** (p. 1109) policy as configured by a build action*
- **SubscriberQos WithGroupData** (**GroupData** policy)
  *Creates an instance with a new **GroupData** (p. 1109) policy.*
- **SubscriberQos WithGroupData** (Action< ImmutableList< byte >.Builder > build)

*Creates a new instance with a new **GroupData** (p. 1109) policy as configured by a build action*

- **SubscriberQos WithEntityFactory** (**EntityFactory** policy)

  *Creates an instance with a new **EntityFactory** (p. 1109) policy.*
- **SubscriberQos WithSubscriberName** (**EntityName** policy)

  *Creates an instance with a new **SubscriberName** (p. 1110) policy.*
- **SubscriberQos WithSubscriberName** (Action< **EntityNameBuilder** > build)

  *Creates a new instance with a new **SubscriberName** (p. 1110) policy as configured by a build action*
- bool **Equals** (**SubscriberQos** other)

  Compares all the policies for equality
- override int **GetHashCode** ()

  Returns the hash code by combining that of each policy
- override bool **Equals** (object obj)

  Compares all the policies for equality
- override string **ToString** ()

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintFormat** format)

  Returns an XML representation of the QoS object.
- string **ToString** (**SubscriberQos** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintAll** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.

Properties

- static **SubscriberQos Default** = new **SubscriberQos**() `[get]`

  *Singleton containing the documented default value of a **SubscriberQos** (p. 1102)*
- **Presentation Presentation** `[get]`

  *Gets the **Presentation** (p. 1109) policy.*
- **Partition Partition** `[get]`

  *Gets the **Partition** (p. 1109) policy.*
- **GroupData GroupData** `[get]`

  *Gets the **GroupData** (p. 1109) policy.*
- **EntityFactory EntityFactory** `[get]`

  *Gets the **EntityFactory** (p. 1109) policy.*
- **EntityName SubscriberName** `[get]`

  Gets the EntityName policy.

9.289.1 Detailed Description

QoS policies supported by a **Subscriber** (p. 1090).

The full documentation is available in the C API: `DDS_SubscriberQos`

9.289.2 Member Function Documentation

9.289.2.1 WithPresentation() [1/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithPresentation (
            Presentation policy )  [inline]
```

Creates an instance with a new **Presentation** (p. 1109) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.289.2.2 WithPresentation() [2/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithPresentation (
          Action< PresentationBuilder > build )
```

Creates a new instance with a new **Presentation** (p. 1109) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.289.2.3 WithPartition() [1/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithPartition (
            Partition policy )  [inline]
```

Creates an instance with a new **Partition** (p. 1109) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.289.2.4 WithPartition() [2/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithPartition (
            Action< ImmutableList< string >.Builder > build )
```

Creates a new instance with a new **Partition** (p. 1109) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.289.2.5 WithGroupData() [1/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithGroupData (
             GroupData policy )  [inline]
```

Creates an instance with a new **GroupData** (p. 1109) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.289.2.6 WithGroupData() [2/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithGroupData (
            Action< ImmutableList< byte >.Builder > build )
```

Creates a new instance with a new **GroupData** (p. 1109) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.289.2.7 WithEntityFactory()

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithEntityFactory (
            EntityFactory policy )  [inline]
```

Creates an instance with a new **EntityFactory** (p. 1109) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.289.2.8 WithSubscriberName() [1/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithSubscriberName (
            EntityName policy )  [inline]
```

Creates an instance with a new **SubscriberName** (p. 1110) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.289.2.9 WithSubscriberName() [2/2]

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.WithSubscriberName (
            Action< EntityNameBuilder > build )
```

Creates a new instance with a new **SubscriberName** (p. 1110) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.289.2.10 Equals() [1/2]

```
bool Rti.Dds.Subscription.SubscriberQos.Equals (
              SubscriberQos other )  [inline]
```

Compares all the policies for equality

9.289.2.11 GetHashCode()

```
override int Rti.Dds.Subscription.SubscriberQos.GetHashCode ( )  [inline]
```

Returns the hash code by combining that of each policy

9.289.2.12 Equals() [2/2]

```
override bool Rti.Dds.Subscription.SubscriberQos.Equals (
            object obj )
```

Compares all the policies for equality

9.289.2.13 ToString() [1/4]

```
override string Rti.Dds.Subscription.SubscriberQos.ToString ( )
```

Returns an XML representation of the QoS object.

The output is formatted using the default values for the QosPrintFormat and only QoS policies which differ from the documented default are included.

9.289.2.14 ToString() [2/4]

```
string Rti.Dds.Subscription.SubscriberQos.ToString (
            QosPrintFormat format )
```

Returns an XML representation of the QoS object.

Parameters

format	The baseQos profile.

This overload accepts a value for the baseQos. Only the differences between the **SubscriberQos** (p. 1102) object being printed and the baseQos are included in the output.

9.289.2.15 ToString() [3/4]

```
string Rti.Dds.Subscription.SubscriberQos.ToString (
            SubscriberQos baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	The baseQos profile.
format	the format used to configure the output. If not supplied the output is formatted using the default format.

This overload accepts a value for the baseQos. Only the differences between the **SubscriberQos** (p. 1102) object being printed and the baseQos are included in the output.

9.289.2.16 ToString() [4/4]

```
string Rti.Dds.Subscription.SubscriberQos.ToString (
            QosPrintAll baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	Used to indicate that the entire QoS object should be included in the output. The only value which should be provided for this argument is QosPrintAll.Value
format	The format used to configure the output. If not supplied, the output is formatted using the default format.

This overload accepts a parameter of type QosPrintAll. Unlike the other ToString overloads, the entire QoS object will be included in the output.

9.289.3 Property Documentation

9.289.3.1 Default

```
SubscriberQos Rti.Dds.Subscription.SubscriberQos.Default = new SubscriberQos() [static], [get]
```

Singleton containing the documented default value of a **SubscriberQos** (p. 1102)

This is a static value containing the documented default values for each policy. Use **Domain.DomainParticipant.↩ DefaultSubscriberQos** (p. 468) for the runtime default value that takes into consideration the current configuration.

9.289.3.2 Presentation

```
Presentation Rti.Dds.Subscription.SubscriberQos.Presentation [get]
```

Gets the **Presentation** (p. 1109) policy.

9.289.3.3 Partition

```
Partition Rti.Dds.Subscription.SubscriberQos.Partition [get]
```

Gets the **Partition** (p. 1109) policy.

9.289.3.4 GroupData

```
GroupData Rti.Dds.Subscription.SubscriberQos.GroupData [get]
```

Gets the **GroupData** (p. 1109) policy.

9.289.3.5 EntityFactory

```
EntityFactory Rti.Dds.Subscription.SubscriberQos.EntityFactory [get]
```

Gets the **EntityFactory** (p. 1109) policy.

9.289.3.6 SubscriberName

```
EntityName Rti.Dds.Subscription.SubscriberQos.SubscriberName [get]
```

Gets the EntityName policy.

9.290 Rti.Dds.Topics.SubscriptionBuiltinTopicData Class Reference

Entry created when a Subscription.DataReader<T> is discovered in association with its **Subscription.Subscriber** (p. 1090).

Inherits IEquatable< SubscriptionBuiltinTopicData >.

Public Member Functions

- **SubscriptionBuiltinTopicData** (in **BuiltinTopicKey** key)

  *Creates a new **SubscriptionBuiltinTopicData** (p. 1110) using a **BuiltinTopicKey** (p. 199).*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**SubscriptionBuiltinTopicData** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the data

Properties

- **BuiltinTopicKey Key** [get]

  DCPS key to distinguish entries
- **BuiltinTopicKey ParticipantKey** [get]

  DCPS key of the participant to which the DataReader belongs.
- string **TopicName** [get]

  Name of the related Topics.Topic<T>.
- string **TypeName** [get]

  Name of the type attached to the Topics.Topic<T>.
- **Durability Durability** [get]

  Policy of the corresponding DataReader
- **Deadline Deadline** [get]

  Policy of the corresponding DataReader
- **LatencyBudget LatencyBudget** [get]

  Policy of the corresponding DataReader
- **Liveliness Liveliness** [get]

  Policy of the corresponding DataReader
- **Reliability Reliability** [get]

  Policy of the corresponding DataReader
- **Ownership Ownership** [get]

  Policy of the corresponding DataReader
- **DestinationOrder DestinationOrder** [get]

  Policy of the corresponding DataReader
- **UserData UserData** [get]

  Policy of the corresponding DataReader
- **TimeBasedFilter TimeBasedFilter** [get]

  Policy of the corresponding DataReader
- **Presentation Presentation** [get]

  Policy of the Subscriber to which the DataReader belongs
- **Partition Partition** [get]

  Policy of the Subscriber to which the DataReader belongs
- **TopicData TopicData** [get]

  *Policy of the related **Topic** (p. 1145)*
- **GroupData GroupData** [get]

  Policy of the Subscriber to which the DataReader belongs
- **TypeConsistencyEnforcement TypeConsistency** [get]

  Policy of the corresponding DataReader
- **DataRepresentation Representation** [get]

  Data representation policy of the corresponding DataReader
- **DataTags DataTags** [get]

  Tags of the corresponding DataReader
- **DynamicType DynamicType** [get]

  *Type code information of the corresponding **Topic** (p. 1145)*
- **BuiltinTopicKey SubscriberKey** [get]

  DCPS key of the subscriber to which the DataReader belongs.
- **Property Property** [get]

Properties of the corresponding DataReader.

- ImmutableList< **Locator** > **UnicastLocators** [get]

  Custom unicast locators that the endpoint can specify. The default locators will be used if this is not specified.
- ImmutableList< **Locator** > **MulticastLocators** [get]

  Custom multicast locators that the endpoint can specify. The default locators will be used if this is not specified.
- **ContentFilterProperty ContentFilterProperty** [get]

  This field provides all the required information to enable content filtering on the Writer side.
- **Core.Guid VirtualGuid** [get]

  Virtual GUID associated with the DataReader.
- **Service Service** [get]

  Policy of the corresponding DataReader.
- Version **RtpsProtocolVersion** [get]

  Version number of the RTPS wire protocol used.
- **VendorId RtpsVendorId** [get]

  ID of vendor implementing the RTPS wire protocol.
- Version **ProductVersion** [get]

  This is a vendor specific parameter. It gives the current version of RTI Connext
- bool **DisablePositiveAcks** [get]

  This is a vendor specific parameter. Determines whether the corresponding DataReader sends positive acknowledgments for reliability.
- **EntityName SubscriptionName** [get]

  The subscription name and role name.

9.290.1 Detailed Description

Entry created when a Subscription.DataReader<T> is discovered in association with its **Subscription.Subscriber** (p. 1090).

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData

9.290.2 Constructor & Destructor Documentation

9.290.2.1 SubscriptionBuiltinTopicData()

```
Rti.Dds.Topics.SubscriptionBuiltinTopicData.SubscriptionBuiltinTopicData (
            in  BuiltinTopicKey key )
```

Creates a new **SubscriptionBuiltinTopicData** (p. 1110) using a **BuiltinTopicKey** (p. 199).

The rest of elements are not initialized. This constructor can be used to create a key holder for **Subscription.Data↩ Reader<T>.LookupInstance(T)** (p. 246).

9.290.3 Member Function Documentation

9.290.3.1 GetHashCode()

```
override int Rti.Dds.Topics.SubscriptionBuiltinTopicData.GetHashCode ( )
```

Gets the hash code

9.290.3.2 Equals() [1/2]

```
override bool Rti.Dds.Topics.SubscriptionBuiltinTopicData.Equals (
            object other )
```

Compares for equality

9.290.3.3 Equals() [2/2]

```
bool Rti.Dds.Topics.SubscriptionBuiltinTopicData.Equals (
             SubscriptionBuiltinTopicData other )  [inline]
```

Compares for equality

9.290.3.4 ToString()

```
override string Rti.Dds.Topics.SubscriptionBuiltinTopicData.ToString ( )  [inline]
```

Returns a readable summary of the data

9.290.4 Property Documentation

9.290.4.1 Key

BuiltinTopicKey Rti.Dds.Topics.SubscriptionBuiltinTopicData.Key [get]

DCPS key to distinguish entries

*The full documentation is available in the C API:*DDS_SubscriptionBuiltinTopicData_key

9.290.4.2 ParticipantKey

BuiltinTopicKey Rti.Dds.Topics.SubscriptionBuiltinTopicData.ParticipantKey [get]

DCPS key of the participant to which the DataReader belongs.

*The full documentation is available in the C API:*DDS_SubscriptionBuiltinTopicData_participant↩
_key

9.290.4.3 TopicName

string Rti.Dds.Topics.SubscriptionBuiltinTopicData.TopicName [get]

Name of the related Topics.Topic<T>.

*The full documentation is available in the C API:*DDS_SubscriptionBuiltinTopicData_topic_name

9.290.4.4 TypeName

string Rti.Dds.Topics.SubscriptionBuiltinTopicData.TypeName [get]

Name of the type attached to the Topics.Topic<T>.

*The full documentation is available in the C API:*DDS_SubscriptionBuiltinTopicData_type_name

9.290.4.5 Durability

Durability Rti.Dds.Topics.SubscriptionBuiltinTopicData.Durability [get]

Policy of the corresponding DataReader

*The full documentation is available in the C API:*DDS_SubscriptionBuiltinTopicData_durability

9.290.4.6 Deadline

Deadline Rti.Dds.Topics.SubscriptionBuiltinTopicData.Deadline [get]

Policy of the corresponding DataReader

*The full documentation is available in the C API:*DDS_SubscriptionBuiltinTopicData_deadline

9.290.4.7 LatencyBudget

LatencyBudget Rti.Dds.Topics.SubscriptionBuiltinTopicData.LatencyBudget [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_latency_budget

9.290.4.8 Liveliness

Liveliness Rti.Dds.Topics.SubscriptionBuiltinTopicData.Liveliness [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_liveliness

9.290.4.9 Reliability

Reliability Rti.Dds.Topics.SubscriptionBuiltinTopicData.Reliability [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_reliability

9.290.4.10 Ownership

Ownership Rti.Dds.Topics.SubscriptionBuiltinTopicData.Ownership [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_ownership

9.290.4.11 DestinationOrder

DestinationOrder Rti.Dds.Topics.SubscriptionBuiltinTopicData.DestinationOrder [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_destination_order

9.290.4.12 UserData

UserData Rti.Dds.Topics.SubscriptionBuiltinTopicData.UserData [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_user_data

9.290.4.13 TimeBasedFilter

TimeBasedFilter Rti.Dds.Topics.SubscriptionBuiltinTopicData.TimeBasedFilter [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_time_based↩
_filter

9.290.4.14 Presentation

Presentation Rti.Dds.Topics.SubscriptionBuiltinTopicData.Presentation [get]

Policy of the Subscriber to which the DataReader belongs

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_presentation

9.290.4.15 Partition

Partition Rti.Dds.Topics.SubscriptionBuiltinTopicData.Partition [get]

Policy of the Subscriber to which the DataReader belongs

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_partition

9.290.4.16 TopicData

TopicData Rti.Dds.Topics.SubscriptionBuiltinTopicData.TopicData [get]

Policy of the related **Topic** (p. 1145)

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_topic_data

9.290.4.17 GroupData

GroupData Rti.Dds.Topics.SubscriptionBuiltinTopicData.GroupData [get]

Policy of the Subscriber to which the DataReader belongs

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_group_data

9.290.4.18 TypeConsistency

TypeConsistencyEnforcement Rti.Dds.Topics.SubscriptionBuiltinTopicData.TypeConsistency [get]

Policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_type_↩ consistency

9.290.4.19 Representation

DataRepresentation Rti.Dds.Topics.SubscriptionBuiltinTopicData.Representation [get]

Data representation policy of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_representation

9.290.4.20 DataTags

DataTags Rti.Dds.Topics.SubscriptionBuiltinTopicData.DataTags [get]

Tags of the corresponding DataReader

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_data_tags

9.290.4.21 DynamicType

DynamicType Rti.Dds.Topics.SubscriptionBuiltinTopicData.DynamicType [get]

Type code information of the corresponding **Topic** (p. 1145)

The type information if available, or null if it's not available

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_type_code

9.290.4.22 SubscriberKey

BuiltinTopicKey Rti.Dds.Topics.SubscriptionBuiltinTopicData.SubscriberKey [get]

DCPS key of the subscriber to which the DataReader belongs.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_subscriber_key

9.290.4.23 Property

Property Rti.Dds.Topics.SubscriptionBuiltinTopicData.Property [get]

Properties of the corresponding DataReader.

The full documentation is available in the C API: property_qos

9.290.4.24 UnicastLocators

ImmutableList< **Locator**> Rti.Dds.Topics.SubscriptionBuiltinTopicData.UnicastLocators [get]

Custom unicast locators that the endpoint can specify. The default locators will be used if this is not specified.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_unicast_locators

9.290.4.25 MulticastLocators

ImmutableList< **Locator**> Rti.Dds.Topics.SubscriptionBuiltinTopicData.MulticastLocators [get]

Custom multicast locators that the endpoint can specify. The default locators will be used if this is not specified.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_multicast_locators

9.290.4.26 ContentFilterProperty

ContentFilterProperty Rti.Dds.Topics.SubscriptionBuiltinTopicData.ContentFilterProperty [get]

This field provides all the required information to enable content filtering on the Writer side.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_content_filter_property

9.290.4.27 VirtualGuid

Core.Guid Rti.Dds.Topics.SubscriptionBuiltinTopicData.VirtualGuid [get]

Virtual GUID associated with the DataReader.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_virtual_guid

9.290.4.28 Service

Service Rti.Dds.Topics.SubscriptionBuiltinTopicData.Service [get]

Policy of the corresponding DataReader.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_service

9.290.4.29 RtpsProtocolVersion

Version Rti.Dds.Topics.SubscriptionBuiltinTopicData.RtpsProtocolVersion [get]

Version number of the RTPS wire protocol used.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_rtps_↩ protocol_version

9.290.4.30 RtpsVendorId

VendorId Rti.Dds.Topics.SubscriptionBuiltinTopicData.RtpsVendorId [get]

ID of vendor implementing the RTPS wire protocol.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_rtps_↩ vendor_id

9.290.4.31 ProductVersion

Version Rti.Dds.Topics.SubscriptionBuiltinTopicData.ProductVersion [get]

This is a vendor specific parameter. It gives the current version of RTI Connext

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_product_↩ version

9.290.4.32 DisablePositiveAcks

```
bool Rti.Dds.Topics.SubscriptionBuiltinTopicData.DisablePositiveAcks [get]
```

This is a vendor specific parameter. Determines whether the corresponding DataReader sends positive acknowledgments for reliability.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_disable_positive_acks

9.290.4.33 SubscriptionName

```
EntityName Rti.Dds.Topics.SubscriptionBuiltinTopicData.SubscriptionName [get]
```

The subscription name and role name.

The full documentation is available in the C API: DDS_SubscriptionBuiltinTopicData_subscription_name

9.291 Rti.Dds.Core.Status.SubscriptionMatchedStatus Class Reference

Indicates that the Subscription.DataReader<T> discovered a matching Publication.DataWriter<T>.

Inherits IEquatable< SubscriptionMatchedStatus >.

Public Member Functions

- override int **GetHashCode** ()
  Gets the hash code.
- override bool **Equals** (object other)
  Compares for equality.
- bool **Equals** (**SubscriptionMatchedStatus** other)
  Compares for equality.
- override string **ToString** ()
  Returns a readable summary of the status

Properties

- **EventCount**< int > **TotalCount** [get]
  The total cumulative number of times that this DataReader discovered a "match" with a DataWriter.
- **EventCount**< int > **CurrentCount** [get]
  The current number of DataWriters with which the DataReader is matched.
- int **CurrentCountPeak** [get]
  Greatest number of DataWriters that matched this DataReader simultaneously.
- **InstanceHandle LastPublicationHandle** [get]
  *This **InstanceHandle** (p. 661) can be used to look up which remote DataWriter was the last to cause this DataReader's status to change, using **Subscription.AnyDataReader.GetMatchedPublicationData(in InstanceHandle)** (p. 152)*

9.291.1 Detailed Description

Indicates that the Subscription.DataReader<T> discovered a matching Publication.DataWriter<T>.

The full documentation is available in the C API: `DDS_SubscriptionMatchedStatus`

9.291.2 Member Function Documentation

9.291.2.1 GetHashCode()

```
override int Rti.Dds.Core.Status.SubscriptionMatchedStatus.GetHashCode ( )  [inline]
```

Gets the hash code.

9.291.2.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Status.SubscriptionMatchedStatus.Equals (
            object other )
```

Compares for equality.

9.291.2.3 Equals() [2/2]

```
bool Rti.Dds.Core.Status.SubscriptionMatchedStatus.Equals (
             SubscriptionMatchedStatus other )  [inline]
```

Compares for equality.

9.291.2.4 ToString()

```
override string Rti.Dds.Core.Status.SubscriptionMatchedStatus.ToString ( )
```

Returns a readable summary of the status

9.291.3 Property Documentation

9.291.3.1 TotalCount

EventCount<int> Rti.Dds.Core.Status.SubscriptionMatchedStatus.TotalCount [get]

The total cumulative number of times that this DataReader discovered a "match" with a DataWriter.

The full documentation is available in the C API: DDS_SubscriptionMatchedStatus_total_count

9.291.3.2 CurrentCount

EventCount<int> Rti.Dds.Core.Status.SubscriptionMatchedStatus.CurrentCount [get]

The current number of DataWriters with which the DataReader is matched.

The full documentation is available in the C API: DDS_SubscriptionMatchedStatus_current_count

9.291.3.3 CurrentCountPeak

int Rti.Dds.Core.Status.SubscriptionMatchedStatus.CurrentCountPeak [get]

Greatest number of DataWriters that matched this DataReader simultaneously.

The full documentation is available in the C API: DDS_SubscriptionMatchedStatus_current_count↩
_peak

9.291.3.4 LastPublicationHandle

InstanceHandle Rti.Dds.Core.Status.SubscriptionMatchedStatus.LastPublicationHandle [get]

This **InstanceHandle** (p. 661) can be used to look up which remote DataWriter was the last to cause this DataReader's status to change, using **Subscription.AnyDataReader.GetMatchedPublicationData(in InstanceHandle)** (p. 152)

The full documentation is available in the C API: DDS_SubscriptionMatchedStatus_last_↩
publication_handle

9.292 Rti.Dds.Publication.SuspendedPublication Struct Reference

A disposable object returned when a publication is temporarily suspended with **Publisher.SuspendPublications** (p. 889) and whose **Dispose** (p. 1123) method resumes it.

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()

  Ends the temporary suspension (resumes it)

Properties

- **Publisher RelatedPublisher** [get]

  The publisher that was suspended

9.292.1 Detailed Description

A disposable object returned when a publication is temporarily suspended with **Publisher.SuspendPublications** (p. 889) and whose **Dispose** (p. 1123) method resumes it.

9.292.2 Member Function Documentation

9.292.2.1 Dispose()

```
void Rti.Dds.Publication.SuspendedPublication.Dispose ( )
```

Ends the temporary suspension (resumes it)

9.292.3 Property Documentation

9.292.3.1 RelatedPublisher

```
Publisher Rti.Dds.Publication.SuspendedPublication.RelatedPublisher [get]
```

The publisher that was suspended

9.293 Rti.Dds.Core.Policy.SystemResourceLimits Class Reference

Configures DomainParticipant-independent resources used by RTI Connext. Mainly used to change the maximum number of DomainParticipant entities that can be created within a single process (address space).

Inherits IEquatable< SystemResourceLimits >.

Public Member Functions

- **SystemResourceLimits** (int maxObjectsPerThread)

  *Creates a new **SystemResourceLimits** (p. 1123) instance.*
- **SystemResourceLimits** (int maxObjectsPerThread, int initialObjectsPerThread)

  *Creates a new **SystemResourceLimits** (p. 1123) instance.*
- **SystemResourceLimits With** (Action< **SystemResourceLimitsBuilder** > build)

  *Creates a new **SystemResourceLimits** (p. 1123) with a set of changes specified in an Action*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Gets the hash code
- bool **Equals** (**SystemResourceLimits** other)

  Compares for equality

Properties

- int **MaxObjectsPerThread** `[get]`

  Gets the value of MaxObjectsPerThread
- int **InitialObjectsPerThread** `[get]`

  Gets the value of InitialObjectsPerThread
- static **SystemResourceLimits Default** = new **SystemResourceLimits**(261120, 1024) `[get]`

  *Singleton containing the default value of a **SystemResourceLimits** (p. 1123)*

9.293.1 Detailed Description

Configures DomainParticipant-independent resources used by RTI Connext. Mainly used to change the maximum number of DomainParticipant entities that can be created within a single process (address space).

The full documentation is available in the C API: `DDS_SystemResourceLimitsQosPolicy`

9.293.2 Constructor & Destructor Documentation

9.293.2.1 SystemResourceLimits() [1/2]

```
Rti.Dds.Core.Policy.SystemResourceLimits.SystemResourceLimits (
            int maxObjectsPerThread )  [inline]
```

Creates a new **SystemResourceLimits** (p. 1123) instance.

9.293.2.2 SystemResourceLimits() [2/2]

```
Rti.Dds.Core.Policy.SystemResourceLimits.SystemResourceLimits (
            int maxObjectsPerThread,
            int initialObjectsPerThread )  [inline]
```

Creates a new **SystemResourceLimits** (p. 1123) instance.

9.293.3 Member Function Documentation

9.293.3.1 With()

```
SystemResourceLimits Rti.Dds.Core.Policy.SystemResourceLimits.With (
            Action< SystemResourceLimitsBuilder > build )  [inline]
```

Creates a new **SystemResourceLimits** (p. 1123) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the values of this **SystemResourceLimits** (p. 1123).

Returns

A new **SystemResourceLimits** (p. 1123) with the changes applied by the Action

9.293.3.2 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.SystemResourceLimits.Equals (
            object other )
```

Compares for equality

9.293.3.3 GetHashCode()

```
override int Rti.Dds.Core.Policy.SystemResourceLimits.GetHashCode ( )  [inline]
```

Gets the hash code

9.293.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.SystemResourceLimits.Equals (
            SystemResourceLimits other )  [inline]
```

Compares for equality

9.293.4 Property Documentation

9.293.4.1 MaxObjectsPerThread

```
int Rti.Dds.Core.Policy.SystemResourceLimits.MaxObjectsPerThread  [get]
```

Gets the value of MaxObjectsPerThread

The full documentation is available in the C API: DDS_SystemResourceLimitsQosPolicy_max_objects_per_thread

9.293.4.2 InitialObjectsPerThread

```
int Rti.Dds.Core.Policy.SystemResourceLimits.InitialObjectsPerThread  [get]
```

Gets the value of InitialObjectsPerThread

The full documentation is available in the C API: DDS_SystemResourceLimitsQosPolicy_initial_objects_per_thread

9.293.4.3 Default

```
 SystemResourceLimits Rti.Dds.Core.Policy.SystemResourceLimits.Default = new  SystemResourceLimits(261120, 1024)  [static], [get]
```

Singleton containing the default value of a **SystemResourceLimits** (p. 1123)

9.294 Rti.Dds.Core.Policy.SystemResourceLimitsBuilder Class Reference

A modifiable type used to create an immutable **SystemResourceLimits** (p. 1123)

Public Member Functions

- **SystemResourceLimitsBuilder** (**SystemResourceLimits** data)

  Creates a builder with the values of an existing immutable instance
- **SystemResourceLimits Build** ()

  *Creates a immutable object (**SystemResourceLimits** (p. 1123)) from this one.*

Properties

- int **MaxObjectsPerThread** `[get, set]`

  Gets or sets the value of MaxObjectsPerThread
- int **InitialObjectsPerThread** `[get, set]`

  Gets or sets the value of InitialObjectsPerThread

9.294.1 Detailed Description

A modifiable type used to create an immutable **SystemResourceLimits** (p. 1123)

9.294.2 Constructor & Destructor Documentation

9.294.2.1 SystemResourceLimitsBuilder()

```
Rti.Dds.Core.Policy.SystemResourceLimitsBuilder.SystemResourceLimitsBuilder (
            SystemResourceLimits data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.294.3 Member Function Documentation

9.294.3.1 Build()

```
SystemResourceLimits Rti.Dds.Core.Policy.SystemResourceLimitsBuilder.Build ( )
```

Creates a immutable object (**SystemResourceLimits** (p. 1123)) from this one.

9.294.4 Property Documentation

9.294.4.1 MaxObjectsPerThread

```
int Rti.Dds.Core.Policy.SystemResourceLimitsBuilder.MaxObjectsPerThread  [get], [set]
```

Gets or sets the value of MaxObjectsPerThread

The full documentation is available in the C API: DDS_SystemResourceLimitsQosPolicy_max_objects_per_thread

9.294.4.2 InitialObjectsPerThread

```
int Rti.Dds.Core.Policy.SystemResourceLimitsBuilder.InitialObjectsPerThread  [get], [set]
```

Gets or sets the value of InitialObjectsPerThread

The full documentation is available in the C API: DDS_SystemResourceLimitsQosPolicy_initial_objects_per_thread

9.295 Rti.Dds.Core.ThreadContext Class Reference

Utility (p. 123) that cleans up memory used by Connext on the thread.

Inherits IDisposable.

Public Member Functions

- void **Dispose** ()

  *Disposes **ThreadContext** (p. 1128), releasing memory used by Connext on the thread.*

9.295.1 Detailed Description

Utility (p. 123) that cleans up memory used by Connext on the thread.

Use **ServiceEnvironment.GetThreadContext()** (p. 1057) to obtain an instance of this type in a thread function before any Connext API is called. The disposal of said instance will ensure memory used by Connext on the thread will be freed. This is only required on platforms that do not support automatic thread-specific storage (TSS) cleanup. Refer to the Platform Notes to see if your platform supports automatic TSS cleanup. It will be mentioned in the 'Thread Configuration' sub-section of the platform you are using.

```
void myThreadFunction()
{
    using (ServiceEnvironment.Instance.GetThreadContext())
    {
        // Use DDS API within this scope
    }
}
```

9.295.2 Member Function Documentation

9.295.2.1 Dispose()

```
void Rti.Dds.Core.ThreadContext.Dispose ( )
```

Disposes **ThreadContext** (p. 1128), releasing memory used by Connext on the thread.

This method should be called last in the thread. This is only required on platforms that do not support automatic thread-specific storage (TSS) cleanup. Refer to the `Platform Notes` to see if your platform supports automatic TSS cleanup. It will be mentioned in the 'Thread Configuration' sub-section of the platform you are using.

See `Unregistering Threads`, in the Core Libraries User's Manual, for the equivalent API call in each of the supported language bindings.

9.296 Rti.Dds.Core.Policy.ThreadSettings Class Reference

The properties of a thread of execution.

Inherits IEquatable< ThreadSettings >.

Public Member Functions

- **ThreadSettings With** (Action< **ThreadSettingsBuilder** > build)
  *Creates a new **ThreadSettings** (p. 1129) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**ThreadSettings** other)
  Compares for equality

Properties

- **ThreadSettingsKind Mask** `[get]`
  Describes the type of thread.
- int **Priority** `[get]`
  Thread priority.
- int **StackSize** `[get]`
  The thread stack-size.
- ImmutableList< int > **CpuList** `[get]`
  The list of processors on which the thread(s) may run.
- **CpuRotationKind CpuRotation** `[get]`
  Determines how processor affinity is applied to multiple threads.
- static **ThreadSettings Default** = CreateDefault() `[get]`
  *Singleton containing the default value of a **ThreadSettings** (p. 1129)*

9.296.1 Detailed Description

The properties of a thread of execution.

The full documentation is available in the `C API:`DDS_ThreadSettings_t

9.296.2 Member Function Documentation

9.296.2.1 With()

```
ThreadSettings Rti.Dds.Core.Policy.ThreadSettings.With (
            Action< ThreadSettingsBuilder > build )  [inline]
```

Creates a new **ThreadSettings** (p. 1129) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **ThreadSettings** (p. 1129).

Returns

A new **ThreadSettings** (p. 1129) with the changes applied by the Action

9.296.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.ThreadSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.296.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.ThreadSettings.Equals (
            object other )
```

Compares for equality

9.296.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.ThreadSettings.Equals (
            ThreadSettings other )  [inline]
```

Compares for equality

9.296.3 Property Documentation

9.296.3.1 Mask

```
ThreadSettingsKind Rti.Dds.Core.Policy.ThreadSettings.Mask  [get]
```

Describes the type of thread.

The full documentation is available in the C API: DDS_ThreadSettings_t_mask

9.296.3.2 Priority

```
int Rti.Dds.Core.Policy.ThreadSettings.Priority  [get]
```

Thread priority.

The full documentation is available in the C API: DDS_ThreadSettings_t_priority

9.296.3.3 StackSize

```
int Rti.Dds.Core.Policy.ThreadSettings.StackSize  [get]
```

The thread stack-size.

The full documentation is available in the C API: DDS_ThreadSettings_t_stack_size

9.296.3.4 CpuList

```
ImmutableList<int> Rti.Dds.Core.Policy.ThreadSettings.CpuList  [get]
```

The list of processors on which the thread(s) may run.

The full documentation is available in the C API: DDS_ThreadSettings_t_cpu_list

9.296.3.5 CpuRotation

```
CpuRotationKind Rti.Dds.Core.Policy.ThreadSettings.CpuRotation [get]
```

Determines how processor affinity is applied to multiple threads.

The full documentation is available in the C API: `DDS_ThreadSettings_t_cpu_rotation`

9.296.3.6 Default

```
ThreadSettings Rti.Dds.Core.Policy.ThreadSettings.Default = CreateDefault() [static], [get]
```

Singleton containing the default value of a **ThreadSettings** (p. 1129)

9.297 Rti.Dds.Core.Policy.ThreadSettingsBuilder Class Reference

A modifiable type used to create an immutable **ThreadSettings** (p. 1129)

Public Member Functions

- **ThreadSettingsBuilder** (**ThreadSettings** data)
  Creates a builder with the values of an existing immutable instance
- **ThreadSettings Build** ()
  *Creates a new **ThreadSettings** (p. 1129) immutable object from this one.*

Properties

- **ThreadSettingsKind Mask** `[get, set]`
  Describes the type of thread.
- int **Priority** `[get, set]`
  Thread priority.
- int **StackSize** `[get, set]`
  The thread stack-size.
- ImmutableList< int >.Builder **CpuList** `[get, set]`
  The list of processors on which the thread(s) may run.
- **CpuRotationKind CpuRotation** `[get, set]`
  Determines how processor affinity is applied to multiple threads.

9.297.1 Detailed Description

A modifiable type used to create an immutable **ThreadSettings** (p. 1129)

9.297.2 Constructor & Destructor Documentation

9.297.2.1 ThreadSettingsBuilder()

```
Rti.Dds.Core.Policy.ThreadSettingsBuilder.ThreadSettingsBuilder (
            ThreadSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.297.3 Member Function Documentation

9.297.3.1 Build()

```
ThreadSettings Rti.Dds.Core.Policy.ThreadSettingsBuilder.Build ( )
```

Creates a new **ThreadSettings** (p. 1129) immutable object from this one.

9.297.4 Property Documentation

9.297.4.1 Mask

```
ThreadSettingsKind Rti.Dds.Core.Policy.ThreadSettingsBuilder.Mask  [get], [set]
```

Describes the type of thread.

The full documentation is available in the C API: DDS_ThreadSettings_t_mask

9.297.4.2 Priority

```
int Rti.Dds.Core.Policy.ThreadSettingsBuilder.Priority  [get], [set]
```

Thread priority.

The full documentation is available in the C API: DDS_ThreadSettings_t_priority

9.297.4.3 StackSize

```
int Rti.Dds.Core.Policy.ThreadSettingsBuilder.StackSize  [get], [set]
```

The thread stack-size.

The full documentation is available in the C API: DDS_ThreadSettings_t_stack_size

9.297.4.4 CpuList

```
ImmutableList<int>.Builder Rti.Dds.Core.Policy.ThreadSettingsBuilder.CpuList  [get], [set]
```

The list of processors on which the thread(s) may run.

The full documentation is available in the C API: DDS_ThreadSettings_t_cpu_list

9.297.4.5 CpuRotation

```
CpuRotationKind Rti.Dds.Core.Policy.ThreadSettingsBuilder.CpuRotation  [get], [set]
```

Determines how processor affinity is applied to multiple threads.

The full documentation is available in the C API: DDS_ThreadSettings_t_cpu_rotation

9.298 Omg.Dds.Core.Time Struct Reference

Represents a moment in time.

Inherits IEquatable< Time >, and IComparable< Time >.

Public Member Functions

- **Time** (long sec, uint nsec=0)
  Creates a new object with the specified absolute number of seconds and nanoseconds.
- int **CompareTo** (**Time** other)
  Compares two times.
- bool **Equals** (**Time** other)
  Compares two times for equality.
- override bool **Equals** (object obj)
  Compares two objects for equality.
- override int **GetHashCode** ()
  Gets the hash code.
- override string **ToString** ()
  Converts this object to a string.

Static Public Member Functions

- static **Time** **FromSeconds** (ulong seconds)

  Creates a time from the specified total number of seconds.
- static **Time** **FromSeconds** (double seconds)

  Creates a time from the specified total number of seconds.
- static **Time** **FromMilliseconds** (ulong ms)

  Creates a time from the specified total number of milliseconds.
- static bool **operator==** (in **Time** a, in **Time** b)

  Compares for equality.
- static bool **operator!=** (in **Time** a, in **Time** b)

  Compares for inequality.
- static bool **operator**< (in **Time** a, in **Time** b)

  Determines if one time value is smaller than another one.
- static bool **operator**> (in **Time** a, in **Time** b)

  Determines if one time value is greater than another one.
- static bool **operator**<**=** (in **Time** a, in **Time** b)

  Determines if one time value is smaller or equal than another one.
- static bool **operator**>**=** (in **Time** a, in **Time** b)

  Determines if one time value is greater or equal than another one.
- static **Duration** **operator-** (in **Time** a, in **Time** b)

  Calculate the duration between two times

Static Public Attributes

- const uint **NanosecondsPerSecond** = 1_000_000_000

  Number of nanoseconds in a second
- const uint **NanosecondsPerMillisecond** = 1_000_000

  Number of nanoseconds in a millisecond
- const uint **MillisecondsPerSecond** = 1_000

  Number of milliseconds in a second

Properties

- static **Time** **Zero** = new **Time**(0, 0) `[get]`

  The default instant in time: zero seconds and zero nanoseconds
- static **Time** **MaxValue** `[get]`

  *The maximum valid value of **Time** (p. 1134)*
- static **Time** **Invalid** = new **Time**(-1, 0xffffffff) `[get]`

  A special sentinel that indicates an invalid or unknown time.
- long **Seconds** `[get]`

  Gets the second component of this object.
- uint **Nanoseconds** `[get]`

  Gets the nanosecond component of this object.
- ulong **TotalMilliseconds** `[get]`

  Gets the total number of milliseconds

9.298.1 Detailed Description

Represents a moment in time.

9.298.2 Constructor & Destructor Documentation

9.298.2.1 Time()

```
Omg.Dds.Core.Time.Time (
            long sec,
            uint nsec = 0 )
```

Creates a new object with the specified absolute number of seconds and nanoseconds.

9.298.3 Member Function Documentation

9.298.3.1 FromSeconds() [1/2]

```
static  Time Omg.Dds.Core.Time.FromSeconds (
            ulong seconds )  [static]
```

Creates a time from the specified total number of seconds.

9.298.3.2 FromSeconds() [2/2]

```
static  Time Omg.Dds.Core.Time.FromSeconds (
            double seconds )  [static]
```

Creates a time from the specified total number of seconds.

9.298.3.3 FromMilliseconds()

```
static  Time Omg.Dds.Core.Time.FromMilliseconds (
            ulong ms )  [static]
```

Creates a time from the specified total number of milliseconds.

9.298.3.4 CompareTo()

```
int Omg.Dds.Core.Time.CompareTo (
              Time other )
```

Compares two times.

9.298.3.5 Equals() [1/2]

```
bool Omg.Dds.Core.Time.Equals (
              Time other )
```

Compares two times for equality.

9.298.3.6 Equals() [2/2]

```
override bool Omg.Dds.Core.Time.Equals (
             object obj )
```

Compares two objects for equality.

9.298.3.7 GetHashCode()

```
override int Omg.Dds.Core.Time.GetHashCode ( )
```

Gets the hash code.

9.298.3.8 ToString()

```
override string Omg.Dds.Core.Time.ToString ( )
```

Converts this object to a string.

9.298.3.9 operator==()

```
static bool Omg.Dds.Core.Time.operator== (
            in  Time a,
            in  Time b )  [static]
```

Compares for equality.

9.298.3.10 operator"!=()

```
static bool Omg.Dds.Core.Time.operator!= (
            in  Time a,
            in  Time b )  [static]
```

Compares for inequality.

9.298.3.11 operator<()

```
static bool Omg.Dds.Core.Time.operator< (
            in  Time a,
            in  Time b )  [static]
```

Determines if one time value is smaller than another one.

9.298.3.12 operator>()

```
static bool Omg.Dds.Core.Time.operator> (
            in  Time a,
            in  Time b )  [static]
```

Determines if one time value is greater than another one.

9.298.3.13 operator<=()

```
static bool Omg.Dds.Core.Time.operator<= (
            in  Time a,
            in  Time b )  [static]
```

Determines if one time value is smaller or equal than another one.

9.298.3.14 operator>=()

```
static bool Omg.Dds.Core.Time.operator>= (
            in  Time a,
            in  Time b )  [static]
```

Determines if one time value is greater or equal than another one.

9.298.3.15 operator-()

```
static  Duration Omg.Dds.Core.Time.operator- (
            in  Time a,
            in  Time b )  [inline], [static]
```

Calculate the duration between two times

9.298.4 Field Documentation

9.298.4.1 NanosecondsPerSecond

```
const uint Omg.Dds.Core.Time.NanosecondsPerSecond = 1_000_000_000  [static]
```

Number of nanoseconds in a second

9.298.4.2 NanosecondsPerMillisecond

```
const uint Omg.Dds.Core.Time.NanosecondsPerMillisecond = 1_000_000  [static]
```

Number of nanoseconds in a millisecond

9.298.4.3 MillisecondsPerSecond

```
const uint Omg.Dds.Core.Time.MillisecondsPerSecond = 1_000  [static]
```

Number of milliseconds in a second

9.298.5 Property Documentation

9.298.5.1 Zero

```
Time Omg.Dds.Core.Time.Zero = new Time(0, 0) [static], [get]
```

The default instant in time: zero seconds and zero nanoseconds

The full documentation is available in the C API: DDSTime_tTIME_ZERO

9.298.5.2 MaxValue

```
Time Omg.Dds.Core.Time.MaxValue [static], [get]
```

Initial value:

```
= new Time(
                0x7fffffffffffffff,
                0xffffffff)
```

The maximum valid value of **Time** (p. 1134)

9.298.5.3 Invalid

```
Time Omg.Dds.Core.Time.Invalid = new Time(-1, 0xffffffff) [static], [get]
```

A special sentinel that indicates an invalid or unknown time.

9.298.5.4 Seconds

```
long Omg.Dds.Core.Time.Seconds [get]
```

Gets the second component of this object.

9.298.5.5 Nanoseconds

```
uint Omg.Dds.Core.Time.Nanoseconds [get]
```

Gets the nanosecond component of this object.

9.298.5.6 TotalMilliseconds

```
ulong Omg.Dds.Core.Time.TotalMilliseconds  [get]
```

Gets the total number of milliseconds

9.299 Rti.Dds.Core.Policy.TimeBasedFilter Class Reference

Allows a Subscription.DataReader<T> to indicate that it is not interested in all the sample updates that occur within a time period.

Inherits IEquatable< TimeBasedFilter >.

Public Member Functions

- **TimeBasedFilter** (**Duration** minSeparation)

  *Creates a new **TimeBasedFilter** (p. 1141) object using its minimum separation*
- **TimeBasedFilter With** (Action< **TimeBasedFilterBuilder** > build)

  *Creates a new **TimeBasedFilter** (p. 1141) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TimeBasedFilter** other)

  Compares for equality

Properties

- **Duration MinimumSeparation** [get]

  The minimum separation duration between subsequent samples.
- static **TimeBasedFilter Default** [get]

  *Singleton containing the default value of a **TimeBasedFilter** (p. 1141)*

9.299.1 Detailed Description

Allows a Subscription.DataReader<T> to indicate that it is not interested in all the sample updates that occur within a time period.

The full documentation is available in the C API: DDS_TimeBasedFilterQosPolicy

9.299.2 Constructor & Destructor Documentation

9.299.2.1 TimeBasedFilter()

```
Rti.Dds.Core.Policy.TimeBasedFilter.TimeBasedFilter (
             Duration minSeparation )
```

Creates a new **TimeBasedFilter** (p. 1141) object using its minimum separation

9.299.3 Member Function Documentation

9.299.3.1 With()

```
TimeBasedFilter Rti.Dds.Core.Policy.TimeBasedFilter.With (
            Action< TimeBasedFilterBuilder > build )  [inline]
```

Creates a new **TimeBasedFilter** (p. 1141) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TimeBasedFilter** (p. 1141).

Returns

A new **TimeBasedFilter** (p. 1141) with the changes applied by the Action

9.299.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TimeBasedFilter.GetHashCode ( )  [inline]
```

Gets the hash code

9.299.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TimeBasedFilter.Equals (
            object other )
```

Compares for equality

9.299.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TimeBasedFilter.Equals (
            TimeBasedFilter other )  [inline]
```

Compares for equality

9.299.4 Property Documentation

9.299.4.1 MinimumSeparation

```
Duration Rti.Dds.Core.Policy.TimeBasedFilter.MinimumSeparation  [get]
```

The minimum separation duration between subsequent samples.

The full documentation is available in the C API: DDS_TimeBasedFilterQosPolicy_minimum_↩ separation

9.299.4.2 Default

```
TimeBasedFilter Rti.Dds.Core.Policy.TimeBasedFilter.Default  [static], [get]
```

Singleton containing the default value of a **TimeBasedFilter** (p. 1141)

9.300 Rti.Dds.Core.Policy.TimeBasedFilterBuilder Class Reference

A modifiable type used to create an immutable **TimeBasedFilter** (p. 1141)

Public Member Functions

- **TimeBasedFilterBuilder** (**TimeBasedFilter** data)

  Creates a builder with the values of an existing immutable instance
- **TimeBasedFilter Build** ()

  *Creates a new **TimeBasedFilter** (p. 1141) immutable object from this one.*

Properties

- **Duration MinimumSeparation** [get, set]

  The minimum separation duration between subsequent samples.

9.300.1 Detailed Description

A modifiable type used to create an immutable **TimeBasedFilter** (p. 1141)

9.300.2 Constructor & Destructor Documentation

9.300.2.1 TimeBasedFilterBuilder()

```
Rti.Dds.Core.Policy.TimeBasedFilterBuilder.TimeBasedFilterBuilder (
            TimeBasedFilter data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.300.3 Member Function Documentation

9.300.3.1 Build()

```
TimeBasedFilter Rti.Dds.Core.Policy.TimeBasedFilterBuilder.Build ( )
```

Creates a new **TimeBasedFilter** (p. 1141) immutable object from this one.

9.300.4 Property Documentation

9.300.4.1 MinimumSeparation

```
Duration Rti.Dds.Core.Policy.TimeBasedFilterBuilder.MinimumSeparation  [get], [set]
```

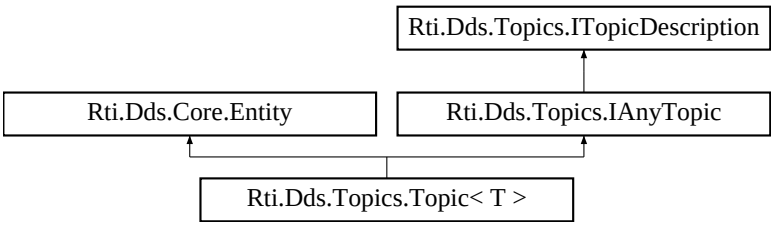
The minimum separation duration between subsequent samples.

The full documentation is available in the C API: DDS_TimeBasedFilterQosPolicy_minimum_↩separation

9.301 Rti.Dds.Topics.Topic< T > Class Template Reference

The most basic description of the data to be published and subscribed.

Inheritance diagram for Rti.Dds.Topics.Topic< T >:



Public Member Functions

- override string **ToString** ()

  Displays basic information about this topic
- override void **ResetEvents** (**StatusMask** eventsToRemove=StatusMask.All)

  Stop notifying of events and remove their event handlers

Properties

- **TopicQos Qos** `[get, set]`

  Get or change the QoS of this DomainParticipant.
- **DomainParticipant DomainParticipant** `[get]`

  The DomainParticipant that contains this topic.
- string **Name** `[get]`

  The name given to this topic
- string **TypeName** `[get]`

  The name of the type associated with this topic.
- **InconsistentTopicStatus InconsistentTopicStatus** `[get]`

  Retrieve the StatusMask.InconsistentTopic status.
- **InconsistentTopicEventHandler InconsistentTopic**

  *Event triggered when the **Rti.Dds.Core.Status.StatusMask.InconsistentTopic** (p. 108) status changes.*

Additional Inherited Members

9.301.1 Detailed Description

The most basic description of the data to be published and subscribed.

Template Parameters

T	The type for this topic. Valid types are: • C# classes generated from IDL, such as **Example.MyType** (p. 801), • A built-in type (available without code generation): **Rti.Types.Builtin.StringTopicType** (p. 1072), **Rti.Types.Builtin.OctetsTopicType** (p. 817), • **Rti.Types.Dynamic.DynamicData** (p. 564) (this is returned by **Rti.Dds.Domain.DomainParticipant.CreateTopic(string, Rti.Types.Dynamic.DynamicType)** (p. 457))

The full documentation is available in the C API: `DDS_Topic`

9.301.2 Member Function Documentation

9.301.2.1 ToString()

```
override string  Rti.Dds.Topics.Topic< T >.ToString ( )
```

Displays basic information about this topic

9.301.2.2 ResetEvents()

```
override void  Rti.Dds.Topics.Topic< T >.ResetEvents (
            StatusMask eventsToRemove = StatusMask.All )  [inline], [virtual]
```

Stop notifying of events and remove their event handlers

Parameters

eventsToRemove	Selects which events will stop receiving notifications. Use StatusMask.All to remove all event handlers.

Implements **Rti.Dds.Core.Entity** (p. 597).

9.301.3 Property Documentation

9.301.3.1 Qos

TopicQos Rti.Dds.Topics.Topic< T >.Qos [get], [set]

Get or change the QoS of this DomainParticipant.

*The full documentation is available in the C API:*DDS_DomainParticipant_set_qos

9.301.3.2 DomainParticipant

DomainParticipant Rti.Dds.Topics.Topic< T >. **DomainParticipant** [get]

The DomainParticipant that contains this topic.

Implements **Rti.Dds.Topics.ITopicDescription** (p. 682).

9.301.3.3 Name

string **Rti.Dds.Topics.Topic**< T >.Name [get]

The name given to this topic

Implements **Rti.Dds.Topics.ITopicDescription** (p. 682).

9.301.3.4 TypeName

string **Rti.Dds.Topics.Topic**< T >.TypeName [get]

The name of the type associated with this topic.

Implements **Rti.Dds.Topics.ITopicDescription** (p. 682).

9.301.3.5 InconsistentTopicStatus

InconsistentTopicStatus Rti.Dds.Topics.Topic< T >. **InconsistentTopicStatus** [get]

Retrieve the StatusMask.InconsistentTopic status.

*The full documentation is available in the C API:*DDS_Topic_get_inconsistent_topic_status

Implements **Rti.Dds.Topics.IAnyTopic** (p. 650).

9.301.3.6 InconsistentTopic

`InconsistentTopicEventHandler Rti.Dds.Topics.Topic< T >.InconsistentTopic [add], [remove]`

Event triggered when the **Rti.Dds.Core.Status.StatusMask.InconsistentTopic** (p. 108) status changes.

Implements **Rti.Dds.Topics.IAnyTopic** (p. 650).

9.302 Rti.Dds.Topics.TopicBuiltinTopicData Class Reference

Entry created when a Topics.Topic<T> object is discovered.

Inherits IEquatable< TopicBuiltinTopicData >.

Public Member Functions

- **TopicBuiltinTopicData** (in **BuiltinTopicKey** key)

  *Creates a new **TopicBuiltinTopicData** (p. 1148) using a **BuiltinTopicKey** (p. 199).*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TopicBuiltinTopicData** other)

  Compares for equality
- override string **ToString** ()

  Returns a readable summary of the data

Properties

- **BuiltinTopicKey Key** `[get]`

  DCPS key to distinguish entries.
- string **Name** `[get]`

  Name of the Topics.Topic<T>.
- string **TypeName** `[get]`

  Name of the type attached to the Topics.Topic<T>.
- **Durability Durability** `[get]`

  *durability policy of the corresponding **Topic** (p. 1145)*
- **DurabilityService DurabilityService** `[get]`

  *durability service policy of the corresponding **Topic** (p. 1145)*
- **Deadline Deadline** `[get]`

  *Policy of the corresponding **Topic** (p. 1145)*
- **LatencyBudget LatencyBudget** `[get]`

  *Policy of the corresponding **Topic** (p. 1145)*
- **Liveliness Liveliness** `[get]`

*Policy of the corresponding **Topic** (p. 1145)*

- **Reliability Reliability** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **TransportPriority TransportPriority** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **Lifespan Lifespan** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **DestinationOrder DestinationOrder** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **History History** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **ResourceLimits ResourceLimits** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **Ownership Ownership** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **TopicData TopicData** [get]

  *Policy of the corresponding **Topic** (p. 1145)*
- **DataRepresentation Representation** [get]

  *Data representation policy of the corresponding **Topic** (p. 1145)*

9.302.1 Detailed Description

Entry created when a Topics.Topic<T> object is discovered.

The full documentation is available in the C API: DDS_TopicBuiltinTopicData

9.302.2 Constructor & Destructor Documentation

9.302.2.1 TopicBuiltinTopicData()

```
Rti.Dds.Topics.TopicBuiltinTopicData.TopicBuiltinTopicData (
            in  BuiltinTopicKey key )
```

Creates a new **TopicBuiltinTopicData** (p. 1148) using a **BuiltinTopicKey** (p. 199).

The rest of elements are not initialized. This constructor can be used to create a key holder for **Subscription.Data↩ Reader<T>.LookupInstance(T)** (p. 246).

9.302.3 Member Function Documentation

9.302.3.1 GetHashCode()

```
override int Rti.Dds.Topics.TopicBuiltinTopicData.GetHashCode ( )
```

Gets the hash code

9.302.3.2 Equals() [1/2]

```
override bool Rti.Dds.Topics.TopicBuiltinTopicData.Equals (
            object other )
```

Compares for equality

9.302.3.3 Equals() [2/2]

```
bool Rti.Dds.Topics.TopicBuiltinTopicData.Equals (
             TopicBuiltinTopicData other )  [inline]
```

Compares for equality

9.302.3.4 ToString()

```
override string Rti.Dds.Topics.TopicBuiltinTopicData.ToString ( )  [inline]
```

Returns a readable summary of the data

9.302.4 Property Documentation

9.302.4.1 Key

```
BuiltinTopicKey Rti.Dds.Topics.TopicBuiltinTopicData.Key  [get]
```

DCPS key to distinguish entries.

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_key

9.302.4.2 Name

```
string Rti.Dds.Topics.TopicBuiltinTopicData.Name [get]
```

Name of the Topics.Topic<T>.

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_name

9.302.4.3 TypeName

```
string Rti.Dds.Topics.TopicBuiltinTopicData.TypeName [get]
```

Name of the type attached to the Topics.Topic<T>.

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_type_name

9.302.4.4 Durability

```
Durability Rti.Dds.Topics.TopicBuiltinTopicData.Durability [get]
```

durability policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_durability

9.302.4.5 DurabilityService

```
DurabilityService Rti.Dds.Topics.TopicBuiltinTopicData.DurabilityService [get]
```

durability service policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_durability_service

9.302.4.6 Deadline

```
Deadline Rti.Dds.Topics.TopicBuiltinTopicData.Deadline [get]
```

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_deadline

9.302.4.7 LatencyBudget

```
LatencyBudget Rti.Dds.Topics.TopicBuiltinTopicData.LatencyBudget [get]
```

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_latency_budget

9.302.4.8 Liveliness

Liveliness Rti.Dds.Topics.TopicBuiltinTopicData.Liveliness [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_liveliness

9.302.4.9 Reliability

Reliability Rti.Dds.Topics.TopicBuiltinTopicData.Reliability [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_reliability

9.302.4.10 TransportPriority

TransportPriority Rti.Dds.Topics.TopicBuiltinTopicData.TransportPriority [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_transport_priority

9.302.4.11 Lifespan

Lifespan Rti.Dds.Topics.TopicBuiltinTopicData.Lifespan [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_lifespan

9.302.4.12 DestinationOrder

DestinationOrder Rti.Dds.Topics.TopicBuiltinTopicData.DestinationOrder [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_destination_order

9.302.4.13 History

History Rti.Dds.Topics.TopicBuiltinTopicData.History [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_history

9.302.4.14 ResourceLimits

ResourceLimits Rti.Dds.Topics.TopicBuiltinTopicData.ResourceLimits [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_resource_limits

9.302.4.15 Ownership

Ownership Rti.Dds.Topics.TopicBuiltinTopicData.Ownership [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_ownership

9.302.4.16 TopicData

TopicData Rti.Dds.Topics.TopicBuiltinTopicData.TopicData [get]

Policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_topic_data

9.302.4.17 Representation

DataRepresentation Rti.Dds.Topics.TopicBuiltinTopicData.Representation [get]

Data representation policy of the corresponding **Topic** (p. 1145)

The full documentation is available in the C API: DDS_TopicBuiltinTopicData_representation

9.303 Rti.Dds.Core.Policy.TopicData Class Reference

Attaches a buffer of opaque data that is distributed by means of the built-in topics.

Inherits IEquatable< TopicData >.

Public Member Functions

- **TopicData** (IEnumerable< byte > value)

  *Creates a **TopicData** (p. 1153) object with a list of settings*
- **TopicData** (ImmutableList< byte > value)

  *Creates a **TopicData** (p. 1153) object with a list of settings*
- **TopicData With** (Action< ImmutableList< byte >.Builder > build)

  *Creates a new **TopicData** (p. 1153) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TopicData** other)

  Compares for equality

Properties

- ImmutableList< byte > **Value** `[get]`

  An opaque sequence of bytes.
- static **TopicData Default** `[get]`

  *Singleton containing the default value of a **TopicData** (p. 1153)*

9.303.1 Detailed Description

Attaches a buffer of opaque data that is distributed by means of the built-in topics.

The full documentation is available in the C API: `DDS_TopicDataQosPolicy`

9.303.2 Constructor & Destructor Documentation

9.303.2.1 TopicData() [1/2]

```
Rti.Dds.Core.Policy.TopicData.TopicData (
            IEnumerable< byte > value )  [inline]
```

Creates a **TopicData** (p. 1153) object with a list of settings

9.303.2.2 TopicData() [2/2]

```
Rti.Dds.Core.Policy.TopicData.TopicData (
            ImmutableList< byte > value )
```

Creates a **TopicData** (p. 1153) object with a list of settings

9.303.3 Member Function Documentation

9.303.3.1 With()

```
TopicData Rti.Dds.Core.Policy.TopicData.With (
            Action< ImmutableList< byte >.Builder > build )  [inline]
```

Creates a new **TopicData** (p. 1153) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable list with the current values of this object's **Value** (p. 1156).

Returns

A new **TopicData** (p. 1153) with the changes applied by the Action

9.303.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TopicData.GetHashCode ( )
```

Gets the hash code

9.303.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TopicData.Equals (
            object other )
```

Compares for equality

9.303.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TopicData.Equals (
            TopicData other )  [inline]
```

Compares for equality

9.303.4 Property Documentation

9.303.4.1 Value

```
ImmutableList<byte> Rti.Dds.Core.Policy.TopicData.Value  [get]
```

An opaque sequence of bytes.

The full documentation is available in the C API: DDS_TopicDataQosPolicy_value

9.303.4.2 Default

```
TopicData Rti.Dds.Core.Policy.TopicData.Default  [static], [get]
```

Singleton containing the default value of a **TopicData** (p. 1153)

9.304 Rti.Dds.Topics.TopicQos Class Reference

QoS policies supported by a Topic<T>.

Inherits IEquatable< TopicQos >.

Public Member Functions

- **TopicQos WithTopicData** (**TopicData** policy)

  *Creates an instance with a new **TopicData*** (p. *1172*) *policy.*
- **TopicQos WithTopicData** (Action< ImmutableList< byte >.Builder > build)

  *Creates a new instance with a new **TopicData*** (p. *1172*) *policy as configured by a build action*
- **TopicQos WithDurability** (**Durability** policy)

  *Creates an instance with a new **Durability*** (p. *1172*) *policy.*
- **TopicQos WithDurability** (Action< **DurabilityBuilder** > build)

  *Creates a new instance with a new **Durability*** (p. *1172*) *policy as configured by a build action*
- **TopicQos WithDurabilityService** (**DurabilityService** policy)

  *Creates an instance with a new **DurabilityService*** (p. *1172*) *policy.*
- **TopicQos WithDurabilityService** (Action< **DurabilityServiceBuilder** > build)

  *Creates a new instance with a new **DurabilityService*** (p. *1172*) *policy as configured by a build action*
- **TopicQos WithDeadline** (**Deadline** policy)

  *Creates an instance with a new **Deadline*** (p. *1172*) *policy.*
- **TopicQos WithDeadline** (Action< **DeadlineBuilder** > build)

  *Creates a new instance with a new **Deadline*** (p. *1172*) *policy as configured by a build action*
- **TopicQos WithLatencyBudget** (**LatencyBudget** policy)

  *Creates an instance with a new **LatencyBudget*** (p. *1173*) *policy.*
- **TopicQos WithLatencyBudget** (Action< **LatencyBudgetBuilder** > build)

  *Creates a new instance with a new **LatencyBudget*** (p. *1173*) *policy as configured by a build action*
- **TopicQos WithLiveliness** (**Liveliness** policy)

  *Creates an instance with a new **Liveliness*** (p. *1173*) *policy.*
- **TopicQos WithLiveliness** (Action< **LivelinessBuilder** > build)

  *Creates a new instance with a new **Liveliness*** (p. *1173*) *policy as configured by a build action*
- **TopicQos WithReliability** (**Reliability** policy)

  *Creates an instance with a new **Reliability*** (p. *1173*) *policy.*
- **TopicQos WithReliability** (Action< **ReliabilityBuilder** > build)

  *Creates a new instance with a new **Reliability*** (p. *1173*) *policy as configured by a build action*
- **TopicQos WithDestinationOrder** (**DestinationOrder** policy)

  *Creates an instance with a new **DestinationOrder*** (p. *1173*) *policy.*
- **TopicQos WithDestinationOrder** (Action< **DestinationOrderBuilder** > build)

  *Creates a new instance with a new **DestinationOrder*** (p. *1173*) *policy as configured by a build action*
- **TopicQos WithHistory** (**History** policy)

  *Creates an instance with a new **History*** (p. *1173*) *policy.*
- **TopicQos WithHistory** (Action< **HistoryBuilder** > build)

  *Creates a new instance with a new **History*** (p. *1173*) *policy as configured by a build action*
- **TopicQos WithResourceLimits** (**ResourceLimits** policy)

  *Creates an instance with a new **ResourceLimits*** (p. *1173*) *policy.*
- **TopicQos WithResourceLimits** (Action< **ResourceLimitsBuilder** > build)

  *Creates a new instance with a new **ResourceLimits*** (p. *1173*) *policy as configured by a build action*
- **TopicQos WithTransportPriority** (**TransportPriority** policy)

  *Creates an instance with a new **TransportPriority*** (p. *1174*) *policy.*
- **TopicQos WithTransportPriority** (Action< **TransportPriorityBuilder** > build)

  *Creates a new instance with a new **TransportPriority*** (p. *1174*) *policy as configured by a build action*
- **TopicQos WithLifespan** (**Lifespan** policy)

*Creates an instance with a new **Lifespan** (p. 1174) policy.*

- **TopicQos WithLifespan** (Action< **LifespanBuilder** > build)

  *Creates a new instance with a new **Lifespan** (p. 1174) policy as configured by a build action*
- **TopicQos WithOwnership** (**Ownership** policy)

  *Creates an instance with a new **Ownership** (p. 1174) policy.*
- **TopicQos WithOwnership** (Action< **OwnershipBuilder** > build)

  *Creates a new instance with a new **Ownership** (p. 1174) policy as configured by a build action*
- **TopicQos WithRepresentation** (**DataRepresentation** policy)

  Creates an instance with a new DataRepresentation policy.
- **TopicQos WithRepresentation** (Action< **DataRepresentationBuilder** > build)

  Creates a new instance with a new DataRepresentation policy as configured by a build action
- **DataWriterQos ToDataWriterQos** ()

  *Creates a DataWriterQos object with the policies of this **TopicQos** (p. 1156).*
- **DataReaderQos ToDataReaderQos** ()

  *Creates a DataReaderQos object with the policies of this **TopicQos** (p. 1156).*
- bool **Equals** (**TopicQos** other)

  Compares all the policies for equality
- override int **GetHashCode** ()

  Returns the hash code by combining that of each policy
- override bool **Equals** (object obj)

  Compares all the policies for equality
- override string **ToString** ()

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintFormat** format)

  Returns an XML representation of the QoS object.
- string **ToString** (**TopicQos** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.
- string **ToString** (**QosPrintAll** baseQos, **QosPrintFormat** format=null)

  Returns an XML representation of the QoS object.

Properties

- static **TopicQos Default** = new **TopicQos**() `[get]`

  *Singleton containing the documented default value of a **TopicQos** (p. 1156)*
- **TopicData TopicData** `[get]`

  *Gets the **TopicData** (p. 1172) policy.*
- **Durability Durability** `[get]`

  *Gets the **Durability** (p. 1172) policy.*
- **DurabilityService DurabilityService** `[get]`

  *Gets the **DurabilityService** (p. 1172) policy.*
- **Deadline Deadline** `[get]`

  *Gets the **Deadline** (p. 1172) policy.*
- **LatencyBudget LatencyBudget** `[get]`

  *Gets the **LatencyBudget** (p. 1173) policy.*
- **Liveliness Liveliness** `[get]`

  *Gets the **Liveliness** (p. 1173) policy.*

- **Reliability Reliability** [get]

  *Gets the **Reliability** (p. 1173) policy.*
- **DestinationOrder DestinationOrder** [get]

  *Gets the **DestinationOrder** (p. 1173) policy.*
- **History History** [get]

  *Gets the **History** (p. 1173) policy.*
- **ResourceLimits ResourceLimits** [get]

  *Gets the **ResourceLimits** (p. 1173) policy.*
- **TransportPriority TransportPriority** [get]

  *Gets the **TransportPriority** (p. 1174) policy.*
- **Lifespan Lifespan** [get]

  *Gets the **Lifespan** (p. 1174) policy.*
- **Ownership Ownership** [get]

  *Gets the **Ownership** (p. 1174) policy.*
- **DataRepresentation Representation** [get]

  Gets the DataRepresentation policy.

9.304.1 Detailed Description

QoS policies supported by a Topic<T>.

*The full documentation is available in the C API:*DDS_TopicQos

9.304.2 Member Function Documentation

9.304.2.1 WithTopicData() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithTopicData (
            TopicData policy )  [inline]
```

Creates an instance with a new **TopicData** (p. 1172) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.2 WithTopicData() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithTopicData (
            Action< ImmutableList< byte >.Builder > build )
```

Creates a new instance with a new **TopicData** (p. 1172) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.3 WithDurability() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDurability (
             Durability policy )  [inline]
```

Creates an instance with a new **Durability** (p. 1172) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.4 WithDurability() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDurability (
            Action<  DurabilityBuilder > build )
```

Creates a new instance with a new **Durability** (p. 1172) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.5 WithDurabilityService() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDurabilityService (
            DurabilityService policy )  [inline]
```

Creates an instance with a new **DurabilityService** (p. 1172) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.6 WithDurabilityService() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDurabilityService (
           Action<  DurabilityServiceBuilder > build )
```

Creates a new instance with a new **DurabilityService** (p. 1172) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.7 WithDeadline() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDeadline (
            Deadline policy )  [inline]
```

Creates an instance with a new **Deadline** (p. 1172) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.8 WithDeadline() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDeadline (
            Action< DeadlineBuilder > build )
```

Creates a new instance with a new **Deadline** (p. 1172) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.9 WithLatencyBudget() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithLatencyBudget (
            LatencyBudget policy )  [inline]
```

Creates an instance with a new **LatencyBudget** (p. 1173) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.10 WithLatencyBudget() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithLatencyBudget (
            Action<  LatencyBudgetBuilder > build )
```

Creates a new instance with a new **LatencyBudget** (p. 1173) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.11 WithLiveliness() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithLiveliness (
             Liveliness policy )  [inline]
```

Creates an instance with a new **Liveliness** (p. 1173) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.12 WithLiveliness() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithLiveliness (
            Action<  LivelinessBuilder > build )
```

Creates a new instance with a new **Liveliness** (p. 1173) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.13 WithReliability() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithReliability (
            Reliability policy )  [inline]
```

Creates an instance with a new **Reliability** (p. 1173) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.14 WithReliability() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithReliability (
           Action<  ReliabilityBuilder > build )
```

Creates a new instance with a new **Reliability** (p. 1173) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.15 WithDestinationOrder() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDestinationOrder (
            DestinationOrder policy )  [inline]
```

Creates an instance with a new **DestinationOrder** (p. 1173) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.16 WithDestinationOrder() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithDestinationOrder (
            Action< DestinationOrderBuilder > build )
```

Creates a new instance with a new **DestinationOrder** (p. 1173) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.17 WithHistory() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithHistory (
            History policy )  [inline]
```

Creates an instance with a new **History** (p. 1173) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.18 WithHistory() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithHistory (
            Action< HistoryBuilder > build )
```

Creates a new instance with a new **History** (p. 1173) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.19 WithResourceLimits() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithResourceLimits (
             ResourceLimits policy )  [inline]
```

Creates an instance with a new **ResourceLimits** (p. 1173) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.20 WithResourceLimits() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithResourceLimits (
            Action< ResourceLimitsBuilder > build )
```

Creates a new instance with a new **ResourceLimits** (p. 1173) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.21 WithTransportPriority() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithTransportPriority (
            TransportPriority policy )  [inline]
```

Creates an instance with a new **TransportPriority** (p. 1174) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.22 WithTransportPriority() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithTransportPriority (
           Action<  TransportPriorityBuilder > build )
```

Creates a new instance with a new **TransportPriority** (p. 1174) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.23 WithLifespan() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithLifespan (
            Lifespan policy )  [inline]
```

Creates an instance with a new **Lifespan** (p. 1174) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.24 WithLifespan() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithLifespan (
            Action< LifespanBuilder > build )
```

Creates a new instance with a new **Lifespan** (p. 1174) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.25 WithOwnership() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithOwnership (
            Ownership policy )  [inline]
```

Creates an instance with a new **Ownership** (p. 1174) policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.26 WithOwnership() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithOwnership (
            Action< OwnershipBuilder > build )
```

Creates a new instance with a new **Ownership** (p. 1174) policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.27 WithRepresentation() [1/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithRepresentation (
             DataRepresentation policy )  [inline]
```

Creates an instance with a new DataRepresentation policy.

Parameters

policy	The new policy

Returns

A new instance with the same policies as the current instance, except for the one being set

9.304.2.28 WithRepresentation() [2/2]

```
TopicQos Rti.Dds.Topics.TopicQos.WithRepresentation (
            Action< DataRepresentationBuilder > build )
```

Creates a new instance with a new DataRepresentation policy as configured by a build action

Parameters

build	A function receiving the current values of the policy as an argument. The changes performed by this build function will be used to create the new policy.

Returns

A new instance with the sames policies as the current instance, except for the policy being modified

9.304.2.29 ToDataWriterQos()

```
DataWriterQos Rti.Dds.Topics.TopicQos.ToDataWriterQos ( )
```

Creates a DataWriterQos object with the policies of this **TopicQos** (p. 1156).

9.304.2.30 ToDataReaderQos()

```
DataReaderQos Rti.Dds.Topics.TopicQos.ToDataReaderQos ( )
```

Creates a DataReaderQos object with the policies of this **TopicQos** (p. 1156).

9.304.2.31 Equals() [1/2]

```
bool Rti.Dds.Topics.TopicQos.Equals (
            TopicQos other )  [inline]
```

Compares all the policies for equality

9.304.2.32 GetHashCode()

```
override int Rti.Dds.Topics.TopicQos.GetHashCode ( )  [inline]
```

Returns the hash code by combining that of each policy

9.304.2.33 Equals() [2/2]

```
override bool Rti.Dds.Topics.TopicQos.Equals (
            object obj )
```

Compares all the policies for equality

9.304.2.34 ToString() [1/4]

```
override string Rti.Dds.Topics.TopicQos.ToString ( )
```

Returns an XML representation of the QoS object.

The output is formatted using the default values for the QosPrintFormat and only QoS policies which differ from the documented default are included.

9.304.2.35 ToString() [2/4]

```
string Rti.Dds.Topics.TopicQos.ToString (
            QosPrintFormat format )
```

Returns an XML representation of the QoS object.

Parameters

format	The baseQos profile.

This overload accepts a value for the baseQos. Only the differences between the **TopicQos** (p. 1156) object being printed and the baseQos are included in the output.

9.304.2.36 ToString() [3/4]

```
string Rti.Dds.Topics.TopicQos.ToString (
            TopicQos baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	The baseQos profile.
format	the format used to configure the output. If not supplied the output is formatted using the default format.

This overload accepts a value for the baseQos. Only the differences between the **TopicQos** (p. 1156) object being printed and the baseQos are included in the output.

9.304.2.37 ToString() [4/4]

```
string Rti.Dds.Topics.TopicQos.ToString (
            QosPrintAll baseQos,
            QosPrintFormat format = null )
```

Returns an XML representation of the QoS object.

Parameters

baseQos	Used to indicate that the entire QoS object should be included in the output. The only value which should be provided for this argument is QosPrintAll.Value
format	The format used to configure the output. If not supplied, the output is formatted using the default format.

This overload accepts a parameter of type QosPrintAll. Unlike the other ToString overloads, the entire QoS object will be included in the output.

9.304.3 Property Documentation

9.304.3.1 Default

```
TopicQos Rti.Dds.Topics.TopicQos.Default = new  TopicQos()  [static], [get]
```

Singleton containing the documented default value of a **TopicQos** (p. 1156)

This is a static value containing the documented default values for each policy. Use **Domain.DomainParticipant.↩ DefaultTopicQos** (p. 468) for the runtime default value that takes into consideration the current configuration.

9.304.3.2 TopicData

```
TopicData Rti.Dds.Topics.TopicQos.TopicData  [get]
```

Gets the **TopicData** (p. 1172) policy.

9.304.3.3 Durability

```
Durability Rti.Dds.Topics.TopicQos.Durability  [get]
```

Gets the **Durability** (p. 1172) policy.

9.304.3.4 DurabilityService

```
DurabilityService Rti.Dds.Topics.TopicQos.DurabilityService  [get]
```

Gets the **DurabilityService** (p. 1172) policy.

9.304.3.5 Deadline

Deadline Rti.Dds.Topics.TopicQos.Deadline [get]

Gets the **Deadline** (p. 1172) policy.

9.304.3.6 LatencyBudget

LatencyBudget Rti.Dds.Topics.TopicQos.LatencyBudget [get]

Gets the **LatencyBudget** (p. 1173) policy.

9.304.3.7 Liveliness

Liveliness Rti.Dds.Topics.TopicQos.Liveliness [get]

Gets the **Liveliness** (p. 1173) policy.

9.304.3.8 Reliability

Reliability Rti.Dds.Topics.TopicQos.Reliability [get]

Gets the **Reliability** (p. 1173) policy.

9.304.3.9 DestinationOrder

DestinationOrder Rti.Dds.Topics.TopicQos.DestinationOrder [get]

Gets the **DestinationOrder** (p. 1173) policy.

9.304.3.10 History

History Rti.Dds.Topics.TopicQos.History [get]

Gets the **History** (p. 1173) policy.

9.304.3.11 ResourceLimits

ResourceLimits Rti.Dds.Topics.TopicQos.ResourceLimits [get]

Gets the **ResourceLimits** (p. 1173) policy.

9.304.3.12 TransportPriority

TransportPriority Rti.Dds.Topics.TopicQos.TransportPriority [get]

Gets the **TransportPriority** (p. 1174) policy.

9.304.3.13 Lifespan

Lifespan Rti.Dds.Topics.TopicQos.Lifespan [get]

Gets the **Lifespan** (p. 1174) policy.

9.304.3.14 Ownership

Ownership Rti.Dds.Topics.TopicQos.Ownership [get]

Gets the **Ownership** (p. 1174) policy.

9.304.3.15 Representation

DataRepresentation Rti.Dds.Topics.TopicQos.Representation [get]

Gets the DataRepresentation policy.

9.305 Rti.Dds.Subscription.TopicQuery Class Reference

Unsupported in this release

9.305.1 Detailed Description

Unsupported in this release

Note

Support for **TopicQuery** (p. 1174) will be added in a future release

9.306 Rti.Dds.Core.Policy.TopicQueryDispatch Class Reference

Configures the ability of a Publication.DataWriter<T> to publish samples in response to a **TopicQueryDispatch** (p. 1175).

Inherits IEquatable< TopicQueryDispatch >.

Public Member Functions

- **TopicQueryDispatch With** (Action< **TopicQueryDispatchBuilder** > build)
  *Creates a new **TopicQueryDispatch** (p. 1175) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**TopicQueryDispatch** other)
  Compares for equality

Properties

- bool **Enable** `[get]`
  Allows this writer to dispatch TopicQueries
- **Duration PublicationPeriod** `[get]`
  Sets the periodic interval at which samples are published.
- int **SamplesPerPeriod** `[get]`
  Sets the maximum number of samples to publish in each publication_period.
- static **TopicQueryDispatch Default** `[get]`
  *Singleton containing the default value of a **TopicQueryDispatch** (p. 1175)*

9.306.1 Detailed Description

Configures the ability of a Publication.DataWriter<T> to publish samples in response to a **TopicQueryDispatch** (p. 1175).

The full documentation is available in the C API: `DDS_TopicQueryDispatchQosPolicy`

9.306.2 Member Function Documentation

9.306.2.1 With()

```
TopicQueryDispatch Rti.Dds.Core.Policy.TopicQueryDispatch.With (
            Action<  TopicQueryDispatchBuilder > build )  [inline]
```

Creates a new **TopicQueryDispatch** (p. 1175) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TopicQueryDispatch** (p. 1175).

Returns

A new **TopicQueryDispatch** (p. 1175) with the changes applied by the Action

9.306.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TopicQueryDispatch.GetHashCode ( )  [inline]
```

Gets the hash code

9.306.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TopicQueryDispatch.Equals (
            object other )
```

Compares for equality

9.306.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TopicQueryDispatch.Equals (
             TopicQueryDispatch other )  [inline]
```

Compares for equality

9.306.3 Property Documentation

9.306.3.1 Enable

```
bool Rti.Dds.Core.Policy.TopicQueryDispatch.Enable [get]
```

Allows this writer to dispatch TopicQueries

The full documentation is available in the C API: `DDS_TopicQueryDispatchQosPolicy_enable`

9.306.3.2 PublicationPeriod

```
Duration Rti.Dds.Core.Policy.TopicQueryDispatch.PublicationPeriod [get]
```

Sets the periodic interval at which samples are published.

The full documentation is available in the C API: `DDS_TopicQueryDispatchQosPolicy_publication_period`

9.306.3.3 SamplesPerPeriod

```
int Rti.Dds.Core.Policy.TopicQueryDispatch.SamplesPerPeriod [get]
```

Sets the maximum number of samples to publish in each publication_period.

The full documentation is available in the C API: `DDS_TopicQueryDispatchQosPolicy_samples_per_period`

9.306.3.4 Default

```
TopicQueryDispatch Rti.Dds.Core.Policy.TopicQueryDispatch.Default [static], [get]
```

Singleton containing the default value of a **TopicQueryDispatch** (p. 1175)

9.307 Rti.Dds.Core.Policy.TopicQueryDispatchBuilder Class Reference

A modifiable type used to create an immutable **TopicQueryDispatch** (p. 1175)

Public Member Functions

- **TopicQueryDispatchBuilder** (**TopicQueryDispatch** data)

  Creates a builder with the values of an existing immutable instance
- **TopicQueryDispatch Build** ()

  *Creates a new **TopicQueryDispatch** (p. 1175) immutable object from this one.*

Properties

- bool **Enable** `[get, set]`

  Allows this writer to dispatch TopicQueries
- **Duration PublicationPeriod** `[get, set]`

  Sets the periodic interval at which samples are published.
- int **SamplesPerPeriod** `[get, set]`

  Sets the maximum number of samples to publish in each publication_period.

9.307.1 Detailed Description

A modifiable type used to create an immutable **TopicQueryDispatch** (p. 1175)

9.307.2 Constructor & Destructor Documentation

9.307.2.1 TopicQueryDispatchBuilder()

```
Rti.Dds.Core.Policy.TopicQueryDispatchBuilder.TopicQueryDispatchBuilder (
            TopicQueryDispatch data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.307.3 Member Function Documentation

9.307.3.1 Build()

```
TopicQueryDispatch Rti.Dds.Core.Policy.TopicQueryDispatchBuilder.Build ( )
```

Creates a new **TopicQueryDispatch** (p. 1175) immutable object from this one.

9.307.4 Property Documentation

9.307.4.1 Enable

```
bool Rti.Dds.Core.Policy.TopicQueryDispatchBuilder.Enable [get], [set]
```

Allows this writer to dispatch TopicQueries

The full documentation is available in the C API: DDS_TopicQueryDispatchQosPolicy_enable

9.307.4.2 PublicationPeriod

```
Duration Rti.Dds.Core.Policy.TopicQueryDispatchBuilder.PublicationPeriod [get], [set]
```

Sets the periodic interval at which samples are published.

The full documentation is available in the C API: DDS_TopicQueryDispatchQosPolicy_publication_period

9.307.4.3 SamplesPerPeriod

```
int Rti.Dds.Core.Policy.TopicQueryDispatchBuilder.SamplesPerPeriod [get], [set]
```

Sets the maximum number of samples to publish in each publication_period.

The full documentation is available in the C API: DDS_TopicQueryDispatchQosPolicy_samples_per_period

9.308 Rti.Dds.Core.Policy.TransportBuiltin Class Reference

Specifies which built-in transports are used.

Inherits IEquatable< TransportBuiltin >.

Public Member Functions

- **TransportBuiltin** (**TransportBuiltinMask** mask)

  *Creates an **TransportBuiltin** (p. 1179) policy with the built-in transports specified in the mask*
- **TransportBuiltin With** (Action< **TransportBuiltinBuilder** > build)

  *Creates a new **TransportBuiltin** (p. 1179) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TransportBuiltin** other)

  Compares for equality

Properties

- **TransportBuiltinMask Mask** `[get]`

  *Specifies the built-in transports that are registered automatically when the **Domain.DomainParticipant** (p. 451) is enabled.*
- static **TransportBuiltin Default** `[get]`

  *Singleton containing the default value of a **TransportBuiltin** (p. 1179)*

9.308.1 Detailed Description

Specifies which built-in transports are used.

The full documentation is available in the C API: `DDS_TransportBuiltinQosPolicy`

9.308.2 Constructor & Destructor Documentation

9.308.2.1 TransportBuiltin()

```
Rti.Dds.Core.Policy.TransportBuiltin.TransportBuiltin (
            TransportBuiltinMask mask )
```

Creates an **TransportBuiltin** (p. 1179) policy with the built-in transports specified in the mask

Parameters

mask	

9.308.3 Member Function Documentation

9.308.3.1 With()

```
TransportBuiltin Rti.Dds.Core.Policy.TransportBuiltin.With (
            Action< TransportBuiltinBuilder > build )  [inline]
```

Creates a new **TransportBuiltin** (p. 1179) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportBuiltin** (p. 1179).

Returns

A new **TransportBuiltin** (p. 1179) with the changes applied by the Action

9.308.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportBuiltin.GetHashCode ( )
```

Gets the hash code

9.308.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportBuiltin.Equals (
            object other )
```

Compares for equality

9.308.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportBuiltin.Equals (
             TransportBuiltin other )  [inline]
```

Compares for equality

9.308.4 Property Documentation

9.308.4.1 Mask

```
TransportBuiltinMask Rti.Dds.Core.Policy.TransportBuiltin.Mask  [get]
```

Specifies the built-in transports that are registered automatically when the **Domain.DomainParticipant** (p. 451) is enabled.

The full documentation is available in the C API: `DDS_TransportBuiltinQosPolicy_mask`

9.308.4.2 Default

```
TransportBuiltin Rti.Dds.Core.Policy.TransportBuiltin.Default  [static], [get]
```

Singleton containing the default value of a **TransportBuiltin** (p. 1179)

9.309 Rti.Dds.Core.Policy.TransportBuiltinAlias Class Reference

String aliases for the built-in transports

Static Public Attributes

- const string **Udpv4** = "builtin.udpv4"
  Built-in UDPv4 transport
- const string **Shmem** = "builtin.shmem"
  Built-in shared memory transport
- const string **Udpv6** = "builtin.udpv6"
  Built-in UDPv6 transport
- const string **Udpv4Wan** = "builtin.udpv4_wan"
  Built-in UDPv4 asymmetric transport

9.309.1 Detailed Description

String aliases for the built-in transports

9.309.2 Field Documentation

9.309.2.1 Udpv4

```
const string Rti.Dds.Core.Policy.TransportBuiltinAlias.Udpv4 = "builtin.udpv4"  [static]
```

Built-in UDPv4 transport

9.309.2.2 Shmem

```
const string Rti.Dds.Core.Policy.TransportBuiltinAlias.Shmem = "builtin.shmem"  [static]
```

Built-in shared memory transport

9.309.2.3 Udpv6

```
const string Rti.Dds.Core.Policy.TransportBuiltinAlias.Udpv6 = "builtin.udpv6"  [static]
```

Built-in UDPv6 transport

9.309.2.4 Udpv4Wan

```
const string Rti.Dds.Core.Policy.TransportBuiltinAlias.Udpv4Wan = "builtin.udpv4_wan"  [static]
```

Built-in UDPv4 asymmetric transport

9.310 Rti.Dds.Core.Policy.TransportBuiltinBuilder Class Reference

A modifiable type used to create an immutable **TransportBuiltin** (p. 1179)

Public Member Functions

- **TransportBuiltinBuilder** (**TransportBuiltin** data)

  Creates a builder with the values of an existing immutable instance
- **TransportBuiltin Build** ()

  *Creates a new **TransportBuiltin** (p. 1179) immutable object from this one.*

Properties

- **TransportBuiltinMask Mask** `[get, set]`

  *Specifies the built-in transports that are registered automatically when the **Domain.DomainParticipant** (p. 451) is enabled.*

9.310.1 Detailed Description

A modifiable type used to create an immutable **TransportBuiltin** (p. 1179)

9.310.2 Constructor & Destructor Documentation

9.310.2.1 TransportBuiltinBuilder()

```
Rti.Dds.Core.Policy.TransportBuiltinBuilder.TransportBuiltinBuilder (
            TransportBuiltin data )
```

Creates a builder with the values of an existing immutable instance

9.310.3 Member Function Documentation

9.310.3.1 Build()

```
TransportBuiltin Rti.Dds.Core.Policy.TransportBuiltinBuilder.Build ( )
```

Creates a new **TransportBuiltin** (p. 1179) immutable object from this one.

9.310.4 Property Documentation

9.310.4.1 Mask

```
TransportBuiltinMask Rti.Dds.Core.Policy.TransportBuiltinBuilder.Mask  [get], [set]
```

Specifies the built-in transports that are registered automatically when the **Domain.DomainParticipant** (p. 451) is enabled.

The full documentation is available in the C API:`DDS_TransportBuiltinQosPolicy_mask`

9.311 Rti.Dds.Core.TransportInfo Class Reference

Contains the class id and message max size of an installed transport.

Inherits IEquatable< TransportInfo >.

Public Member Functions

- **TransportInfo With** (Action< **TransportInfoBuilder** > build)
  *Creates a new **TransportInfo** (p. 1184) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**TransportInfo** other)
  Compares for equality

Properties

- **TransportClassId ClassId** [get]

  The class_id identifies the transport associated with the message_size_max.
- int **MessageSizeMax** [get]

  The maximum size of an RTPS message in bytes that can be sent or received by the transport plugin identified by the class_id.
- static **TransportInfo Default** = CreateDefault() [get]

  *Singleton containing the default value of a **TransportInfo** (p. 1184)*

9.311.1 Detailed Description

Contains the class id and message max size of an installed transport.

*The full documentation is available in the C API:*DDS_TransportInfo_t

9.311.2 Member Function Documentation

9.311.2.1 With()

```
TransportInfo Rti.Dds.Core.TransportInfo.With (
            Action< TransportInfoBuilder > build ) [inline]
```

Creates a new **TransportInfo** (p. 1184) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportInfo** (p. 1184).

Returns

A new **TransportInfo** (p. 1184) with the changes applied by the Action

9.311.2.2 GetHashCode()

```
override int Rti.Dds.Core.TransportInfo.GetHashCode ( ) [inline]
```

Gets the hash code

9.311.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.TransportInfo.Equals (
            object other )
```

Compares for equality

9.311.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.TransportInfo.Equals (
             TransportInfo other )  [inline]
```

Compares for equality

9.311.3 Property Documentation

9.311.3.1 ClassId

```
TransportClassId Rti.Dds.Core.TransportInfo.ClassId  [get]
```

The class_id identifies the transport associated with the message_size_max.

The full documentation is available in the C API: `DDS_TransportInfo_t_class_id`

9.311.3.2 MessageSizeMax

```
int Rti.Dds.Core.TransportInfo.MessageSizeMax  [get]
```

The maximum size of an RTPS message in bytes that can be sent or received by the transport plugin identified by the class_id.

The full documentation is available in the C API: `DDS_TransportInfo_t_message_size_max`

9.311.3.3 Default

```
TransportInfo Rti.Dds.Core.TransportInfo.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **TransportInfo** (p. 1184)

9.312 Rti.Dds.Core.TransportInfoBuilder Class Reference

A modifiable type used to create an immutable **TransportInfo** (p. 1184)

Public Member Functions

- **TransportInfoBuilder** (**TransportInfo** data)

  Creates a builder with the values of an existing immutable instance
- **TransportInfo Build** ()

  *Creates a new **TransportInfo** (p. 1184) immutable object from this one.*

Properties

- **TransportClassId ClassId** [get, set]

  The class_id identifies the transport associated with the message_size_max.
- int **MessageSizeMax** [get, set]

  The maximum size of an RTPS message in bytes that can be sent or received by the transport plugin identified by the class_id.

9.312.1 Detailed Description

A modifiable type used to create an immutable **TransportInfo** (p. 1184)

9.312.2 Constructor & Destructor Documentation

9.312.2.1 TransportInfoBuilder()

```
Rti.Dds.Core.TransportInfoBuilder.TransportInfoBuilder (
            TransportInfo data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.312.3 Member Function Documentation

9.312.3.1 Build()

```
TransportInfo Rti.Dds.Core.TransportInfoBuilder.Build ( )
```

Creates a new **TransportInfo** (p. 1184) immutable object from this one.

9.312.4 Property Documentation

9.312.4.1 ClassId

```
TransportClassId Rti.Dds.Core.TransportInfoBuilder.ClassId [get], [set]
```

The class_id identifies the transport associated with the message_size_max.

The full documentation is available in the C API: `DDS_TransportInfo_t_class_id`

9.312.4.2 MessageSizeMax

```
int Rti.Dds.Core.TransportInfoBuilder.MessageSizeMax [get], [set]
```

The maximum size of an RTPS message in bytes that can be sent or received by the transport plugin identified by the class_id.

The full documentation is available in the C API: `DDS_TransportInfo_t_message_size_max`

9.313 Rti.Dds.Core.Policy.TransportMulticast Class Reference

Specifies the multicast address on which a Subscription.DataReader<T> wants to receive its data. It can also specify a port number as well as a subset of the available (at the **Domain.DomainParticipant** (p. 451) level) transports with which to receive the multicast data.

Inherits IEquatable< TransportMulticast >.

Public Member Functions

- **TransportMulticast With** (Action< **TransportMulticastBuilder** > build)

  *Creates a new **TransportMulticast** (p. 1188) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TransportMulticast** other)

  Compares for equality

Properties

- ImmutableList< **TransportMulticastSettings** > **Value** [get]

  *A sequence of multicast communications **TransportMulticastSettings** (p. 1195).*
- **TransportMulticastKind Kind** [get]

  A value that specifies a way to determine how to obtain the multicast address.
- static **TransportMulticast Default** [get]

  *Singleton containing the default value of a **TransportMulticast** (p. 1188)*

9.313.1 Detailed Description

Specifies the multicast address on which a Subscription.DataReader<T> wants to receive its data. It can also specify a port number as well as a subset of the available (at the **Domain.DomainParticipant** (p. 451) level) transports with which to receive the multicast data.

The full documentation is available in the C API: DDS_TransportMulticastQosPolicy

9.313.2 Member Function Documentation

9.313.2.1 With()

```
TransportMulticast Rti.Dds.Core.Policy.TransportMulticast.With (
            Action< TransportMulticastBuilder > build ) [inline]
```

Creates a new **TransportMulticast** (p. 1188) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportMulticast** (p. 1188).

Returns

A new **TransportMulticast** (p. 1188) with the changes applied by the Action

9.313.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportMulticast.GetHashCode ( ) [inline]
```

Gets the hash code

9.313.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportMulticast.Equals (
            object other )
```

Compares for equality

9.313.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportMulticast.Equals (
             TransportMulticast other )  [inline]
```

Compares for equality

9.313.3 Property Documentation

9.313.3.1 Value

```
ImmutableList< TransportMulticastSettings> Rti.Dds.Core.Policy.TransportMulticast.Value  [get]
```

A sequence of multicast communications **TransportMulticastSettings** (p. 1195).

*The full documentation is available in the C API:*DDS_TransportMulticastQosPolicy_value

9.313.3.2 Kind

```
TransportMulticastKind Rti.Dds.Core.Policy.TransportMulticast.Kind  [get]
```

A value that specifies a way to determine how to obtain the multicast address.

*The full documentation is available in the C API:*DDS_TransportMulticastQosPolicy_kind

9.313.3.3 Default

```
TransportMulticast Rti.Dds.Core.Policy.TransportMulticast.Default  [static], [get]
```

Singleton containing the default value of a **TransportMulticast** (p. 1188)

9.314 Rti.Dds.Core.Policy.TransportMulticastBuilder Class Reference

A modifiable type used to create an immutable **TransportMulticast** (p. 1188)

Public Member Functions

- **TransportMulticastBuilder** (**TransportMulticast** data)
  Creates a builder with the values of an existing immutable instance
- **TransportMulticast Build** ()
  *Creates a new **TransportMulticast** (p. 1188) immutable object from this one.*

Properties

- ImmutableList< **TransportMulticastSettings** >.Builder **Value** [get, set]
  *A sequence of multicast communications **TransportMulticastSettings** (p. 1195).*
- **TransportMulticastKind Kind** [get, set]
  A value that specifies a way to determine how to obtain the multicast address.

9.314.1 Detailed Description

A modifiable type used to create an immutable **TransportMulticast** (p. 1188)

9.314.2 Constructor & Destructor Documentation

9.314.2.1 TransportMulticastBuilder()

```
Rti.Dds.Core.Policy.TransportMulticastBuilder.TransportMulticastBuilder (
            TransportMulticast data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.314.3 Member Function Documentation

9.314.3.1 Build()

```
TransportMulticast Rti.Dds.Core.Policy.TransportMulticastBuilder.Build ( )
```

Creates a new **TransportMulticast** (p. 1188) immutable object from this one.

9.314.4 Property Documentation

9.314.4.1 Value

```
ImmutableList< TransportMulticastSettings>.Builder Rti.Dds.Core.Policy.TransportMulticastBuilder.↩
Value [get], [set]
```

A sequence of multicast communications **TransportMulticastSettings** (p. 1195).

The full documentation is available in the C API: `DDS_TransportMulticastQosPolicy_value`

9.314.4.2 Kind

```
TransportMulticastKind Rti.Dds.Core.Policy.TransportMulticastBuilder.Kind [get], [set]
```

A value that specifies a way to determine how to obtain the multicast address.

The full documentation is available in the C API: `DDS_TransportMulticastQosPolicy_kind`

9.315 Rti.Dds.Core.Policy.TransportMulticastMapping Class Reference

Specifies a list of topic_expressions and multicast addresses that can be used by an **Entity** (p. 596) with a specific topic name to receive data.

Inherits IEquatable< TransportMulticastMapping >.

Public Member Functions

- **TransportMulticastMapping** (IEnumerable< **MulticastMapping** > value)

  *Creates a **TransportMulticastMapping** (p. 1192) object with a list of settings*
- **TransportMulticastMapping** (MappingList value)

  *Creates a **TransportMulticastMapping** (p. 1192) object with a list of settings*
- **TransportMulticastMapping With** (Action< MappingList.Builder > build)

  *Creates a new **TransportMulticastMapping** (p. 1192) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TransportMulticastMapping** other)

  Compares for equality

Properties

- MappingList **Value** [get]

  A sequence of multicast communication mappings.
- static **TransportMulticastMapping Default** = new **TransportMulticastMapping**(MappingList.Empty) [get]

  *Singleton containing the default value of a **TransportMulticastMapping** (p. 1192)*

9.315.1 Detailed Description

Specifies a list of topic_expressions and multicast addresses that can be used by an **Entity** (p. 596) with a specific topic name to receive data.

9.315.2 Constructor & Destructor Documentation

9.315.2.1 TransportMulticastMapping() [1/2]

```
Rti.Dds.Core.Policy.TransportMulticastMapping.TransportMulticastMapping (
            IEnumerable< MulticastMapping > value ) [inline]
```

Creates a **TransportMulticastMapping** (p. 1192) object with a list of settings

9.315.2.2 TransportMulticastMapping() [2/2]

```
Rti.Dds.Core.Policy.TransportMulticastMapping.TransportMulticastMapping (
            MappingList value )
```

Creates a **TransportMulticastMapping** (p. 1192) object with a list of settings

9.315.3 Member Function Documentation

9.315.3.1 With()

```
TransportMulticastMapping Rti.Dds.Core.Policy.TransportMulticastMapping.With (
            Action< MappingList.Builder > build ) [inline]
```

Creates a new **TransportMulticastMapping** (p. 1192) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a list builder with the current settings of this **TransportMulticastMapping** (p. 1192) and allows adding, removing, or replacing.

Returns

A new **TransportMulticastMapping** (p. 1192) with the changes applied by the Action

9.315.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportMulticastMapping.GetHashCode ( )  [inline]
```

Gets the hash code

9.315.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportMulticastMapping.Equals (
            object other )
```

Compares for equality

9.315.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportMulticastMapping.Equals (
             TransportMulticastMapping other )  [inline]
```

Compares for equality

9.315.4 Property Documentation

9.315.4.1 Value

```
MappingList Rti.Dds.Core.Policy.TransportMulticastMapping.Value  [get]
```

A sequence of multicast communication mappings.

The full documentation is available in the C API: DDS_TransportMulticastMappingQosPolicy_value

9.315.4.2 Default

TransportMulticastMapping Rti.Dds.Core.Policy.TransportMulticastMapping.Default = new **TransportMulticastMapping**(MappingList.Empty) [static], [get]

Singleton containing the default value of a **TransportMulticastMapping** (p. 1192)

9.316 Rti.Dds.Core.Policy.TransportMulticastSettings Class Reference

Represents a list of multicast locators.

Inherits IEquatable< TransportMulticastSettings >.

Public Member Functions

- **TransportMulticastSettings With** (Action< **TransportMulticastSettingsBuilder** > build)
  *Creates a new **TransportMulticastSettings** (p. 1195) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**TransportMulticastSettings** other)
  Compares for equality

Properties

- ImmutableList< string > **Transports** [get]
  A sequence of transport aliases that specifies the transports on which to receive multicast traffic for the entity.
- string **ReceiveAddress** [get]
  The multicast group address on which the entity can receive data.
- int **ReceivePort** [get]
  The multicast port on which the entity can receive data.
- static **TransportMulticastSettings Default** = CreateDefault() [get]
  *Singleton containing the default value of a **TransportMulticastSettings** (p. 1195)*

9.316.1 Detailed Description

Represents a list of multicast locators.

The full documentation is available in the C API: DDS_TransportMulticastSettings_t

9.316.2 Member Function Documentation

9.316.2.1 With()

TransportMulticastSettings Rti.Dds.Core.Policy.TransportMulticastSettings.With (Action< **TransportMulticastSettingsBuilder** > *build*) [inline]

Creates a new **TransportMulticastSettings** (p. 1195) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportMulticastSettings** (p. 1195).

Returns

A new **TransportMulticastSettings** (p. 1195) with the changes applied by the Action

9.316.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportMulticastSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.316.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportMulticastSettings.Equals (
            object other )
```

Compares for equality

9.316.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportMulticastSettings.Equals (
             TransportMulticastSettings other )  [inline]
```

Compares for equality

9.316.3 Property Documentation

9.316.3.1 Transports

```
ImmutableList<string> Rti.Dds.Core.Policy.TransportMulticastSettings.Transports  [get]
```

A sequence of transport aliases that specifies the transports on which to receive multicast traffic for the entity.

The full documentation is available in the C API: DDS_TransportMulticastSettings_t_transports

9.316.3.2 ReceiveAddress

```
string Rti.Dds.Core.Policy.TransportMulticastSettings.ReceiveAddress [get]
```

The multicast group address on which the entity can receive data.

The full documentation is available in the C API: DDS_TransportMulticastSettings_t_receive_address

9.316.3.3 ReceivePort

```
int Rti.Dds.Core.Policy.TransportMulticastSettings.ReceivePort [get]
```

The multicast port on which the entity can receive data.

The full documentation is available in the C API: DDS_TransportMulticastSettings_t_receive_port

9.316.3.4 Default

```
TransportMulticastSettings Rti.Dds.Core.Policy.TransportMulticastSettings.Default = CreateDefault() [static], [get]
```

Singleton containing the default value of a **TransportMulticastSettings** (p. 1195)

9.317 Rti.Dds.Core.Policy.TransportMulticastSettingsBuilder Class Reference

A modifiable type used to create an immutable **TransportMulticastSettings** (p. 1195)

Public Member Functions

- **TransportMulticastSettingsBuilder** (**TransportMulticastSettings** data)
  Creates a builder with the values of an existing immutable instance
- **TransportMulticastSettings Build** ()
  *Creates a new **TransportMulticastSettings** (p. 1195) immutable object from this one.*

Properties

- ImmutableList< string >.Builder **Transports** [get, set]
  A sequence of transport aliases that specifies the transports on which to receive multicast traffic for the entity.
- string **ReceiveAddress** [get, set]
  The multicast group address on which the entity can receive data.
- int **ReceivePort** [get, set]
  The multicast port on which the entity can receive data.

9.317.1 Detailed Description

A modifiable type used to create an immutable **TransportMulticastSettings** (p. 1195)

9.317.2 Constructor & Destructor Documentation

9.317.2.1 TransportMulticastSettingsBuilder()

```
Rti.Dds.Core.Policy.TransportMulticastSettingsBuilder.TransportMulticastSettingsBuilder (
            TransportMulticastSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.317.3 Member Function Documentation

9.317.3.1 Build()

```
TransportMulticastSettings Rti.Dds.Core.Policy.TransportMulticastSettingsBuilder.Build ( )
```

Creates a new **TransportMulticastSettings** (p. 1195) immutable object from this one.

9.317.4 Property Documentation

9.317.4.1 Transports

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.TransportMulticastSettingsBuilder.Transports
[get], [set]
```

A sequence of transport aliases that specifies the transports on which to receive *multicast* traffic for the entity.

The full documentation is available in the C API: DDS_TransportMulticastSettings_t_transports

9.317.4.2 ReceiveAddress

```
string Rti.Dds.Core.Policy.TransportMulticastSettingsBuilder.ReceiveAddress  [get], [set]
```

The multicast group address on which the entity can receive data.

The full documentation is available in the C API: DDS_TransportMulticastSettings_t_receive_address

9.317.4.3 ReceivePort

```
int Rti.Dds.Core.Policy.TransportMulticastSettingsBuilder.ReceivePort  [get], [set]
```

The multicast port on which the entity can receive data.

The full documentation is available in the C API: DDS_TransportMulticastSettings_t_receive_port

9.318 Rti.Dds.Core.Policy.TransportPriority Class Reference

Allows the application to take advantage of transports that are capable of sending messages with different priorities.

Inherits IEquatable< TransportPriority >.

Public Member Functions

- **TransportPriority** (int value)
  Creates a new instance
- **TransportPriority With** (Action< **TransportPriorityBuilder** > build)
  *Creates a new **TransportPriority** (p. 1199) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**TransportPriority** other)
  Compares for equality

Properties

- int **Value** [get]
  This policy is a hint to the infrastructure as to how to set the priority of the underlying transport used to send the data.
- static **TransportPriority Default** [get]
  *Singleton containing the default value of a **TransportPriority** (p. 1199)*

9.318.1 Detailed Description

Allows the application to take advantage of transports that are capable of sending messages with different priorities.

9.318.2 Constructor & Destructor Documentation

9.318.2.1 TransportPriority()

```
Rti.Dds.Core.Policy.TransportPriority.TransportPriority (
            int value )
```

Creates a new instance

Parameters

value	The priority value

9.318.3 Member Function Documentation

9.318.3.1 With()

```
TransportPriority Rti.Dds.Core.Policy.TransportPriority.With (
            Action< TransportPriorityBuilder > build )  [inline]
```

Creates a new **TransportPriority** (p. 1199) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportPriority** (p. 1199).

Returns

A new **TransportPriority** (p. 1199) with the changes applied by the Action

9.318.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportPriority.GetHashCode ( )  [inline]
```

Gets the hash code

9.318.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportPriority.Equals (
            object other )
```

Compares for equality

9.318.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportPriority.Equals (
             TransportPriority other )  [inline]
```

Compares for equality

9.318.4 Property Documentation

9.318.4.1 Value

```
int Rti.Dds.Core.Policy.TransportPriority.Value  [get]
```

This policy is a hint to the infrastructure as to how to set the priority of the underlying transport used to send the data.

The full documentation is available in the C API: DDS_TransportPriorityQosPolicy_value

9.318.4.2 Default

```
TransportPriority Rti.Dds.Core.Policy.TransportPriority.Default  [static], [get]
```

Singleton containing the default value of a **TransportPriority** (p. 1199)

9.319 Rti.Dds.Core.Policy.TransportPriorityBuilder Class Reference

A modifiable type used to create an immutable **TransportPriority** (p. 1199)

Public Member Functions

- **TransportPriorityBuilder** (**TransportPriority** data)

  Creates a builder with the values of an existing immutable instance
- **TransportPriority Build** ()

  *Creates a new **TransportPriority** (p. 1199) immutable object from this one.*

Properties

- int **Value** `[get, set]`

  This policy is a hint to the infrastructure as to how to set the priority of the underlying transport used to send the data.

9.319.1 Detailed Description

A modifiable type used to create an immutable **TransportPriority** (p. 1199)

9.319.2 Constructor & Destructor Documentation

9.319.2.1 TransportPriorityBuilder()

```
Rti.Dds.Core.Policy.TransportPriorityBuilder.TransportPriorityBuilder (
            TransportPriority data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.319.3 Member Function Documentation

9.319.3.1 Build()

```
TransportPriority Rti.Dds.Core.Policy.TransportPriorityBuilder.Build ( )
```

Creates a new **TransportPriority** (p. 1199) immutable object from this one.

9.319.4 Property Documentation

9.319.4.1 Value

```
int Rti.Dds.Core.Policy.TransportPriorityBuilder.Value [get], [set]
```

This policy is a hint to the infrastructure as to how to set the priority of the underlying transport used to send the data.

The full documentation is available in the C API: `DDS_TransportPriorityQosPolicy_value`

9.320 Rti.Dds.Core.Policy.TransportSelection Class Reference

Specifies the transports that a Publication.DataWriter<T> or a Subscription.DataReader<T> may use to send or receive data.

Inherits IEquatable< TransportSelection >.

Public Member Functions

- **TransportSelection** (IEnumerable< string > enabledTransports)
  *Creates a new **TransportSelection** (p. 1203) object using a list of its enabled transports*
- **TransportSelection With** (Action< **TransportSelectionBuilder** > build)
  *Creates a new **TransportSelection** (p. 1203) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**TransportSelection** other)
  Compares for equality

Properties

- ImmutableList< string > **EnabledTransports** `[get]`
  A sequence of transport aliases that specifies the transport instances available for use by the entity.
- static **TransportSelection Default** `[get]`
  *Singleton containing the default value of a **TransportSelection** (p. 1203)*

9.320.1 Detailed Description

Specifies the transports that a Publication.DataWriter<T> or a Subscription.DataReader<T> may use to send or receive data.

The full documentation is available in the C API: `DDS_TransportSelectionQosPolicy_enabled_↩transports`

9.320.2 Constructor & Destructor Documentation

9.320.2.1 TransportSelection()

```
Rti.Dds.Core.Policy.TransportSelection.TransportSelection (
            IEnumerable< string > enabledTransports )
```

Creates a new **TransportSelection** (p. 1203) object using a list of its enabled transports

9.320.3 Member Function Documentation

9.320.3.1 With()

```
TransportSelection Rti.Dds.Core.Policy.TransportSelection.With (
            Action< TransportSelectionBuilder > build )  [inline]
```

Creates a new **TransportSelection** (p. 1203) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportSelection** (p. 1203).

Returns

A new **TransportSelection** (p. 1203) with the changes applied by the Action

9.320.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportSelection.GetHashCode ( )  [inline]
```

Gets the hash code

9.320.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportSelection.Equals (
            object other )
```

Compares for equality

9.320.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportSelection.Equals (
             TransportSelection other )  [inline]
```

Compares for equality

9.320.4 Property Documentation

9.320.4.1 EnabledTransports

```
ImmutableList<string> Rti.Dds.Core.Policy.TransportSelection.EnabledTransports  [get]
```

A sequence of transport aliases that specifies the transport instances available for use by the entity.

The full documentation is available in the C API: DDS_TransportSelectionQosPolicy_enabled_↩ transports

9.320.4.2 Default

```
TransportSelection Rti.Dds.Core.Policy.TransportSelection.Default  [static], [get]
```

Singleton containing the default value of a **TransportSelection** (p. 1203)

9.321 Rti.Dds.Core.Policy.TransportSelectionBuilder Class Reference

A modifiable type used to create an immutable **TransportSelection** (p. 1203)

Public Member Functions

- **TransportSelectionBuilder** (**TransportSelection** data)

  Creates a builder with the values of an existing immutable instance
- **TransportSelection Build** ()

  *Creates a new **TransportSelection** (p. 1203) immutable object from this one.*

Properties

- ImmutableList< string >.Builder **EnabledTransports** `[get, set]`

  A sequence of transport aliases that specifies the transport instances available for use by the entity.

9.321.1 Detailed Description

A modifiable type used to create an immutable **TransportSelection** (p. 1203)

9.321.2 Constructor & Destructor Documentation

9.321.2.1 TransportSelectionBuilder()

```
Rti.Dds.Core.Policy.TransportSelectionBuilder.TransportSelectionBuilder (
            TransportSelection data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.321.3 Member Function Documentation

9.321.3.1 Build()

```
TransportSelection Rti.Dds.Core.Policy.TransportSelectionBuilder.Build ( )
```

Creates a new **TransportSelection** (p. 1203) immutable object from this one.

9.321.4 Property Documentation

9.321.4.1 EnabledTransports

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.TransportSelectionBuilder.EnabledTransports
[get], [set]
```

A sequence of transport aliases that specifies the transport instances available for use by the entity.

The full documentation is available in the C API: `DDS_TransportSelectionQosPolicy_enabled_↩ transports`

9.322 Rti.Dds.Core.Policy.TransportUnicast Class Reference

Specifies a subset of transports and a port number that can be used by an **Entity** (p. 596) to receive data.

Inherits IEquatable< TransportUnicast >.

Public Member Functions

- **TransportUnicast** (IEnumerable< **TransportUnicastSettings** > value)
  *Creates a **TransportUnicast** (p. 1207) object with a list of settings*
- **TransportUnicast** (SettingsList value)
  *Creates a **TransportUnicast** (p. 1207) object with a list of settings*
- **TransportUnicast With** (Action< SettingsList.Builder > build)
  *Creates a new **TransportUnicast** (p. 1207) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**TransportUnicast** other)
  Compares for equality

Properties

- SettingsList **Value** `[get]`
  A sequence of unicast communication settings.
- static **TransportUnicast Default** = new **TransportUnicast**(SettingsList.Empty) `[get]`
  *Singleton containing the default value of a **TransportUnicast** (p. 1207)*

9.322.1 Detailed Description

Specifies a subset of transports and a port number that can be used by an **Entity** (p. 596) to receive data.

9.322.2 Constructor & Destructor Documentation

9.322.2.1 TransportUnicast() [1/2]

```
Rti.Dds.Core.Policy.TransportUnicast.TransportUnicast (
            IEnumerable< TransportUnicastSettings > value ) [inline]
```

Creates a **TransportUnicast** (p. 1207) object with a list of settings

9.322.2.2 TransportUnicast() [2/2]

```
Rti.Dds.Core.Policy.TransportUnicast.TransportUnicast (
            SettingsList value )
```

Creates a **TransportUnicast** (p. 1207) object with a list of settings

9.322.3 Member Function Documentation

9.322.3.1 With()

```
TransportUnicast Rti.Dds.Core.Policy.TransportUnicast.With (
            Action< SettingsList.Builder > build ) [inline]
```

Creates a new **TransportUnicast** (p. 1207) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a list builder with the current settings of this **TransportUnicast** (p. 1207) and allows adding, removing, or replacing.

Returns

A new **TransportUnicast** (p. 1207) with the changes applied by the Action

9.322.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportUnicast.GetHashCode ( )
```

Gets the hash code

9.322.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportUnicast.Equals (
            object other )
```

Compares for equality

9.322.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportUnicast.Equals (
             TransportUnicast other )  [inline]
```

Compares for equality

9.322.4 Property Documentation

9.322.4.1 Value

```
SettingsList Rti.Dds.Core.Policy.TransportUnicast.Value  [get]
```

A sequence of unicast communication settings.

The full documentation is available in the C API: DDS_TransportUnicastQosPolicy_value

9.322.4.2 Default

```
 TransportUnicast Rti.Dds.Core.Policy.TransportUnicast.Default = new  TransportUnicast(Settings↩
List.Empty)  [static], [get]
```

Singleton containing the default value of a **TransportUnicast** (p. 1207)

9.323 Rti.Dds.Core.Policy.TransportUnicastSettings Class Reference

Specifies a list of unicast locators and a unicast port.

Inherits IEquatable< TransportUnicastSettings >.

Public Member Functions

- **TransportUnicastSettings With** (Action< **TransportUnicastSettingsBuilder** > build)

  *Creates a new **TransportUnicastSettings** (p. 1210) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TransportUnicastSettings** other)

  Compares for equality

Properties

- ImmutableList< string > **Transports** `[get]`

  *A sequence of transport aliases that specifies the unicast interfaces on which to receive unicast traffic for the entity. The built-in aliases are defined in **TransportBuiltinAlias** (p. 1182).*
- int **ReceivePort** `[get]`

  The unicast port on which the entity can receive data.
- static **TransportUnicastSettings Default** `[get]`

  *Singleton containing the default value of a **TransportUnicastSettings** (p. 1210)*

9.323.1 Detailed Description

Specifies a list of unicast locators and a unicast port.

9.323.2 Member Function Documentation

9.323.2.1 With()

```
TransportUnicastSettings Rti.Dds.Core.Policy.TransportUnicastSettings.With (
            Action<  TransportUnicastSettingsBuilder > build )  [inline]
```

Creates a new **TransportUnicastSettings** (p. 1210) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TransportUnicastSettings** (p. 1210).

Returns

A new **TransportUnicastSettings** (p. 1210) with the changes applied by the Action

9.323.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TransportUnicastSettings.GetHashCode ( )  [inline]
```

Gets the hash code

9.323.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TransportUnicastSettings.Equals (
            object other )
```

Compares for equality

9.323.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TransportUnicastSettings.Equals (
             TransportUnicastSettings other )  [inline]
```

Compares for equality

9.323.3 Property Documentation

9.323.3.1 Transports

```
ImmutableList<string> Rti.Dds.Core.Policy.TransportUnicastSettings.Transports  [get]
```

A sequence of transport aliases that specifies the unicast interfaces on which to receive unicast traffic for the entity. The built-in aliases are defined in **TransportBuiltinAlias** (p. 1182).

The full documentation is available in the C API: DDS_TransportUnicastSettings_t_transports

9.323.3.2 ReceivePort

```
int Rti.Dds.Core.Policy.TransportUnicastSettings.ReceivePort  [get]
```

The unicast port on which the entity can receive data.

The full documentation is available in the C API: `DDS_TransportUnicastSettings_t_receive_port`

9.323.3.3 Default

```
TransportUnicastSettings Rti.Dds.Core.Policy.TransportUnicastSettings.Default  [static], [get]
```

Initial value:

```
=
            new TransportUnicastSettings(new TransportUnicastSettingsBuilder()
            {
                Transports = ImmutableList<string>.Empty.ToBuilder()
            })
```

Singleton containing the default value of a **TransportUnicastSettings** (p. 1210)

9.324 Rti.Dds.Core.Policy.TransportUnicastSettingsBuilder Class Reference

A modifiable type used to create an immutable **TransportUnicastSettings** (p. 1210)

Public Member Functions

- **TransportUnicastSettingsBuilder** (**TransportUnicastSettings** data)

  Creates a builder with the values of an existing immutable instance
- **TransportUnicastSettings Build** ()

  *Creates a new **TransportUnicastSettings** (p. 1210) immutable object from this one.*

Properties

- ImmutableList< string >.Builder **Transports** `[get, set]`

  A sequence of transport aliases that specifies the unicast interfaces on which to receive unicast traffic for the entity.
- int **ReceivePort** `[get, set]`

  The unicast port on which the entity can receive data.

9.324.1 Detailed Description

A modifiable type used to create an immutable **TransportUnicastSettings** (p. 1210)

9.324.2 Constructor & Destructor Documentation

9.324.2.1 TransportUnicastSettingsBuilder()

```
Rti.Dds.Core.Policy.TransportUnicastSettingsBuilder.TransportUnicastSettingsBuilder (
            TransportUnicastSettings data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.324.3 Member Function Documentation

9.324.3.1 Build()

```
TransportUnicastSettings Rti.Dds.Core.Policy.TransportUnicastSettingsBuilder.Build ( )
```

Creates a new **TransportUnicastSettings** (p. 1210) immutable object from this one.

9.324.4 Property Documentation

9.324.4.1 Transports

```
ImmutableList<string>.Builder Rti.Dds.Core.Policy.TransportUnicastSettingsBuilder.Transports
[get], [set]
```

A sequence of transport aliases that specifies the unicast interfaces on which to receive *unicast* traffic for the entity.

The full documentation is available in the C API: `DDS_TransportUnicastSettings_t_transports`

9.324.4.2 ReceivePort

```
int Rti.Dds.Core.Policy.TransportUnicastSettingsBuilder.ReceivePort  [get], [set]
```

The unicast port on which the entity can receive data.

The full documentation is available in the C API: `DDS_TransportUnicastSettings_t_receive_port`

9.325 Rti.Dds.Core.Policy.TypeConsistencyEnforcement Class Reference

Defines the rules that determine whether the type used to publish a given Topics.Topic<T> is consistent with that used to subscribe to it.

Inherits IEquatable< TypeConsistencyEnforcement >.

Public Member Functions

- **TypeConsistencyEnforcement With** (Action< **TypeConsistencyEnforcementBuilder** > build)

  *Creates a new **TypeConsistencyEnforcement** (p. 1214) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TypeConsistencyEnforcement** other)

  Compares for equality

Properties

- **TypeConsistencyKind Kind** `[get]`

  Type consistency kind.
- bool **IgnoreSequenceBounds** `[get]`

  Controls whether sequence bounds are taken into consideration for type assignability.
- bool **IgnoreStringBounds** `[get]`

  Controls whether string bounds are taken into consideration for type assignability.
- bool **IgnoreMemberNames** `[get]`

  Controls whether member names are taken into consideration for type assignability.
- bool **PreventTypeWidening** `[get]`

  Controls whether type widening is allowed.
- bool **ForceTypeValidation** `[get]`

  Controls whether type information must be available in order to complete matching between a Publication.DataWriter<T> and a Subscription.DataReader<T>.
- bool **IgnoreEnumLiteralNames** `[get]`

  Controls whether enumeration constant names are taken into consideration for type assignability.
- static **TypeConsistencyEnforcement Default** `[get]`

  *Singleton containing the default value of a **TypeConsistencyEnforcement** (p. 1214)*

9.325.1 Detailed Description

Defines the rules that determine whether the type used to publish a given Topics.Topic<T> is consistent with that used to subscribe to it.

The full documentation is available in the C API: `DDS_TypeConsistencyEnforcementQosPolicy`

9.325.2 Member Function Documentation

9.325.2.1 With()

```
TypeConsistencyEnforcement Rti.Dds.Core.Policy.TypeConsistencyEnforcement.With (
            Action< TypeConsistencyEnforcementBuilder > build )  [inline]
```

Creates a new **TypeConsistencyEnforcement** (p. 1214) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TypeConsistencyEnforcement** (p. 1214).

Returns

A new **TypeConsistencyEnforcement** (p. 1214) with the changes applied by the Action

9.325.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TypeConsistencyEnforcement.GetHashCode ( )  [inline]
```

Gets the hash code

9.325.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.Equals (
            object other )
```

Compares for equality

9.325.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.Equals (
             TypeConsistencyEnforcement other )  [inline]
```

Compares for equality

9.325.3 Property Documentation

9.325.3.1 Kind

TypeConsistencyKind Rti.Dds.Core.Policy.TypeConsistencyEnforcement.Kind [get]

Type consistency kind.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_kind

9.325.3.2 IgnoreSequenceBounds

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.IgnoreSequenceBounds [get]

Controls whether sequence bounds are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_sequence_bounds

9.325.3.3 IgnoreStringBounds

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.IgnoreStringBounds [get]

Controls whether string bounds are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_string_bounds

9.325.3.4 IgnoreMemberNames

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.IgnoreMemberNames [get]

Controls whether member names are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_member_names

9.325.3.5 PreventTypeWidening

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.PreventTypeWidening [get]

Controls whether type widening is allowed.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ prevent_type_widening

9.325.3.6 ForceTypeValidation

```
bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.ForceTypeValidation [get]
```

Controls whether type information must be available in order to complete matching between a Publication.DataWriter<↩ T> and a Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ force_type_validation

9.325.3.7 IgnoreEnumLiteralNames

```
bool Rti.Dds.Core.Policy.TypeConsistencyEnforcement.IgnoreEnumLiteralNames [get]
```

Controls whether enumeration constant names are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_enum_literal_names

9.325.3.8 Default

```
TypeConsistencyEnforcement Rti.Dds.Core.Policy.TypeConsistencyEnforcement.Default [static],
[get]
```

Singleton containing the default value of a **TypeConsistencyEnforcement** (p. 1214)

9.326 Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder Class Reference

A modifiable type used to create an immutable **TypeConsistencyEnforcement** (p. 1214)

Public Member Functions

- **TypeConsistencyEnforcementBuilder** (**TypeConsistencyEnforcement** data)
  Creates a builder with the values of an existing immutable instance
- **TypeConsistencyEnforcement Build** ()
  *Creates a new **TypeConsistencyEnforcement** (p. 1214) immutable object from this one.*

Properties

- **TypeConsistencyKind Kind** [get, set]

  Type consistency kind.
- bool **IgnoreSequenceBounds** [get, set]

  Controls whether sequence bounds are taken into consideration for type assignability.
- bool **IgnoreStringBounds** [get, set]

  Controls whether string bounds are taken into consideration for type assignability.
- bool **IgnoreMemberNames** [get, set]

  Controls whether member names are taken into consideration for type assignability.
- bool **PreventTypeWidening** [get, set]

  Controls whether type widening is allowed.
- bool **ForceTypeValidation** [get, set]

  Controls whether type information must be available in order to complete matching between a Publication.DataWriter<T> and a Subscription.DataReader<T>.
- bool **IgnoreEnumLiteralNames** [get, set]

  Controls whether enumeration constant names are taken into consideration for type assignability.

9.326.1 Detailed Description

A modifiable type used to create an immutable **TypeConsistencyEnforcement** (p. 1214)

9.326.2 Constructor & Destructor Documentation

9.326.2.1 TypeConsistencyEnforcementBuilder()

```
Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.TypeConsistencyEnforcementBuilder (
            TypeConsistencyEnforcement data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.326.3 Member Function Documentation

9.326.3.1 Build()

```
TypeConsistencyEnforcement Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.Build ( )
```

Creates a new **TypeConsistencyEnforcement** (p. 1214) immutable object from this one.

9.326.4 Property Documentation

9.326.4.1 Kind

TypeConsistencyKind Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.Kind [get], [set]

Type consistency kind.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_kind

9.326.4.2 IgnoreSequenceBounds

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.IgnoreSequenceBounds [get], [set]

Controls whether sequence bounds are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_sequence_bounds

9.326.4.3 IgnoreStringBounds

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.IgnoreStringBounds [get], [set]

Controls whether string bounds are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_string_bounds

9.326.4.4 IgnoreMemberNames

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.IgnoreMemberNames [get], [set]

Controls whether member names are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_member_names

9.326.4.5 PreventTypeWidening

bool Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.PreventTypeWidening [get], [set]

Controls whether type widening is allowed.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ prevent_type_widening

9.326.4.6 ForceTypeValidation

```
bool Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.ForceTypeValidation [get], [set]
```

Controls whether type information must be available in order to complete matching between a Publication.DataWriter<↩ T> and a Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ force_type_validation

9.326.4.7 IgnoreEnumLiteralNames

```
bool Rti.Dds.Core.Policy.TypeConsistencyEnforcementBuilder.IgnoreEnumLiteralNames [get], [set]
```

Controls whether enumeration constant names are taken into consideration for type assignability.

The full documentation is available in the C API: DDS_TypeConsistencyEnforcementQosPolicy_↩ ignore_enum_literal_names

9.327 Rti.Types.Dynamic.TypeSerializationProperty Class Reference

Properties that govern how data of a certain type will be serialized on the network.

Inherits IEquatable< TypeSerializationProperty >.

Public Member Functions

- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**TypeSerializationProperty** other)
  Compares for equality

Properties

- bool **TrimToSize** [get, set]
  *Controls the growth of the buffer in a **DynamicData** (p. 564) object.*

9.327.1 Detailed Description

Properties that govern how data of a certain type will be serialized on the network.

9.327.2 Member Function Documentation

9.327.2.1 GetHashCode()

```
override int Rti.Types.Dynamic.TypeSerializationProperty.GetHashCode ( )
```

Gets the hash code

9.327.2.2 Equals() [1/2]

```
override bool Rti.Types.Dynamic.TypeSerializationProperty.Equals (
            object other )
```

Compares for equality

9.327.2.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.TypeSerializationProperty.Equals (
             TypeSerializationProperty other )  [inline]
```

Compares for equality

9.327.3 Property Documentation

9.327.3.1 TrimToSize

```
bool Rti.Types.Dynamic.TypeSerializationProperty.TrimToSize  [get], [set]
```

Controls the growth of the buffer in a **DynamicData** (p. 564) object.

The full documentation is available in the C API: DDS_DynamicDataTypeSerializationProperty_t_↩ trim_to_size

9.328 Rti.Dds.Core.Policy.TypeSupport Class Reference

Used to attach application-specific value(s) to a Publication.DataWriter<T> or Subscription.DataReader<T>.

Inherits IEquatable< TypeSupport >.

Public Member Functions

- **TypeSupport With** (Action< **TypeSupportBuilder** > build)

  *Creates a new **TypeSupport** (p. 1222) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**TypeSupport** other)

  Compares for equality

Properties

- IntPtr **PluginData** [get]

  Value to pass into the type plugin's de-/serialization function
- **CdrPaddingKind CdrPaddingKind** [get]

  Determines whether or not the padding bytes will be set to zero during CDR serialization.
- static **TypeSupport Default** [get]

  *Singleton containing the default value of a **DataWriterProtocol** (p. 346)*

9.328.1 Detailed Description

Used to attach application-specific value(s) to a Publication.DataWriter<T> or Subscription.DataReader<T>.

The full documentation is available in the C API: DDS_TypeSupportQosPolicy

9.328.2 Member Function Documentation

9.328.2.1 With()

```
TypeSupport Rti.Dds.Core.Policy.TypeSupport.With (
            Action< TypeSupportBuilder > build ) [inline]
```

Creates a new **TypeSupport** (p. 1222) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **TypeSupport** (p. 1222).

Returns

A new **TypeSupport** (p. 1222) with the changes applied by the Action

9.328.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.TypeSupport.GetHashCode ( )  [inline]
```

Gets the hash code

9.328.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.TypeSupport.Equals (
            object other )
```

Compares for equality

9.328.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.TypeSupport.Equals (
             TypeSupport other )  [inline]
```

Compares for equality

9.328.3 Property Documentation

9.328.3.1 PluginData

```
IntPtr Rti.Dds.Core.Policy.TypeSupport.PluginData  [get]
```

Value to pass into the type plugin's de-/serialization function

The full documentation is available in the C API: DDS_TypeSupportQosPolicy_plugin_data

9.328.3.2 CdrPaddingKind

CdrPaddingKind Rti.Dds.Core.Policy.TypeSupport.CdrPaddingKind [get]

Determines whether or not the padding bytes will be set to zero during CDR serialization.

The full documentation is available in the C API: DDS_TypeSupportQosPolicy_cdr_padding_kind

9.328.3.3 Default

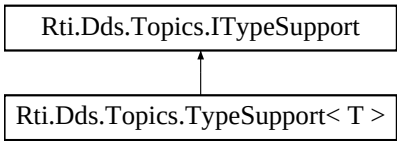
TypeSupport Rti.Dds.Core.Policy.TypeSupport.Default [static], [get]

Singleton containing the default value of a **DataWriterProtocol** (p. 346)

9.329 Rti.Dds.Topics.TypeSupport< T > Class Template Reference

Base class for IDL-generated type support classes. It allows getting the **DynamicType** (p. 1228) that describes the type T.

Inheritance diagram for Rti.Dds.Topics.TypeSupport< T >:



Public Member Functions

- **ISerializer**< T > **CreateSerializer** (short dataRepresentation= **Core.Policy.DataRepresentation.Xcdr**)

  *Creates an **ISerializer** (p. 673) that allows serializing and deserializing data as byte arrays.*
- string **ToString** (T sample)

  Converts a data sample into a readable string.
- string **ToString** (T sample, **PrintFormatProperty** format)

  Converts a data sample into a string representation such as XML or JSON according to the specified formatting options.
- T **FromString** (string str, **PrintFormatKind** formatKind= **PrintFormatKind.Json**)

  Creates a data sample from a JSON string representation
- **DynamicType** **GetDynamicTypeInternal** (bool isPublic=true)

  For internal use only.
- virtual void **RegisterType** (**DomainParticipant** participant, string typeName)

  For internal use only.
- TAttribute **GetAttribute**< **TAttribute** > (string propertyName)

  *Gets an Attribute (such as **Omg.Types.KeyAttribute** (p. 687)) from a property of this **TypeSupport** (p. 1224)'s type, T.*
- virtual void **Dispose** ()

  For internal use only.

Protected Member Functions

- **TypeSupport** (**ITypePlugin** plugin, Lazy< **DynamicType** > dynamicTypeConstructor)
  For internal use only.

Properties

- **DynamicType DynamicType** [get]
  The DynamicType that describes the IDL type T.

9.329.1 Detailed Description

Base class for IDL-generated type support classes. It allows getting the **DynamicType** (p. 1228) that describes the type T.

Template Parameters

T	The IDL type managed by this **TypeSupport** (p. 1224)

9.329.2 Constructor & Destructor Documentation

9.329.2.1 TypeSupport()

```
Rti.Dds.Topics.TypeSupport< T >.  TypeSupport (
            ITypePlugin plugin,
          Lazy<  DynamicType > dynamicTypeConstructor )  [inline], [protected]
```

For internal use only.

9.329.3 Member Function Documentation

9.329.3.1 CreateSerializer()

```
ISerializer< T >  Rti.Dds.Topics.TypeSupport< T >.CreateSerializer (
          short dataRepresentation =  Core.Policy.DataRepresentation.Xcdr )
```

Creates an **ISerializer** (p. 673) that allows serializing and deserializing data as byte arrays.

Parameters

dataRepresentation	The binary format that the serializer will use. The supported options are **Core.Policy.DataRepresentation.Xcdr** (p. 323) (default) and **Core.Policy.DataRepresentation.Xcdr2** (p. 323)

9.329.3.2 ToString() [1/2]

```
string  Rti.Dds.Topics.TypeSupport< T >.ToString (
            T sample )  [inline]
```

Converts a data sample into a readable string.

Parameters

sample	The data sample to stringify

Returns

A string representation of the data sample

9.329.3.3 ToString() [2/2]

```
string  Rti.Dds.Topics.TypeSupport< T >.ToString (
            T sample,
             PrintFormatProperty format )  [inline]
```

Converts a data sample into a string representation such as XML or JSON according to the specified formatting options.

Parameters

sample	The data sample to stringify
format	The format options

Returns

A string representation of the data sample

9.329.3.4 FromString()

```
T  Rti.Dds.Topics.TypeSupport< T >.FromString (
            string str,
             PrintFormatKind formatKind =  PrintFormatKind.Json )  [inline]
```

Creates a data sample from a JSON string representation

Parameters

str	The json representation of the data
formatKind	The format kind of the string representation (the default and only supported value is **PrintFormatKind.Json** (p. 119))

Returns

An instance of type T

9.329.3.5 GetDynamicTypeInternal()

```
DynamicType  Rti.Dds.Topics.TypeSupport< T >.GetDynamicTypeInternal (
            bool isPublic = true )
```

For internal use only.

9.329.3.6 RegisterType()

```
virtual void  Rti.Dds.Topics.TypeSupport< T >.RegisterType (
             DomainParticipant participant,
            string typeName )  [virtual]
```

For internal use only.

9.329.3.7 GetAttribute< TAttribute >()

```
TAttribute  Rti.Dds.Topics.TypeSupport< T >.GetAttribute< TAttribute > (
            string propertyName )  [inline]
```

Gets an Attribute (such as **Omg.Types.KeyAttribute** (p. 687)) from a property of this **TypeSupport** (p. 1224)'s type, T.

Parameters

propertyName	The name of a property of the type T

Template Parameters

TAttribute	The attribute type such as **Omg.Types.KeyAttribute** (p. 687)

Returns

The attribute definition if this property has it or null if it doesn't.

Exceptions

ArgumentException	If the property doesn't exist in this type

Some IDL annotations are mapped to C# attributes. This helper method can retrieve these attributes using C# reflection.

Type Constraints

TAttribute* : *Attribute

9.329.3.8 Dispose()

```
virtual void  Rti.Dds.Topics.TypeSupport< T >.Dispose ( )  [inline], [virtual]
```

For internal use only.

9.329.4 Property Documentation

9.329.4.1 DynamicType

```
DynamicType  Rti.Dds.Topics.TypeSupport< T >.  DynamicType  [get]
```

The DynamicType that describes the IDL type T.

Implements **Rti.Dds.Topics.ITypeSupport** (p. 683).

9.330 Rti.Dds.Core.Policy.TypeSupportBuilder Class Reference

A modifiable type used to create an immutable **TypeSupport** (p. 1222)

Public Member Functions

- **TypeSupportBuilder** (**TypeSupport** data)
  Creates a builder with the values of an existing immutable instance
- **TypeSupport Build** ()
  *Creates a new **TypeSupport** (p. 1222) immutable object from this one.*

Properties

- IntPtr **PluginData** `[get, set]`
  Value to pass into the type plugin's de-/serialization function
- **CdrPaddingKind CdrPaddingKind** `[get, set]`
  Determines whether or not the padding bytes will be set to zero during CDR serialization.

9.330.1 Detailed Description

A modifiable type used to create an immutable **TypeSupport** (p. 1222)

9.330.2 Constructor & Destructor Documentation

9.330.2.1 TypeSupportBuilder()

```
Rti.Dds.Core.Policy.TypeSupportBuilder.TypeSupportBuilder (
            TypeSupport data ) [inline]
```

Creates a builder with the values of an existing immutable instance

9.330.3 Member Function Documentation

9.330.3.1 Build()

```
TypeSupport Rti.Dds.Core.Policy.TypeSupportBuilder.Build ( )
```

Creates a new **TypeSupport** (p. 1222) immutable object from this one.

9.330.4 Property Documentation

9.330.4.1 PluginData

`IntPtr Rti.Dds.Core.Policy.TypeSupportBuilder.PluginData [get], [set]`

Value to pass into the type plugin's de-/serialization function

The full documentation is available in the C API: `DDS_TypeSupportQosPolicy_plugin_data`

9.330.4.2 CdrPaddingKind

`CdrPaddingKind` `Rti.Dds.Core.Policy.TypeSupportBuilder.CdrPaddingKind [get], [set]`

Determines whether or not the padding bytes will be set to zero during CDR serialization.

The full documentation is available in the C API: `DDS_TypeSupportQosPolicy_cdr_padding_kind`

9.331 Rti.Dds.Topics.TypeSupportHelper Class Reference

Provides static functions to reflectively find the **TypeSupport** (p. 1224) class for a given IDL type.

Static Public Member Functions

- static **ITypeSupport** **GetTypeSupportForType** (Type type)
  *Returns the **TypeSupport** (p. 1224) class associated with a given IDL-based type.*

9.331.1 Detailed Description

Provides static functions to reflectively find the **TypeSupport** (p. 1224) class for a given IDL type.

9.331.2 Member Function Documentation

9.331.2.1 GetTypeSupportForType()

```
static  ITypeSupport Rti.Dds.Topics.TypeSupportHelper.GetTypeSupportForType (
            Type type )  [inline], [static]
```

Returns the **TypeSupport** (p. 1224) class associated with a given IDL-based type.

9.332 Rti.Types.Dynamic.UnionBuilder Class Reference

Allows creating a new **UnionType** (p. 1239) via **DynamicTypeFactory.BuildUnion()** (p. 588).

Public Member Functions

- **UnionBuilder WithName** (string name)

  *Returns the same **UnionBuilder** (p. 1231) instance with a modified **Name** (p. 1234).*
- **UnionBuilder WithExtensibility** (**ExtensibilityKind** kind)

  *Returns the same **UnionBuilder** (p. 1231) instance with a modified **ExtensibilityKind** (p. 1234).*
- **UnionBuilder WithDiscriminator** (**DynamicType** discriminator)

  *Returns the same **UnionBuilder** (p. 1231) instance with a modified **Discriminator** (p. 1234).*
- **UnionBuilder AddMember** (**UnionMember** member)

  *Returns the same **UnionBuilder** (p. 1231) instance with a new **UnionMember** (p. 1234) added to **Members** (p. 1234).*
- **UnionBuilder AddMembers** (params **UnionMember**[ ] members)

  *Returns the same **UnionBuilder** (p. 1231) instance with a number of new **UnionMember** (p. 1234) added to **Members** (p. 1234).*
- **UnionBuilder AddMembers** (IEnumerable< **UnionMember** > members)

  *Returns the same **UnionBuilder** (p. 1231) instance with a number of new **UnionMember** (p. 1234) added to **Members** (p. 1234).*
- **UnionType Create** ()

  *Creates a new **UnionType** (p. 1239) object using the current properties of the **UnionBuilder** (p. 1231) instance.*

Properties

- string **Name** [get]

  The union name.
- **ExtensibilityKind ExtensibilityKind** [get]

  The value for the IDL extensibility kind.
- **DynamicType Discriminator** = ExtensibilityKind.Extensible [get]

  The discriminator.
- IList< **UnionMember** > **Members** = new List< **UnionMember**>() [get]

  The union members.

9.332.1 Detailed Description

Allows creating a new **UnionType** (p. 1239) via **DynamicTypeFactory.BuildUnion()** (p. 588).

9.332.2 Member Function Documentation

9.332.2.1 WithName()

```
UnionBuilder Rti.Types.Dynamic.UnionBuilder.WithName (
            string name )  [inline]
```

Returns the same **UnionBuilder** (p. 1231) instance with a modified **Name** (p. 1234).

Parameters

name	The new **Name** (p. 1234) to be set.

9.332.2.2 WithExtensibility()

```
UnionBuilder Rti.Types.Dynamic.UnionBuilder.WithExtensibility (
             ExtensibilityKind kind )  [inline]
```

Returns the same **UnionBuilder** (p. 1231) instance with a modified **ExtensibilityKind** (p. 1234).

Parameters

kind	The new **ExtensibilityKind** (p. 1234) to be set.

9.332.2.3 WithDiscriminator()

```
UnionBuilder Rti.Types.Dynamic.UnionBuilder.WithDiscriminator (
             DynamicType discriminator )  [inline]
```

Returns the same **UnionBuilder** (p. 1231) instance with a modified **Discriminator** (p. 1234).

Parameters

discriminator	The new **Discriminator** (p. 1234) to be set.

9.332.2.4 AddMember()

```
UnionBuilder Rti.Types.Dynamic.UnionBuilder.AddMember (
            UnionMember member )  [inline]
```

Returns the same **UnionBuilder** (p. 1231) instance with a new **UnionMember** (p. 1234) added to **Members** (p. 1234).

Parameters

member	The **UnionMember** (p. 1234) to be added.

9.332.2.5 AddMembers() [1/2]

```
UnionBuilder Rti.Types.Dynamic.UnionBuilder.AddMembers (
           params  UnionMember[] members )  [inline]
```

Returns the same **UnionBuilder** (p. 1231) instance with a number of new **UnionMember** (p. 1234) added to **Members** (p. 1234).

Parameters

members	The array of **UnionMember** (p. 1234) to be added.

9.332.2.6 AddMembers() [2/2]

```
UnionBuilder Rti.Types.Dynamic.UnionBuilder.AddMembers (
           IEnumerable<  UnionMember > members )  [inline]
```

Returns the same **UnionBuilder** (p. 1231) instance with a number of new **UnionMember** (p. 1234) added to **Members** (p. 1234).

Parameters

members	The enumerable object of **UnionMember** (p. 1234) to be added.

9.332.2.7 Create()

```
UnionType Rti.Types.Dynamic.UnionBuilder.Create ( )  [inline]
```

Creates a new **UnionType** (p. 1239) object using the current properties of the **UnionBuilder** (p. 1231) instance.

9.332.3 Property Documentation

9.332.3.1 Name

```
string Rti.Types.Dynamic.UnionBuilder.Name  [get]
```

The union name.

9.332.3.2 ExtensibilityKind

```
ExtensibilityKind Rti.Types.Dynamic.UnionBuilder.ExtensibilityKind  [get]
```

The value for the IDL extensibility kind.

9.332.3.3 Discriminator

```
DynamicType Rti.Types.Dynamic.UnionBuilder.Discriminator = ExtensibilityKind.Extensible  [get]
```

The discriminator.

9.332.3.4 Members

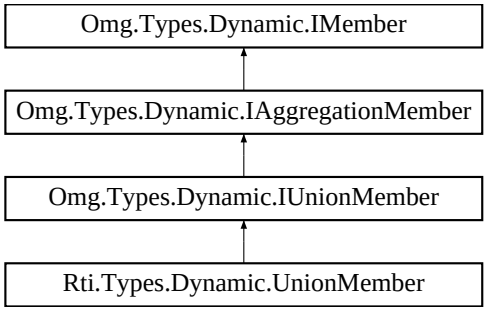
```
IList< UnionMember> Rti.Types.Dynamic.UnionBuilder.Members = new List< UnionMember>()  [get]
```

The union members.

9.333 Rti.Types.Dynamic.UnionMember Class Reference

Represents a union member in a **UnionType** (p. 1239).

Inheritance diagram for Rti.Types.Dynamic.UnionMember:



Public Member Functions

- **UnionMember** (string name, **DynamicType** type, IEnumerable< int > labels, int id= **InvalidMemberId**, bool isExternal=false, **Annotations** annotations=null)

  *Creates a new **UnionMember** (p. 1234).*
- override bool **Equals** (object other)

  Compares for equality
- override int **GetHashCode** ()

  Calculates a hash code
- bool **Equals** (**UnionMember** other)

  Compares for equality
- override string **ToString** ()

  Returns the member type and name

Static Public Attributes

- const int **InvalidMemberId** = 0x7FFFFFFF

  The default value for a member id.
- const int **DefaultLabel** = 0x40000001

  *A special integer used by **Labels** (p. 1238) to indicate that a union member is selected by the `default:` label.*

Properties

- string **Name** `[get]`

  The member name.
- **DynamicType Type** `[get]`

  The member type.
- bool **IsExternal** `[get]`

  Whether this member is annotated as `@external`.
- int **Id** `[get]`

  The member IDL (value of the `@id` annotation).
- IEnumerable< int > **Labels** `[get]`

  The labels that select this union member.
- **Annotations Annotations** `[get, set]`

  Optional values for the annotated properties of this member.

9.333.1 Detailed Description

Represents a union member in a **UnionType** (p. 1239).

9.333.2 Constructor & Destructor Documentation

9.333.2.1 UnionMember()

```
Rti.Types.Dynamic.UnionMember.UnionMember (
            string name,
             DynamicType type,
            IEnumerable< int > labels,
            int id =  InvalidMemberId,
            bool isExternal = false,
             Annotations annotations = null )  [inline]
```

Creates a new **UnionMember** (p. 1234).

Parameters

name	The name (required)
type	The type (required)
labels	The labels that select this member (required)
id	An explicit member ID (optional, automatically assigned by default)
isExternal	Whether to set @external (optional, false by default)
annotations	Member annotations (optional, none by default)

9.333.3 Member Function Documentation

9.333.3.1 Equals() [1/2]

```
override bool Rti.Types.Dynamic.UnionMember.Equals (
            object other )
```

Compares for equality

9.333.3.2 GetHashCode()

```
override int Rti.Types.Dynamic.UnionMember.GetHashCode ( )  [inline]
```

Calculates a hash code

9.333.3.3 Equals() [2/2]

```
bool Rti.Types.Dynamic.UnionMember.Equals (
            UnionMember other )  [inline]
```

Compares for equality

9.333.3.4 ToString()

```
override string Rti.Types.Dynamic.UnionMember.ToString ( )
```

Returns the member type and name

9.333.4 Field Documentation

9.333.4.1 InvalidMemberId

```
const int Rti.Types.Dynamic.UnionMember.InvalidMemberId = 0x7FFFFFFF  [static]
```

The default value for a member id.

9.333.4.2 DefaultLabel

```
const int Rti.Types.Dynamic.UnionMember.DefaultLabel = 0x40000001  [static]
```

A special integer used by **Labels** (p. 1238) to indicate that a union member is selected by the `default:` label.

9.333.5 Property Documentation

9.333.5.1 Name

```
string Rti.Types.Dynamic.UnionMember.Name  [get]
```

The member name.

Implements **Omg.Types.Dynamic.IMember** (p. 658).

9.333.5.2 Type

```
DynamicType Rti.Types.Dynamic.UnionMember.Type [get]
```

The member type.

Implements **Omg.Types.Dynamic.IAggregationMember** (p. 648).

9.333.5.3 IsExternal

```
bool Rti.Types.Dynamic.UnionMember.IsExternal [get]
```

Whether this member is annotated as `@external`.

Implements **Omg.Types.Dynamic.IAggregationMember** (p. 649).

9.333.5.4 Id

```
int Rti.Types.Dynamic.UnionMember.Id [get]
```

The member IDL (value of the `@id` annotation).

Implements **Omg.Types.Dynamic.IAggregationMember** (p. 648).

9.333.5.5 Labels

```
IEnumerable<int> Rti.Types.Dynamic.UnionMember.Labels [get]
```

The labels that select this union member.

When the union's discriminator is not of type `int`, the elements in this collection are cast to `int`.

The special value **DefaultLabel** (p. 1237) refers to the `default:` label.

The full documentation is available in the C API: `DDS_UnionMember_labels`

Implements **Omg.Types.Dynamic.IUnionMember** (p. 685).

9.333.5.6 Annotations

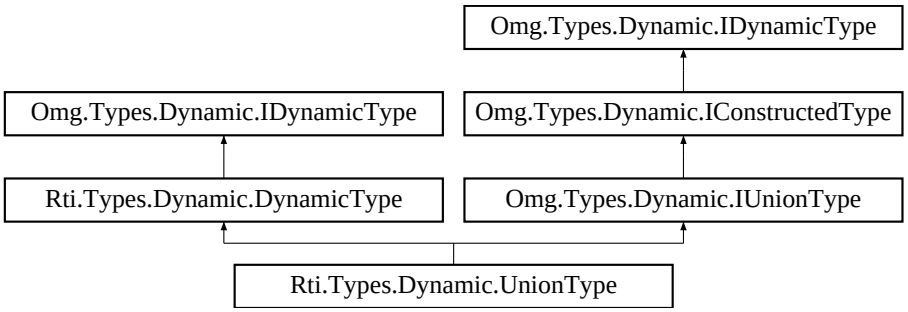
Annotations Rti.Types.Dynamic.UnionMember.Annotations [get], [set]

Optional values for the annotated properties of this member.

9.334 Rti.Types.Dynamic.UnionType Class Reference

Represents an IDL union.

Inheritance diagram for Rti.Types.Dynamic.UnionType:



Public Member Functions

- **UnionMember GetMember** (uint index)

  Returns a member by its position in the type
- **UnionMember GetMember** (string name)

  Finds a member by its name
- uint **FindMemberByName** (string name)

  *Finds the index for a member name, which can be used as the argument for **GetMember(uint)** (p. 1240).*
- uint **FindMemberById** (int id)

  Finds the member index given a member ID (`@id` IDL annotation)
- uint **FindMemberByLabel** (int label)

  Finds the member index given the value of the union discriminator (label) that selects that member.
- uint **GetCdrSerializedSampleMaxSize** (short representationId=DataRepresentation.Xcdr)

  Gets the maximum serialized size of samples of this type using a certain DataRepresentation.
- uint **GetCdrSerializedSampleMinSize** (short representationId=DataRepresentation.Xcdr)

  Gets the minimum serialized size of samples of this type using a certain DataRepresentation.
- uint **GetCdrSerializedSampleKeyMaxSize** (short representationId=DataRepresentation.Xcdr)

  Gets the maximum serialized size of the data type's key using a certain DataRepresentation.

Properties

- **ExtensibilityKind ExtensibilityKind** `[get]`

  The value for the IDL extensibility kind.
- IEnumerable< **UnionMember** > **Members** `[get]`

  The union members.
- **DynamicType Discriminator** `[get]`

  The type of the union discriminator
- uint **MemberCount** `[get]`

  The number of union members.

9.334.1 Detailed Description

Represents an IDL union.

9.334.2 Member Function Documentation

9.334.2.1 GetMember() [1/2]

```
UnionMember Rti.Types.Dynamic.UnionType.GetMember (
            uint index )
```

Returns a member by its position in the type

Exceptions

System.IndexOutOfRangeException	When `index >= MemberCount.`

Returns

The member if the index is valid, or null if the index is InvalidMemberIndex

Implements **Omg.Types.Dynamic.IConstructedType** (p. 653).

9.334.2.2 GetMember() [2/2]

```
UnionMember Rti.Types.Dynamic.UnionType.GetMember (
            string name )
```

Finds a member by its name

Returns

The member if the name exists, or null if the name doesn't exist

Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

9.334.2.3 FindMemberByName()

```
uint Rti.Types.Dynamic.UnionType.FindMemberByName (
            string name )
```

Finds the index for a member name, which can be used as the argument for **GetMember(uint)** (p. 1240).

Returns

The member index, if the name exists or InvalidMemberIndex if it doesn't.

9.334.2.4 FindMemberById()

```
uint Rti.Types.Dynamic.UnionType.FindMemberById (
            int id )
```

Finds the member index given a member ID (`@id` IDL annotation)

Returns

The member index, if the ID exists or InvalidMemberIndex if it doesn't.

The full documentation is available in the C API: `DDS_TypeCode_find_member_by_id`

9.334.2.5 FindMemberByLabel()

```
uint Rti.Types.Dynamic.UnionType.FindMemberByLabel (
            int label )
```

Finds the member index given the value of the union discriminator (label) that selects that member.

Returns

The member index, if the label selects a member, or InvalidMemberIndex if it doesn't.

9.334.2.6 GetCdrSerializedSampleMaxSize()

```
uint Rti.Types.Dynamic.UnionType.GetCdrSerializedSampleMaxSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the maximum serialized size of samples of this type using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_max_size`

9.334.2.7 GetCdrSerializedSampleMinSize()

```
uint Rti.Types.Dynamic.UnionType.GetCdrSerializedSampleMinSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the minimum serialized size of samples of this type using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_min_size`

9.334.2.8 GetCdrSerializedSampleKeyMaxSize()

```
uint Rti.Types.Dynamic.UnionType.GetCdrSerializedSampleKeyMaxSize (
            short representationId = DataRepresentation.Xcdr )
```

Gets the maximum serialized size of the data type's key using a certain DataRepresentation.

The full documentation is available in the C API: `DDS_TypeCode_cdr_serialized_sample_key_max_size`

9.334.3 Property Documentation

9.334.3.1 ExtensibilityKind

ExtensibilityKind Rti.Types.Dynamic.UnionType.ExtensibilityKind [get]

The value for the IDL extensibility kind.

Implements **Omg.Types.Dynamic.IConstructedType** (p. 654).

9.334.3.2 Members

```
IEnumerable< UnionMember> Rti.Types.Dynamic.UnionType.Members  [get]
```

The union members.

Implements **Omg.Types.Dynamic.IUnionType** (p. 686).

9.334.3.3 Discriminator

```
DynamicType Rti.Types.Dynamic.UnionType.Discriminator  [get]
```

The type of the union discriminator

Implements **Omg.Types.Dynamic.IUnionType** (p. 686).

9.334.3.4 MemberCount

```
uint Rti.Types.Dynamic.UnionType.MemberCount  [get]
```

The number of union members.

9.335 Rti.Dds.Core.Policy.UserData Class Reference

Provides an area where your application can store additional information related to a **Domain.DomainParticipant** (p. 451), Publication.DataWriter<T> or Subscription.DataReader<T>

Inherits IEquatable< UserData >.

Public Member Functions

- **UserData** (IEnumerable< byte > value)
  *Creates a **UserData** (p. 1243) object with a list of bytes*
- **UserData** (ImmutableList< byte > value)
  *Creates a **UserData** (p. 1243) object with a list of bytes*
- **UserData With** (Action< ImmutableList< byte >.Builder > build)
  *Creates a new **UserData** (p. 1243) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**UserData** other)
  Compares for equality

Properties

- ImmutableList< byte > **Value** [get]

  An opaque sequence of bytes.
- static **UserData** **Default** = new **UserData**(ImmutableList<byte>.Empty) [get]

  *Singleton containing the default value of a **UserData** (p. 1243)*

9.335.1 Detailed Description

Provides an area where your application can store additional information related to a **Domain.DomainParticipant** (p. 451), Publication.DataWriter<T> or Subscription.DataReader<T>

*The full documentation is available in the C API:*DDS_UserDataQosPolicy

9.335.2 Constructor & Destructor Documentation

9.335.2.1 UserData() [1/2]

```
Rti.Dds.Core.Policy.UserData.UserData (
            IEnumerable< byte > value )  [inline]
```

Creates a **UserData** (p. 1243) object with a list of bytes

9.335.2.2 UserData() [2/2]

```
Rti.Dds.Core.Policy.UserData.UserData (
            ImmutableList< byte > value )
```

Creates a **UserData** (p. 1243) object with a list of bytes

9.335.3 Member Function Documentation

9.335.3.1 With()

```
UserData Rti.Dds.Core.Policy.UserData.With (
            Action< ImmutableList< byte >.Builder > build )  [inline]
```

Creates a new **UserData** (p. 1243) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable list with the current values of this object's **Value** (p. 1245).

Returns

A new **UserData** (p. 1243) with the changes applied by the Action

9.335.3.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.UserData.GetHashCode ( )
```

Gets the hash code

9.335.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.UserData.Equals (
            object other )
```

Compares for equality

9.335.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.UserData.Equals (
             UserData other )  [inline]
```

Compares for equality

9.335.4 Property Documentation

9.335.4.1 Value

```
ImmutableList<byte> Rti.Dds.Core.Policy.UserData.Value  [get]
```

An opaque sequence of bytes.

The full documentation is available in the C API: DDS_UserDataQosPolicy_value

9.335.4.2 Default

```
UserData Rti.Dds.Core.Policy.UserData.Default = new UserData(ImmutableList<byte>.Empty) [static],
[get]
```

Singleton containing the default value of a **UserData** (p. 1243)

9.336 Rti.Dds.Core.VendorId Struct Reference

Type used to represent the vendor of the service implementing the RTPS protocol.

Inherits IEquatable< VendorId >.

Public Member Functions

- **VendorId** (short value)
  // Creates a new object from a vendor id value
- override int **GetHashCode** ()
  Gets the hash code
- bool **Equals** (**VendorId** other)
  Compares for equality

Properties

- short **Value** [get]
  The vendor Id.
- static **VendorId** **Default** [get]
  *Singleton containing the default value of a **VendorId** (p. 1246)*

9.336.1 Detailed Description

Type used to represent the vendor of the service implementing the RTPS protocol.

The full documentation is available in the C API: DDS_VendorId_t

9.336.2 Constructor & Destructor Documentation

9.336.2.1 VendorId()

```
Rti.Dds.Core.VendorId.VendorId (
            short value )
```

// Creates a new object from a vendor id value

9.336.3 Member Function Documentation

9.336.3.1 GetHashCode()

```
override int Rti.Dds.Core.VendorId.GetHashCode ( )  [inline]
```

Gets the hash code

9.336.3.2 Equals()

```
bool Rti.Dds.Core.VendorId.Equals (
             VendorId other )
```

Compares for equality

9.336.4 Property Documentation

9.336.4.1 Value

```
short Rti.Dds.Core.VendorId.Value  [get]
```

The vendor Id.

The full documentation is available in the `C API:` DDS_VendorId_t_vendorId

9.336.4.2 Default

```
VendorId Rti.Dds.Core.VendorId.Default  [static], [get]
```

Singleton containing the default value of a **VendorId** (p. 1246)

9.337 Rti.Dds.Core.WaitSet Class Reference

Allows an application to wait until one or more of the attached **Condition** (p. 228) objects have a trigger value of true or else until the timeout expires.

Inherits IDisposable.

Public Member Functions

- **WaitSet** ()

  *Creates a new **WaitSet** (p. 1248)*
- **WaitSet** (**WaitSetProperty** property)

  *Creates a new **WaitSet** (p. 1248) with a non-default configuration.*
- void **AttachCondition** (**Condition** condition)

  *Attaches a **Condition** (p. 228) to the **WaitSet** (p. 1248).*
- bool **DetachCondition** (**Condition** condition)

  *Detaches a **Condition** (p. 228) from the **WaitSet** (p. 1248).*
- int **Dispatch** (**Duration** maxWait)

  Waits for at least one of the attached conditions to trigger and then calls the event handler for each of the active conditions.
- int **Dispatch** ()

  Waits an unlimited amount of time for at least one of the attached conditions to trigger and then calls the event handlers of the active conditions.
- IEnumerable< **Condition** > **Wait** (**Duration** maxWait)

  Allows an application thread to wait for the occurrence of certain conditions.
- IEnumerable< **Condition** > **Wait** ()

  Allows an application thread to wait for the occurrence of certain conditions. It waits an infinite amount of time.
- void **Dispose** ()

  *Releases the native resources used by this **WaitSet** (p. 1248). A finalizer is also provided, so it is not necessary to call Dispose.*

Properties

- IEnumerable< **Condition** > **Conditions** `[get]`

  Retrieves the list of attached Conditions.

9.337.1 Detailed Description

Allows an application to wait until one or more of the attached **Condition** (p. 228) objects have a trigger value of true or else until the timeout expires.

9.337.2 Constructor & Destructor Documentation

9.337.2.1 WaitSet() [1/2]

```
Rti.Dds.Core.WaitSet.WaitSet ( )
```

Creates a new **WaitSet** (p. 1248)

The full documentation is available in the C API: DDS_WaitSet_new

9.337.2.2 WaitSet() [2/2]

```
Rti.Dds.Core.WaitSet.WaitSet (
              WaitSetProperty property )
```

Creates a new **WaitSet** (p. 1248) with a non-default configuration.

The full documentation is available in the C API: DDSWaitSetWaitSet(WaitSetProperty_t)

9.337.3 Member Function Documentation

9.337.3.1 AttachCondition()

```
void Rti.Dds.Core.WaitSet.AttachCondition (
              Condition condition )
```

Attaches a **Condition** (p. 228) to the **WaitSet** (p. 1248).

The full documentation is available in the C API: DDS_WaitSet_attach_condition

9.337.3.2 DetachCondition()

```
bool Rti.Dds.Core.WaitSet.DetachCondition (
              Condition condition )
```

Detaches a **Condition** (p. 228) from the **WaitSet** (p. 1248).

The full documentation is available in the C API: DDS_WaitSet_detach_condition

9.337.3.3 Dispatch() [1/2]

```
int Rti.Dds.Core.WaitSet.Dispatch (
              Duration maxWait )  [inline]
```

Waits for at least one of the attached conditions to trigger and then calls the event handler for each of the active conditions.

This is an alternative pattern to the use of **Wait()** (p. 1250). Instead of receiving the list of active conditions, the application associates an event handler to each condition before attaching it to the **WaitSet** (p. 1248). When this method wakes up after one or more conditions have become active, it calls their **Condition.Triggered** (p. 230) event handlers before returning. The handlers are called by **Dispatch()** (p. 1250) in the context of the current thread.

Parameters

maxWait	The maximum time to wait. If that time elapses this method returns normally without calling any of the condition handlers.

Returns

The number of conditions that were triggered (or 0 if the maxWait elapsed)

9.337.3.4 Dispatch() [2/2]

```
int Rti.Dds.Core.WaitSet.Dispatch ( )
```

Waits an unlimited amount of time for at least one of the attached conditions to trigger and then calls the event handlers of the active conditions.

Returns

The number of conditions that were triggered

9.337.3.5 Wait() [1/2]

```
IEnumerable<  Condition > Rti.Dds.Core.WaitSet.Wait (
              Duration maxWait )
```

Allows an application thread to wait for the occurrence of certain conditions.

The full documentation is available in the C API: DDS_WaitSet_wait

9.337.3.6 Wait() [2/2]

```
IEnumerable<  Condition > Rti.Dds.Core.WaitSet.Wait ( )
```

Allows an application thread to wait for the occurrence of certain conditions. It waits an infinite amount of time.

The full documentation is available in the C API: DDS_WaitSet_wait

9.337.3.7 Dispose()

```
void Rti.Dds.Core.WaitSet.Dispose ( )
```

Releases the native resources used by this **WaitSet** (p. 1248). A finalizer is also provided, so it is not necessary to call Dispose.

9.337.4 Property Documentation

9.337.4.1 Conditions

`IEnumerable< Condition> Rti.Dds.Core.WaitSet.Conditions [get]`

Retrieves the list of attached Conditions.

The full documentation is available in the C API: `DDS_WaitSet_get_conditions`

9.338 Rti.Dds.Core.WaitSetProperty Class Reference

Specifies how a **WaitSet** (p. 1248) behaves when multiple conditions are triggered.

Inherits IEquatable< WaitSetProperty >.

Public Member Functions

- **WaitSetProperty** (int maxEventCount, **Duration** maxEventDelay)
  *Creates a new **WaitSetProperty** (p. 1251) with the given parameters*
- **WaitSetProperty With** (Action< **WaitSetPropertyBuilder** > build)
  *Creates a new **WaitSetProperty** (p. 1251) with a set of changes specified in an Action*
- override int **GetHashCode** ()
  Gets the hash code
- override bool **Equals** (object other)
  Compares for equality
- bool **Equals** (**WaitSetProperty** other)
  Compares for equality

Properties

- int **MaxEventCount** `[get]`
  *Maximum number of trigger events to cause a **WaitSet** (p. 1248) to awaken.*
- **Duration MaxEventDelay** `[get]`
  *Maximum delay from occurrence of first trigger event to cause a **WaitSet** (p. 1248) to awaken.*
- static **WaitSetProperty Default** = CreateDefault() `[get]`
  *Singleton containing the default value of a **WaitSetProperty** (p. 1251)*

9.338.1 Detailed Description

Specifies how a **WaitSet** (p. 1248) behaves when multiple conditions are triggered.

9.338.2 Constructor & Destructor Documentation

9.338.2.1 WaitSetProperty()

```
Rti.Dds.Core.WaitSetProperty.WaitSetProperty (
            int maxEventCount,
             Duration maxEventDelay )  [inline]
```

Creates a new **WaitSetProperty** (p. 1251) with the given parameters

Parameters

maxEventCount	The value for **MaxEventCount** (p. 1253)
maxEventDelay	The value for **MaxEventDelay** (p. 1253)

9.338.3 Member Function Documentation

9.338.3.1 With()

```
WaitSetProperty Rti.Dds.Core.WaitSetProperty.With (
            Action<  WaitSetPropertyBuilder > build )  [inline]
```

Creates a new **WaitSetProperty** (p. 1251) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **WaitSetProperty** (p. 1251).

Returns

A new **WaitSetProperty** (p. 1251) with the changes applied by the Action

9.338.3.2 GetHashCode()

```
override int Rti.Dds.Core.WaitSetProperty.GetHashCode ( )  [inline]
```

Gets the hash code

9.338.3.3 Equals() [1/2]

```
override bool Rti.Dds.Core.WaitSetProperty.Equals (
            object other )
```

Compares for equality

9.338.3.4 Equals() [2/2]

```
bool Rti.Dds.Core.WaitSetProperty.Equals (
             WaitSetProperty other )  [inline]
```

Compares for equality

9.338.4 Property Documentation

9.338.4.1 MaxEventCount

```
int Rti.Dds.Core.WaitSetProperty.MaxEventCount  [get]
```

Maximum number of trigger events to cause a **WaitSet** (p. 1248) to awaken.

The full documentation is available in the C API: DDS_WaitSetProperty_t_max_event_count

9.338.4.2 MaxEventDelay

```
Duration Rti.Dds.Core.WaitSetProperty.MaxEventDelay  [get]
```

Maximum delay from occurrence of first trigger event to cause a **WaitSet** (p. 1248) to awaken.

The full documentation is available in the C API: DDS_WaitSetProperty_t_max_event_delay

9.338.4.3 Default

```
WaitSetProperty Rti.Dds.Core.WaitSetProperty.Default = CreateDefault()  [static], [get]
```

Singleton containing the default value of a **WaitSetProperty** (p. 1251)

9.339 Rti.Dds.Core.WaitSetPropertyBuilder Class Reference

A modifiable type used to create an immutable **WaitSetProperty** (p. 1251)

Public Member Functions

- **WaitSetProperty Build** ()

  *Creates a new **WaitSetProperty** (p. 1251) immutable object from this one.*

Properties

- int **MaxEventCount** `[get, set]`

  *Maximum number of trigger events to cause a **WaitSet** (p. 1248) to awaken.*
- **Duration MaxEventDelay** `[get, set]`

  *Maximum delay from occurrence of first trigger event to cause a **WaitSet** (p. 1248) to awaken.*

9.339.1 Detailed Description

A modifiable type used to create an immutable **WaitSetProperty** (p. 1251)

9.339.2 Member Function Documentation

9.339.2.1 Build()

```
WaitSetProperty Rti.Dds.Core.WaitSetPropertyBuilder.Build ( )
```

Creates a new **WaitSetProperty** (p. 1251) immutable object from this one.

9.339.3 Property Documentation

9.339.3.1 MaxEventCount

```
int Rti.Dds.Core.WaitSetPropertyBuilder.MaxEventCount  [get], [set]
```

Maximum number of trigger events to cause a **WaitSet** (p. 1248) to awaken.

The full documentation is available in the C API: `DDS_WaitSetProperty_t_max_event_count`

9.339.3.2 MaxEventDelay

Duration Rti.Dds.Core.WaitSetPropertyBuilder.MaxEventDelay [get], [set]

Maximum delay from occurrence of first trigger event to cause a **WaitSet** (p. 1248) to awaken.

The full documentation is available in the C API: DDS_WaitSetProperty_t_max_event_delay

9.340 Rti.Types.Dynamic.DynamicTypeFactory.WideCharType Struct Reference

An empty struct used only as a type argument to **GetPrimitiveType**<**T**> (p. 587) to disambiguate between IDL `char` (UTF-8 character) and IDL `wchar` (UTF-16 character).

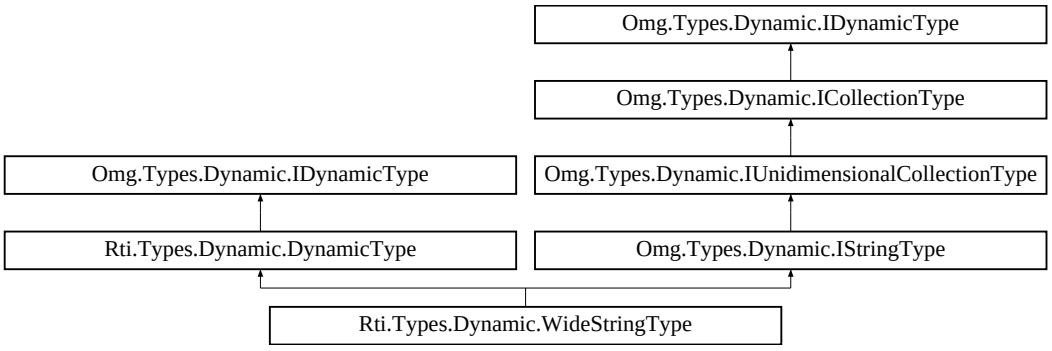
9.340.1 Detailed Description

An empty struct used only as a type argument to **GetPrimitiveType**<**T**> (p. 587) to disambiguate between IDL `char` (UTF-8 character) and IDL `wchar` (UTF-16 character).

9.341 Rti.Types.Dynamic.WideStringType Class Reference

Represents an IDL wstring.

Inheritance diagram for Rti.Types.Dynamic.WideStringType:



Static Public Attributes

- const int **Unbounded** = int.MaxValue

  *Special value for **Bounds** (p. 1256) that indicates that the string is unbounded.*

Properties

- uint **Bounds** [get]

  *The maximum number of characters, or **Unbounded** (p. 1256)*
- **IDynamicType ContentType** [get]

  The type of the string characters.

Additional Inherited Members

9.341.1 Detailed Description

Represents an IDL wstring.

9.341.2 Field Documentation

9.341.2.1 Unbounded

```
const int Rti.Types.Dynamic.WideStringType.Unbounded = int.MaxValue  [static]
```

Special value for **Bounds** (p. 1256) that indicates that the string is unbounded.

9.341.3 Property Documentation

9.341.3.1 Bounds

```
uint Rti.Types.Dynamic.WideStringType.Bounds  [get]
```

The maximum number of characters, or **Unbounded** (p. 1256)

Implements **Omg.Types.Dynamic.IUnidimensionalCollectionType** (p. 684).

9.341.3.2 ContentType

```
IDynamicType Rti.Types.Dynamic.WideStringType.ContentType  [get]
```

The type of the string characters.

Implements **Omg.Types.Dynamic.ICollectionType** (p. 652).

9.342 Rti.Dds.Core.Policy.WireProtocol Class Reference

Specifies the wire-protocol-related attributes for a **Domain.DomainParticipant** (p. 451)

Inherits IEquatable< WireProtocol >.

Public Member Functions

- **WireProtocol With** (Action< **WireProtocolBuilder** > build)

  *Creates a new **WireProtocol** (p. 1257) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**WireProtocol** other)

  Compares for equality

Static Public Attributes

- const uint **RtpsAutoId** = 0

  Indicates that DDS should choose an appropriate host, app, instance or object ID automatically.

Properties

- int **ParticipantId** [get]

  A value used to distinguish among different participants belonging to the same domain on the same host.
- uint **RtpsHostId** [get]

  The RTPS Host ID of the domain participant.
- uint **RtpsAppId** [get]

  The RTPS App ID of the domain participant.
- uint **RtpsInstanceId** [get]

  *The RTPS Instance ID of the **Domain.DomainParticipant** (p. 451).*
- **RtpsWellKnownPorts RtpsWellKnownPorts** [get]

  Configures the RTPS well-known port mappings.
- int **RtpsReservedPortMask** [get]

  Specifies which well-known ports to reserve when enabling the participant.
- **WireProtocolAutoKind RtpsAutoIdKind** [get]

  Kind of auto mechanism used to calculate the GUID prefix.
- bool **ComputeCrc** [get]

  Adds RTPS CRC submessage to every message when this field is set to `true`.
- bool **CheckCrc** [get]

  Checks if the received RTPS message is valid by comparing the computed CRC with the received RTPS CRC submessage when this field is set to `true`.
- static **WireProtocol Default** [get]

  *Singleton containing the default value of a **WireProtocol** (p. 1257)*

9.342.1 Detailed Description

Specifies the wire-protocol-related attributes for a **Domain.DomainParticipant** (p. 451)

9.342.2 Member Function Documentation

9.342.2.1 With()

```
WireProtocol Rti.Dds.Core.Policy.WireProtocol.With (
            Action< WireProtocolBuilder > build )  [inline]
```

Creates a new **WireProtocol** (p. 1257) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **WireProtocol** (p. 1257).

Returns

A new **WireProtocol** (p. 1257) with the changes applied by the Action

9.342.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.WireProtocol.GetHashCode ( )  [inline]
```

Gets the hash code

9.342.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.WireProtocol.Equals (
            object other )
```

Compares for equality

9.342.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.WireProtocol.Equals (
            WireProtocol other )  [inline]
```

Compares for equality

9.342.3 Field Documentation

9.342.3.1 RtpsAutoId

```
const uint Rti.Dds.Core.Policy.WireProtocol.RtpsAutoId = 0  [static]
```

Indicates that DDS should choose an appropriate host, app, instance or object ID automatically.

The full documentation is available in the C API: `DDS_WireProtocolQosPolicy_RTPS_AUTO_ID`

9.342.4 Property Documentation

9.342.4.1 ParticipantId

```
int Rti.Dds.Core.Policy.WireProtocol.ParticipantId  [get]
```

A value used to distinguish among different participants belonging to the same domain on the same host.

The full documentation is available in the C API: `DDS_WireProtocolQosPolicy_participant_id`

9.342.4.2 RtpsHostId

```
uint Rti.Dds.Core.Policy.WireProtocol.RtpsHostId  [get]
```

The RTPS Host ID of the domain participant.

The full documentation is available in the C API: `DDS_WireProtocolQosPolicy_rtps_host_id`

9.342.4.3 RtpsAppId

```
uint Rti.Dds.Core.Policy.WireProtocol.RtpsAppId  [get]
```

The RTPS App ID of the domain participant.

The full documentation is available in the C API: `DDS_WireProtocolQosPolicy_rtps_app_id`

9.342.4.4 RtpsInstanceId

```
uint Rti.Dds.Core.Policy.WireProtocol.RtpsInstanceId [get]
```

The RTPS Instance ID of the **Domain.DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_instance_id

9.342.4.5 RtpsWellKnownPorts

```
RtpsWellKnownPorts Rti.Dds.Core.Policy.WireProtocol.RtpsWellKnownPorts [get]
```

Configures the RTPS well-known port mappings.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_well_known_↩ ports

9.342.4.6 RtpsReservedPortMask

```
int Rti.Dds.Core.Policy.WireProtocol.RtpsReservedPortMask [get]
```

Specifies which well-known ports to reserve when enabling the participant.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_reserved_↩ port_mask

9.342.4.7 RtpsAutoIdKind

```
WireProtocolAutoKind Rti.Dds.Core.Policy.WireProtocol.RtpsAutoIdKind [get]
```

Kind of auto mechanism used to calculate the GUID prefix.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_auto_id_kind

9.342.4.8 ComputeCrc

```
bool Rti.Dds.Core.Policy.WireProtocol.ComputeCrc [get]
```

Adds RTPS CRC submessage to every message when this field is set to `true`.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_compute_crc

9.342.4.9 CheckCrc

```
bool Rti.Dds.Core.Policy.WireProtocol.CheckCrc [get]
```

Checks if the received RTPS message is valid by comparing the computed CRC with the received RTPS CRC submessage when this field is set to `true`.

The full documentation is available in the C API: `DDS_WireProtocolQosPolicy_check_crc`

9.342.4.10 Default

```
WireProtocol Rti.Dds.Core.Policy.WireProtocol.Default [static], [get]
```

Singleton containing the default value of a **WireProtocol** (p. 1257)

9.343 Rti.Dds.Core.Policy.WireProtocolBuilder Class Reference

A modifiable type used to create an immutable **WireProtocol** (p. 1257)

Public Member Functions

- **WireProtocolBuilder** (**WireProtocol** data)

  Creates a builder with the values of an existing immutable instance
- **WireProtocol Build** ()

  *Creates a new **WireProtocol** (p. 1257) immutable object from this one.*

Properties

- int **ParticipantId** `[get, set]`

  A value used to distinguish among different participants belonging to the same domain on the same host.
- uint **RtpsHostId** `[get, set]`

  The RTPS Host ID of the domain participant.
- uint **RtpsAppId** `[get, set]`

  The RTPS App ID of the domain participant.
- uint **RtpsInstanceId** `[get, set]`

  *The RTPS Instance ID of the **Domain.DomainParticipant** (p. 451).*
- **RtpsWellKnownPorts RtpsWellKnownPorts** `[get, set]`

  Configures the RTPS well-known port mappings.
- int **RtpsReservedPortMask** `[get, set]`

  Specifies which well-known ports to reserve when enabling the participant.
- **WireProtocolAutoKind RtpsAutoIdKind** `[get, set]`

  Kind of auto mechanism used to calculate the GUID prefix.
- bool **ComputeCrc** `[get, set]`

  Adds RTPS CRC submessage to every message when this field is set to `true`.
- bool **CheckCrc** `[get, set]`

  Checks if the received RTPS message is valid by comparing the computed CRC with the received RTPS CRC submessage when this field is set to `true`.

9.343.1 Detailed Description

A modifiable type used to create an immutable **WireProtocol** (p. 1257)

9.343.2 Constructor & Destructor Documentation

9.343.2.1 WireProtocolBuilder()

```
Rti.Dds.Core.Policy.WireProtocolBuilder.WireProtocolBuilder (
              WireProtocol data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.343.3 Member Function Documentation

9.343.3.1 Build()

```
 WireProtocol Rti.Dds.Core.Policy.WireProtocolBuilder.Build ( )
```

Creates a new **WireProtocol** (p. 1257) immutable object from this one.

9.343.4 Property Documentation

9.343.4.1 ParticipantId

```
int Rti.Dds.Core.Policy.WireProtocolBuilder.ParticipantId  [get], [set]
```

A value used to distinguish among different participants belonging to the same domain on the same host.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_participant_id

9.343.4.2 RtpsHostId

```
uint Rti.Dds.Core.Policy.WireProtocolBuilder.RtpsHostId  [get], [set]
```

The RTPS Host ID of the domain participant.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_host_id

9.343.4.3 RtpsAppId

```
uint Rti.Dds.Core.Policy.WireProtocolBuilder.RtpsAppId [get], [set]
```

The RTPS App ID of the domain participant.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_app_id

9.343.4.4 RtpsInstanceId

```
uint Rti.Dds.Core.Policy.WireProtocolBuilder.RtpsInstanceId [get], [set]
```

The RTPS Instance ID of the **Domain.DomainParticipant** (p. 451).

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_instance_id

9.343.4.5 RtpsWellKnownPorts

```
RtpsWellKnownPorts Rti.Dds.Core.Policy.WireProtocolBuilder.RtpsWellKnownPorts [get], [set]
```

Configures the RTPS well-known port mappings.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_well_known_↩ ports

9.343.4.6 RtpsReservedPortMask

```
int Rti.Dds.Core.Policy.WireProtocolBuilder.RtpsReservedPortMask [get], [set]
```

Specifies which well-known ports to reserve when enabling the participant.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_reserved_↩ port_mask

9.343.4.7 RtpsAutoIdKind

```
WireProtocolAutoKind Rti.Dds.Core.Policy.WireProtocolBuilder.RtpsAutoIdKind [get], [set]
```

Kind of auto mechanism used to calculate the GUID prefix.

The full documentation is available in the C API: DDS_WireProtocolQosPolicy_rtps_auto_id_kind

9.343.4.8 ComputeCrc

```
bool Rti.Dds.Core.Policy.WireProtocolBuilder.ComputeCrc [get], [set]
```

Adds RTPS CRC submessage to every message when this field is set to `true`.

The full documentation is available in the C API: `DDS_WireProtocolQosPolicy_compute_crc`

9.343.4.9 CheckCrc

```
bool Rti.Dds.Core.Policy.WireProtocolBuilder.CheckCrc [get], [set]
```

Checks if the received RTPS message is valid by comparing the computed CRC with the received RTPS CRC submessage when this field is set to `true`.

The full documentation is available in the C API: `DDS_WireProtocolQosPolicy_check_crc`

9.344 Rti.Dds.Publication.WriteParams Class Reference

Additional parameters for the DataWriter<T> operations that write data or dispose, register or unregister an instance.

Inherits IEquatable< WriteParams >.

Public Member Functions

- bool **Equals** (**WriteParams** other)
  Compares for equality
- override bool **Equals** (object obj)
  Compares for equality
- override int **GetHashCode** ()
  Gets the hash code

Properties

- bool **ReplaceAuto** = false `[get, set]`
  Allows retrieving the actual value of those fields that were automatic
- **SampleIdentity** **Identity** = SampleIdentity.Auto `[get, set]`
  Identity of the sample.
- **SampleIdentity** **RelatedSampleIdentity** = SampleIdentity.Unknown `[get, set]`
  The identity of another sample related to this one
- **Time** **SourceTimestamp** = Time.Invalid `[get, set]`
  Source timestamp upon write
- **Cookie** **Cookie** = Cookie.Empty `[get, set]`
  Octet sequence identifying written data sample

- **InstanceHandle InstanceHandle** = InstanceHandle.Nil [get, set]

  Instance handle
- int **Priority** = **Core.Priority.Undefined** [get, set]

  Publication *(p. 111) priority*
- int **Flag** = 0 [get, set]

  Flags associated with the sample.
- **Core.Guid SourceGuid** = **Core.Guid.Auto** [get, set]

  Identifies the application logical data source associated with the sample being written.
- **Core.Guid RelatedSourceGuid** = **Core.Guid.Unknown** [get, set]

  Identifies the application logical data source that is related to the sample being written.
- **Core.Guid RelatedReaderGuid** = **Core.Guid.Unknown** [get, set]

  Identifies a DataReader that is logically related to the sample that is being written.

9.344.1 Detailed Description

Additional parameters for the DataWriter<T> operations that write data or dispose, register or unregister an instance.

9.344.2 Member Function Documentation

9.344.2.1 Equals() [1/2]

```
bool Rti.Dds.Publication.WriteParams.Equals (
              WriteParams other )
```

Compares for equality

9.344.2.2 Equals() [2/2]

```
override bool Rti.Dds.Publication.WriteParams.Equals (
             object obj )
```

Compares for equality

9.344.2.3 GetHashCode()

```
override int Rti.Dds.Publication.WriteParams.GetHashCode ( )  [inline]
```

Gets the hash code

9.344.3 Property Documentation

9.344.3.1 ReplaceAuto

```
bool Rti.Dds.Publication.WriteParams.ReplaceAuto = false  [get], [set]
```

Allows retrieving the actual value of those fields that were automatic

The full documentation is available in the C API: `DDSWriteParams_t_replace_auto`

9.344.3.2 Identity

```
SampleIdentity Rti.Dds.Publication.WriteParams.Identity = SampleIdentity.Auto  [get], [set]
```

Identity of the sample.

The full documentation is available in the C API: `DDSWriteParams_t_identity`

9.344.3.3 RelatedSampleIdentity

```
SampleIdentity Rti.Dds.Publication.WriteParams.RelatedSampleIdentity = SampleIdentity.Unknown
[get], [set]
```

The identity of another sample related to this one

The full documentation is available in the C API: `DDSWriteParams_t_related_sample_identity`

9.344.3.4 SourceTimestamp

```
Time Rti.Dds.Publication.WriteParams.SourceTimestamp = Time.Invalid  [get], [set]
```

Source timestamp upon write

The full documentation is available in the C API: `DDSWriteParams_t_source_timestamp`

9.344.3.5 Cookie

```
Cookie Rti.Dds.Publication.WriteParams.Cookie = Cookie.Empty  [get], [set]
```

Octet sequence identifying written data sample

The full documentation is available in the C API: `DDSWriteParams_t_cookie`

9.344.3.6 InstanceHandle

```
InstanceHandle Rti.Dds.Publication.WriteParams.InstanceHandle = InstanceHandle.Nil  [get], [set]
```

Instance handle

The full documentation is available in the C API: DDSWriteParams_t_handle

9.344.3.7 Priority

```
int Rti.Dds.Publication.WriteParams.Priority =  Core.Priority.Undefined  [get], [set]
```

Publication (p. 111) priority

See also

Rti.Dds.Core.Priority (p. 861) for special values

The full documentation is available in the C API: DDSWriteParams_t_priority

9.344.3.8 Flag

```
int Rti.Dds.Publication.WriteParams.Flag = 0  [get], [set]
```

Flags associated with the sample.

The full documentation is available in the C API: DDSWriteParams_tflag

9.344.3.9 SourceGuid

```
Core.Guid Rti.Dds.Publication.WriteParams.SourceGuid =  Core.Guid.Auto  [get], [set]
```

Identifies the application logical data source associated with the sample being written.

The full documentation is available in the C API: DDSWriteParams_t_source_guid

9.344.3.10 RelatedSourceGuid

```
Core.Guid Rti.Dds.Publication.WriteParams.RelatedSourceGuid =  Core.Guid.Unknown  [get], [set]
```

Identifies the application logical data source that is related to the sample being written.

The full documentation is available in the C API: DDSWriteParams_t_related_source_guid

9.344.3.11 RelatedReaderGuid

```
Core.Guid Rti.Dds.Publication.WriteParams.RelatedReaderGuid =  Core.Guid.Unknown  [get], [set]
```

Identifies a DataReader that is logically related to the sample that is being written.

The full documentation is available in the C API: `DDSWriteParams_t_related_reader_guid`

9.345 Rti.Dds.Core.Policy.WriterDataLifecycle Class Reference

Controls how a Publication.DataWriter<T> handles the lifecycle of the instances (keys) that it writes.

Inherits IEquatable< WriterDataLifecycle >.

Public Member Functions

- **WriterDataLifecycle With** (Action< **WriterDataLifecycleBuilder** > build)

  *Creates a new **WriterDataLifecycle** (p. 1268) with a set of changes specified in an Action*
- override int **GetHashCode** ()

  Gets the hash code
- override bool **Equals** (object other)

  Compares for equality
- bool **Equals** (**WriterDataLifecycle** other)

  Compares for equality

Properties

- bool **AutodisposeUnregisteredInstances** [get]

  Boolean flag that controls the behavior when the Publication.DataWriter<T> unregisters an instance by means of the unregister operations.
- **Duration AutopurgeUnregisteredInstancesDelay** [get]

  Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has unregistered the instance.
- **Duration AutopurgeDisposedInstancesDelay** [get]

  Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has disposed the instance.
- static **WriterDataLifecycle Default** [get]

  *Singleton containing the default value of a **WriterDataLifecycle** (p. 1268)*

9.345.1 Detailed Description

Controls how a Publication.DataWriter<T> handles the lifecycle of the instances (keys) that it writes.

The full documentation is available in the C API: `DDS_WriterDataLifecycleQosPolicy`

9.345.2 Member Function Documentation

9.345.2.1 With()

```
WriterDataLifecycle Rti.Dds.Core.Policy.WriterDataLifecycle.With (
            Action< WriterDataLifecycleBuilder > build )  [inline]
```

Creates a new **WriterDataLifecycle** (p. 1268) with a set of changes specified in an Action

Parameters

build	An Action (typically a lambda function) that receives a modifiable object with the current values of this **WriterDataLifecycle** (p. 1268).

Returns

A new **WriterDataLifecycle** (p. 1268) with the changes applied by the Action

9.345.2.2 GetHashCode()

```
override int Rti.Dds.Core.Policy.WriterDataLifecycle.GetHashCode ( )  [inline]
```

Gets the hash code

9.345.2.3 Equals() [1/2]

```
override bool Rti.Dds.Core.Policy.WriterDataLifecycle.Equals (
            object other )
```

Compares for equality

9.345.2.4 Equals() [2/2]

```
bool Rti.Dds.Core.Policy.WriterDataLifecycle.Equals (
             WriterDataLifecycle other )  [inline]
```

Compares for equality

9.345.3 Property Documentation

9.345.3.1 AutodisposeUnregisteredInstances

```
bool Rti.Dds.Core.Policy.WriterDataLifecycle.AutodisposeUnregisteredInstances [get]
```

Boolean flag that controls the behavior when the Publication.DataWriter<T> unregisters an instance by means of the unregister operations.

The full documentation is available in the C API: `DDS_WriterDataLifecycleQosPolicy_autodispose_unregistered_instances`

9.345.3.2 AutopurgeUnregisteredInstancesDelay

```
Duration Rti.Dds.Core.Policy.WriterDataLifecycle.AutopurgeUnregisteredInstancesDelay [get]
```

Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has unregistered the instance.

The full documentation is available in the C API: `DDS_WriterDataLifecycleQosPolicy_autopurge_unregistered_instances_delay`

9.345.3.3 AutopurgeDisposedInstancesDelay

```
Duration Rti.Dds.Core.Policy.WriterDataLifecycle.AutopurgeDisposedInstancesDelay [get]
```

Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has disposed the instance.

The full documentation is available in the C API: `DDS_WriterDataLifecycleQosPolicy_autopurge_disposed_instances_delay`

9.345.3.4 Default

```
WriterDataLifecycle Rti.Dds.Core.Policy.WriterDataLifecycle.Default [static], [get]
```

Singleton containing the default value of a **WriterDataLifecycle** (p. 1268)

9.346 Rti.Dds.Core.Policy.WriterDataLifecycleBuilder Class Reference

A modifiable type used to create an immutable **WriterDataLifecycle** (p. 1268)

Public Member Functions

- **WriterDataLifecycleBuilder** (**WriterDataLifecycle** data)

  Creates a builder with the values of an existing immutable instance
- **WriterDataLifecycle Build** ()

  *Creates a new **WriterDataLifecycle** (p. 1268) immutable object from this one.*

Properties

- bool **AutodisposeUnregisteredInstances** `[get, set]`

  Boolean flag that controls the behavior when the Publication.DataWriter<T> unregisters an instance by means of the unregister operations.
- **Duration AutopurgeUnregisteredInstancesDelay** `[get, set]`

  Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has unregistered the instance.
- **Duration AutopurgeDisposedInstancesDelay** `[get, set]`

  Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has disposed the instance.

9.346.1 Detailed Description

A modifiable type used to create an immutable **WriterDataLifecycle** (p. 1268)

9.346.2 Constructor & Destructor Documentation

9.346.2.1 WriterDataLifecycleBuilder()

```
Rti.Dds.Core.Policy.WriterDataLifecycleBuilder.WriterDataLifecycleBuilder (
            WriterDataLifecycle data )  [inline]
```

Creates a builder with the values of an existing immutable instance

9.346.3 Member Function Documentation

9.346.3.1 Build()

```
WriterDataLifecycle Rti.Dds.Core.Policy.WriterDataLifecycleBuilder.Build ( )
```

Creates a new **WriterDataLifecycle** (p. 1268) immutable object from this one.

9.346.4 Property Documentation

9.346.4.1 AutodisposeUnregisteredInstances

```
bool Rti.Dds.Core.Policy.WriterDataLifecycleBuilder.AutodisposeUnregisteredInstances [get], [set]
```

Boolean flag that controls the behavior when the Publication.DataWriter<T> unregisters an instance by means of the unregister operations.

The full documentation is available in the C API: `DDS_WriterDataLifecycleQosPolicy_autodispose_unregistered_instances`

9.346.4.2 AutopurgeUnregisteredInstancesDelay

```
Duration Rti.Dds.Core.Policy.WriterDataLifecycleBuilder.AutopurgeUnregisteredInstancesDelay [get], [set]
```

Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has unregistered the instance.

The full documentation is available in the C API: `DDS_WriterDataLifecycleQosPolicy_autopurge_unregistered_instances_delay`

9.346.4.3 AutopurgeDisposedInstancesDelay

```
Duration Rti.Dds.Core.Policy.WriterDataLifecycleBuilder.AutopurgeDisposedInstancesDelay [get], [set]
```

Maximum duration for which the Publication.DataWriter<T> will maintain information regarding an instance once it has disposed the instance.

The full documentation is available in the C API: `DDS_WriterDataLifecycleQosPolicy_autopurge_disposed_instances_delay`

Chapter 10

File Documentation

10.1 MyType.idl

```
1 // MyType.idl
2
3 module Example {
4     struct Point {
5         int32 X;
6         int32 Y;
7     };
8
9     struct MyType {
10         @key int32 MyKey;
11         string<512> MyString;
12         Point MyPoint;
13         sequence<int32, 128> MyIntSequence;
14         sequence<Point, 8> MyPointSequence;
15         Point MyPointArray[5];
16         @optional int32 MyOptionalInt;
17         @optional Point MyOptionalPoint;
18     };
19 };
```

10.2 RandomNumber.idl

```
1 module Example {
2     struct RandomNumberRequest {
3         int minValue;
4         int maxValue;
5     };
6
7     struct RandomNumberReply {
8         int value;
9     };
10 };
```

10.3 Shape.idl

```
1 module Example {
2     struct Shape {
3         @key string<128> color;
4         int32 x;
5         int32 y;
6         int32 shapesize;
7     };
8 };
```

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