

DATASHEET

RTI Connex Tools

ACCELERATING THE DEVELOPMENT OF DISTRIBUTED SYSTEMS

HIGHLIGHTS

Powerful tools for developing deep insights into the performance, health and resource utilization of distributed systems

Multiple views of distributed data for debugging, monitoring, analytics and administration

Quick access to install, configure and run RTI Connex[®] DDS components

Data logging with real-time notifications as error or warning conditions occur

Record and replay DDS data for algorithm development, regression testing and post-mission analysis

Wireshark[®] plug-in for viewing and analyzing packets at the wire level for online troubleshooting or offline analysis

Fun and powerful Shapes demo to quickly learn about Connex

Simple command-line utilities for checking connectivity and data activities

RTI Connex[®] Tools provide deep visibility into running systems, help troubleshoot application connectivity, solve complex data integration problems and speed time to market. Connex Tools are critical for distributed systems developers, whether they are just starting out with DDS or have been building DDS applications for a while. Connex Tools ease the entire development lifecycle from design to production.

POWERFUL TOOLS FOR THE ENTIRE DEVELOPMENT PROCESS

System monitoring and administration: Maintaining the health of application connectivity is critical when developing distributed systems. Insightful tools that provide minimally-intrusive visibility into running systems enable developers to resolve operational problems and fine-tune system performance.

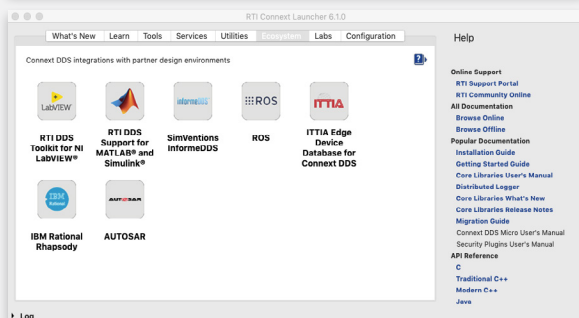
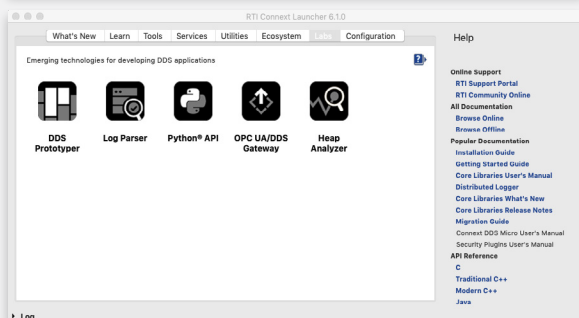
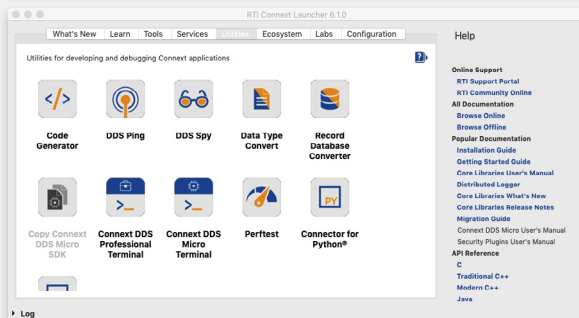
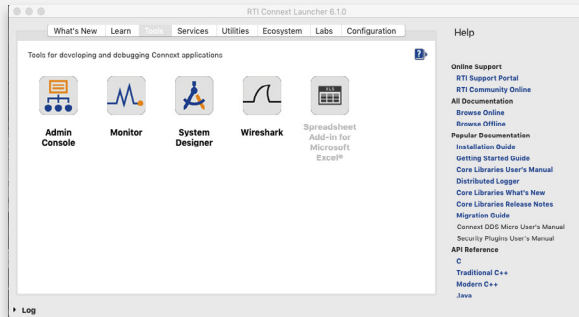
Functional, systems and performance testing: Tools that provide a variety of ways to simulate error conditions significantly improve code quality and can reduce effort and cost for both R&D and QA teams.

Development and troubleshooting: Diagnosing a connectivity issue can be challenging, especially during development when most debugging mechanisms are primitive. Tools that provide insight into a distributed system help analyze the root cause, find the right solution and shorten product time to market.

RTI TOOLS INCLUDED IN CONNEXT® DDS PROFESSIONAL

LAUNCHER: Start Here

Launcher provides a “single pane of glass” view for insight into the entire ConnexT environment. It keeps tabs on all ConnexT Tools. An intuitive Launcher interface helps seamlessly add new components and target platforms to the current ConnexT environment, see what is already installed, find documentation and web resources and create new source code projects. Launcher runs all the ConnexT Tools and command-line utilities.

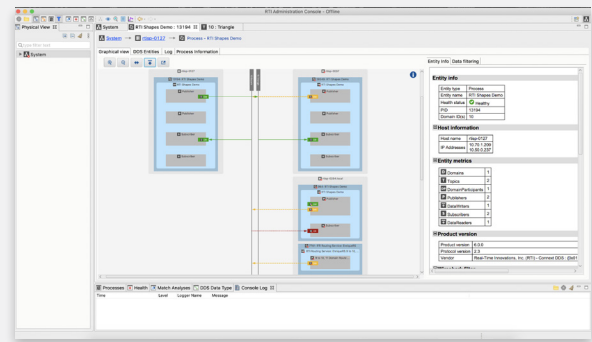


RTI ConnexT Launcher

ADMINISTRATION CONSOLE: Take Control

Administration Console is an essential tool for troubleshooting and monitoring all ConnexT infrastructure services as well as visualizing data directly from your system. The Administration Console minimizes troubleshooting time and effort in all stages of application development by proactively analyzing system configuration and log messages. Problems get highlighted, making them easy to find and address. The Administration Console provides multiple views into your system, allowing developers to:

- Inspect and visualize instances and samples
- Show samples as graphs or tables
- Identify Quality of Service (QoS) mismatches (match graphs)
- Find data type mismatches
- Discover and inspect processes, topics and data types
- And much more



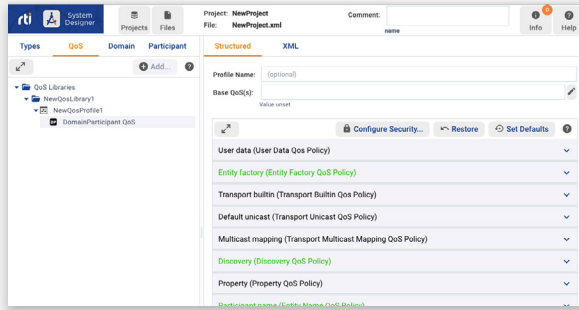
Administration Console

SYSTEM DESIGNER: Validate Your Design With a Single Click

System Designer allows distributed system developers to easily define and configure a ConnexT system using an intuitive web-based graphical tool. It acts as a user interface to ConnexT XML-based Application Creation, which is a mechanism that allows users to specify all the aspects of a ConnexT system in XML format, including:

- Data Types that will be used to communicate information in the system
- Topics that will be used in the domain, each associated with a Data Type
- Domain Participants that can be used in the system
- Data Writers and Data Readers present within each Domain Participant, each associated with its corresponding Topic
- QoS libraries and profiles and their use to configure all the DDS Entities in the system

System Designer includes a built-in XML editor to enable users to directly edit the XML, if desired. Once your application is designed, you can validate the design with a single click of the mouse by sending the XML definition to the ConnexT Code Generator.

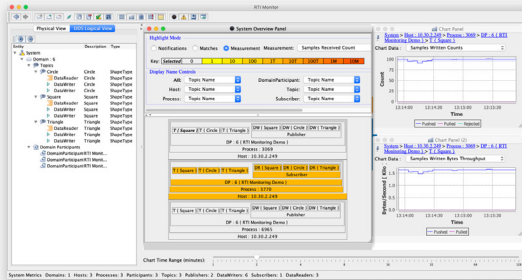


System Designer

MONITOR: Troubleshoot Like a Pro

Monitor helps troubleshoot DDS-enabled applications throughout the entire process of integration and testing. It also provides continuous visibility into deployed systems in production through real-time graphical views of the entire ecosystem of applications connected by ConnexT DDS. Monitor aids in diagnosing unusual behavior patterns and reduces risks associated with connectivity issues and network usage.

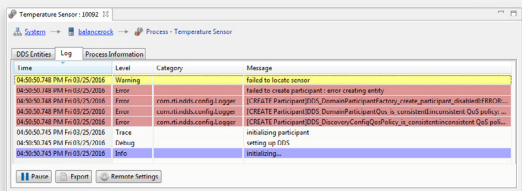
Monitor is critical when it comes to performance optimization. RTI provides an instrumentation package in addition to the ConnexT DDS libraries. The package can produce a wealth of real-time performance data from the running applications and publish this data to the Monitor. The instrumentation has minimal performance overhead for applications.



Monitor

DISTRIBUTED LOGGER: Receive Real-Time Warnings

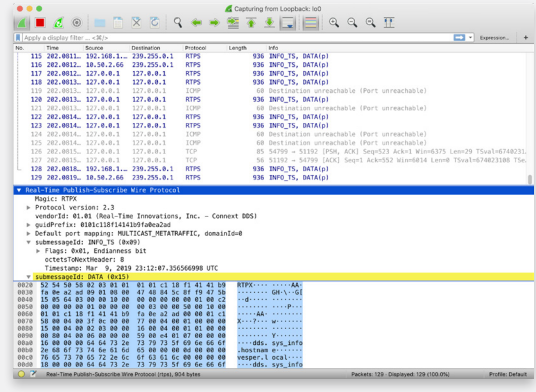
Distributed Logger delivers real-time notifications when error or warning conditions occur anywhere in the DDS environment. It enables applications to log messages using existing logging infrastructure and to publish them to ConnexT. It also publishes ConnexT log messages to the same topics. Warnings and errors are correlated from ConnexT with log messages from applications, which greatly aids troubleshooting. All the log messages can be centrally collected and saved for later analysis and troubleshooting. Both Monitor and Admin Console can be used to see and analyze the messages.



Distributed Logger

WIRESHARK: Understand Network Packets

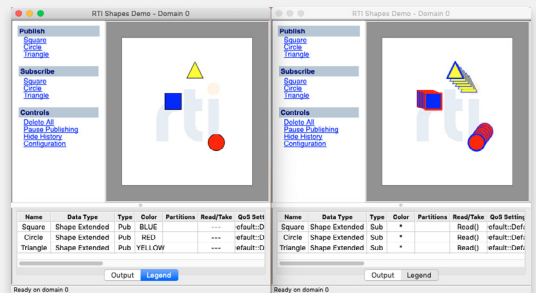
Wireshark is a purpose-built network protocol analyzer that looks at all the network packets and captures the ones of interest. RTI Tools provides special plugins for decoding DDS messages and examining their content. The display shows packets in real time as they arrive. Wireshark is invaluable for learning DDS, as well as a go-to tool for deep packet inspection and network connectivity troubleshooting. It is free and available for download from the RTI Community Portal (<https://community.rti.com/downloads>).



Wireshark

SHAPES: Learn DDS Quickly

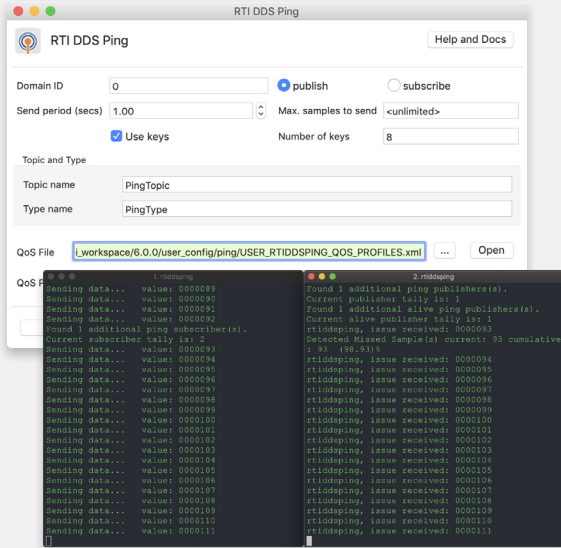
Development teams get up to speed quickly on DDS fundamentals with Shapes. The Shapes Demo is a powerful learning tool for understanding DDS concepts, such as publish-subscribe messaging, data centrality and QoS. Shapes is a visually appealing, game-like application that allows you to experiment by modeling the desired behavior without coding. It is suitable for users of any level and does not require programming skills or prior DDS knowledge. It is free and available for download from the RTI Community Portal (<https://community.rti.com/downloads>).



Shapes Demo

RTI DDS PING: Reach Out for Open Ports

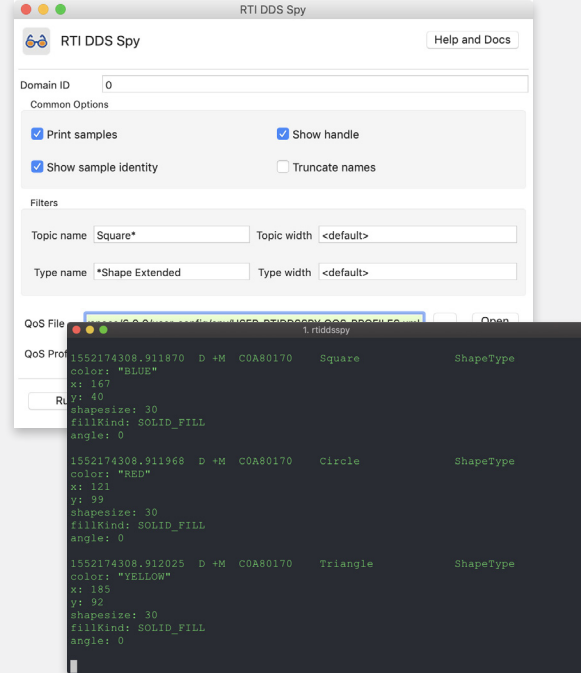
RTI DDS Ping can quickly discover if firewall settings on the network are preventing DDS discovery traffic. While the standard ping utility can confirm basic reachability between machines, it cannot check if the ports needed for DDS discovery are open. Fortunately, the RTI DDS Ping utility does exactly that!



DDS Ping

RTI DDS SPY: Take a Peek at Application Data

RTI DDS Spy enables inspection of data that applications are publishing. It is a command-line utility that can subscribe to select DDS topics and display the data samples it receives to the terminal.



DDS Spy

ABOUT RTI

Real-Time Innovations (RTI) is the largest software framework company for autonomous systems. RTI Connex[®] is the world's leading architecture for developing intelligent distributed systems. Uniquely, Connex shares data directly, connecting AI algorithms to real-time networks of devices to build autonomous systems.

RTI is the best in the world at ensuring our customers' success in deploying production systems. With over 1,700 designs, RTI software runs over 250 autonomous vehicle programs, controls the largest power plants in North America, coordinates combat management on U.S. Navy ships, drives a new generation of medical robotics, enables flying cars, and provides 24/7 intelligence for hospital and emergency medicine. RTI runs a smarter world.

RTI is the leading vendor of products compliant with the Object Management Group[®] (OMG[®]) Data Distribution Service[™] (DDS) standard. RTI is privately held and headquartered in Sunnyvale, California with regional offices in Colorado, Spain and Singapore.

Download a free 30-day trial of the latest, fully-functional Connex software today: <https://www.rti.com/downloads>.

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