RTI Connext DDS

Core Libraries

Custom Support for
Xilinx 3.8.11 Platforms

Version 5.3.0

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Custom Support for Xilinx 3.8.11 Platforms

1 Supported Platforms

This document supplements the RTI Connext DDS Core Libraries Release Notes and RTI Connext DDS Core Libraries Platform Notes. It provides information specifically for the platform listed below.

Table 1 Custom Supported Xilinx 3.8.11 Platforms

Operating System	CPU	Compiler	RTI Architecture Abbreviation
Xilinx® 3.8.11	Zynq® Cortex A9	arm-xilinx-linux-gnueabi-gcc (Sourcery CodeBench Lite 2011.09-50) 4.6.1	armv7Linux3.0gcc4.6.1.cortex-a9

2 Transports

Supported and enabled by default:

- Shared memory (To clean up shared memory resources, reboot the kernel.)
- UDPv4

Supported but disabled by default:

- UDPv6 (The peers list must be modified to support IPv6. Mapping of the TransportPriority QoS is supported.)

Not supported:

- TCP/IPv4
- Secure WAN Transport

- TLS Support

Shared Memory Support

To see a list of shared memory resources in use, please use the '**ipcs**' command. To clean up shared memory and shared semaphore resources, please use the '**ipcrm**' command.

The shared memory keys used by Connext DDS are in the range of 0x400000. For example:

```
ipcs -m | grep 0x004
```

The shared semaphore keys used by Connext DDS are in the range of 0x800000; the shared mutex keys are in the range of 0xb00000. For example:

```
ipcs -s | grep 0x008

ipcs -s | grep 0x00b
```

Please refer to the shared-memory transport online documentation for details on the shared memory and semaphore keys used by Connext DDS.

3 Features

These features are supported:

- Modern C++ API C++ 03
- Multicast
- Monotonic clock
- Request/reply communication
- Control of CPU core affinity for RTI threads
- Distributed Logger

For details on these features, see the Linux section of the RTI Connext DDS Core Libraries Platform Notes.

These features are not supported:

- Durable Writer History and Durable Reader State
- Security Plugins

4 Compiling and Running

Table 2 Building Instructions lists the compiler flags and libraries you will need to link into your application.

Table 3 Running Instructions shows the environment variables required to be set at run time.

Table 4 Library-Creation Details provides details on how these custom libraries were built. This table is provided strictly for informational purposes; you do not need to use these parameters to compile your application. You may find this information useful if you are involved in any in-depth debugging.

Table 2 Building Instructions

API	Library Format	Required RTI Libraries[a] [bc]	Required System Libraries	Required Compiler Flags
C++ (Traditional and Modern)	Static Release	libnddscppz.a or libnddscpp2z.a libnddscz.a libnddscorez.a librticonnextmsgcppz.a	-ldl -lnsl -lm -lpthread -lrt	-DRTI_UNIX
	Static Debug	libnddscppzd.a or libnddscpp2zd.a libnddsczd.a libnddscorezd.a librticonnextmsgcppzd.a		
	Dynamic Release	libnddscpp.so or libnddscpp2.so libnddsc.so libnddscore.so librticonnextmsgcpp.so		
	Dynamic Debug	libnddscppd.so or libnddscpp2d.so libnddscd.so libnddscored.so librticonnextmsgcppd.so		

[a] The C/C++ libraries are in <NDDSHOME>/lib/<architecture> (where <NDDSHOME> is where Connext DDS is installed, such as /home/your user name/rti_connext_dds-5.x.y).

[b] The *rticonnextmsg* library only applies if you have the Connext DDS Professional, Evaluation, or Basic package type. It is not provided with the Connext DDS Core package type.

[c] Choose libnddscpp*.* for the Traditional C++ API or libnddscpp2*.* for the Modern C++ API.

Table 2 Building Instructions

API	Library Format	Required RTI Libraries[a] [b][c]	Required System Libraries	Required Compiler Flags
C	Static Release	libnddscz.a libnddscorez.a librticonnextmsgcz.a	-ldl -lnsl -lm -lpthread -lrt	-DRTI_UNIX
	Static Debug	libnddsczd.a libnddscorezd.a librticonnextmsgczd.a		
	Dynamic Release	libnddsc.so libnddscore.so librticonnextmsgc.so		
	Dynamic Debug	libnddscd.so libnddscored.so librticonnextmsgcd.so		

Table 3 Running Instructions

RTI Architecture	Library Format	Environment Variables
armv7Linux3.0gcc4.6.1.cortex-a9	Static	None required
	Dynamic	LD_LIBRARY_PATH= ${NDDSHOME}/lib/<*architecture*>: ${LD_LIBRARY_PATH}[d]

[a]The C/C++ libraries are in <NDDSHOME>/lib/<architecture> (where <NDDSHOME> is where Connext DDS is installed, such as /home/your user name/rti_connext_dds-5.x.y).

[b]The *rticonnextmsg* library only applies if you have the Connext DDS Professional, Evaluation, or Basic package type. It is not provided with the Connext DDS Core package type.

[c]Choose libnddscpp*.* for the Traditional C++ API or libnddscpp2*.* for the Modern C++ API.

[d]${NDDSHOME} represents the root directory of your Connext DDS installation. ${LD_LIBRARY_PATH} represents the value of the LD_LIBRARY_PATH variable prior to changing it to support Connext DDS.

Table 4 Library-Creation Details

RTI Architecture	Library Format	Compiler Flags Used by RTI
armv7Linux3.0gcc4.6.1.cortex-a9	Release	-mcpu=cortex-a9 -march=armv7-a -mlong-calls -fpic
	Debug	-mcpu=cortex-a9 -march=armv7-a -mlong-calls -fpic -g