RTI TLS Support

Release Notes

Version 7.0.0
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Chapter 1 Supported Platforms

See the column for "TLS Support" in the table of Supported Platforms for Compiler-Dependent Product, in the RTI Connext Core Libraries Release Notes. See the column for TLS.
Chapter 2 Compatibility

TLS Support is designed for use with the TCP transport that is included with RTI Connext. If you choose to use TLS Support, it must be installed on top of an existing RTI Connext installation with the same version number. It can only be used on architectures that support the TCP transport (see the RTI Connext Core Libraries Platform Notes).

TLS Support 7.0.0 is API-compatible with OpenSSL® versions 1.1.0 through 1.1.1n, not with versions earlier than OpenSSL 1.1.0. Note that TLS Support 7.0.0 has only been tested by RTI using OpenSSL 1.1.1n. If you need TLS Support 7.0.0 to run against older versions of OpenSSL, please contact support@rti.com.

TLS Support 7.0.0 uses TLS 1.3. When communicating with TLS Support 6.0.0 or below, TLS Support 7.0.0 uses TLS 1.1.

If you are upgrading from OpenSSL 1.0.1 to OpenSSL 1.0.2 or above: The number of bits of any Diffie-Hellman (DH) parameters must now be at least 1024 (see https://www.openssl.org/blog/blog/2015/05/20/logjam-freak-upcoming-changes/). Therefore, if you are using the property tls.cipher.dh_param_files and there is a DH parameter file that has fewer than 1024 bits, you must regenerate the file with at least 1024 bits.

For backward-compatibility information between this and previous releases, see the Migration Guide on the RTI Community Portal (https://community.rti.com/documentation).
Chapter 3 What's Fixed in 7.0.0

3.1 Memory Leak when Running out of Memory

If either of the internal functions RTITLS_ConnectionEndpointFactoryTLSv4_createConnectEndpoint() or RTITLS_ConnectionEndpointFactoryTLSv4_createAcceptEndpoint() ran out of memory, connection creation would fail with a memory leak.

Here is one example set of error messages, along with a valgrind result:

```
NDDS_Transport_TCPv4_Plugin_clientOpenControlConnection_connEA:!create connection endpoint
NDDS_Transport_TCPv4_Plugin_clientOpenControlConnection_connEA:error connecting to peer at 127.0.0.1:36025
NDDS_Transport_TCPv4_Plugin_clientOpenControlConnection_connEA:failed to (re)connect client control connection
NDDS_Transport_TCPv4_create_sendresource_srEA:failed to open client control connection
==23757== 8,384 (6,280 direct, 2,104 indirect) bytes in 1 blocks are definitely lost in loss record 128 of 134
==23757== at 0x4C2FB0F: malloc (in /usr/lib/valgrind/vgpreload_memcheck-amd64-linux.so)
==23757== by 0x13F366D: CRYPTO_malloc (mem.c:222)
==23757== by 0x13F36A0: CRYPTO_zalloc (mem.c:230)
==23757== by 0x1331070: SSL_new (ssl_lib.c:691)
==23757== by 0xC0FDE9: RTITLS_ConnectionEndpointFactoryTLSv4_createConnectEndpoint (TLSConnection.c:837)
==23757== by 0x6266F8: NDDS_Transport_TCPv4_Plugin_clientOpenControlConnection_connEA (Tcpv4.c:3321)
```

The leak would only happen if memory was already exhausted, so this problem did not lead to unbounded memory growth.

This problem has been fixed. Those two functions will now fail without a memory leak.

[RTI Issue ID COREPLG-589]
Chapter 4 Known Issues

Note: For an updated list of critical known issues, see the Critical Issues List on the RTI Customer Portal at https://support.rti.com.

4.1 Possible Valgrind still-reachable leaks when loading dynamic libraries

If you load any dynamic libraries, you may see "still reachable" memory leaks in "dlopen" and "dlclose". These leaks are a result of a bug in Valgrind (https://bugs.launchpad.net/ubuntu/+source/valgrind/+bug/1160352).

This issue affects the Core Libraries, Security Plugins, and TLS Support.

[RTI Issue IDs CORE-9941, SEC-1026, and COREPLG-510]