RTI Connext DDS 5.3

What's New in the First Connectivity Software for the Industrial IoT

RTI Connext® DDS is the first connectivity framework designed for the demanding requirements of the Industrial Internet of Things (IIoT). Connext DDS is a databus that manages data flow in Industrial IoT systems. It complies with the Object Management Group (OMG) Data Distribution Service (DDS) standard to foster interoperability and an open architecture, reducing product development and lifecycle costs.

Connext DDS 5.3 Professional Includes:

- RTI Core Libraries
- RTI Web Integration Service
- RTI Routing Service
- RTI Gateway Toolkit
- RTI Distributed Logging Library
- RTI Administration (Admin) Console
- RTI Prototyper
- RTI Performance Test
- RTI Recording and Replay Service
- RTI Monitor
- RTI Secure WAN Transport
- RTI TLS Support
- RTI Spreadsheet Add-in for Excel
- RTI Code Generator
- RTI Persistence Service
- RTI DDS Ping & Spy

Connext DDS Secure 5.3 comes with everything in Connext DDS Professional, plus the new RTI Security Plugins.

For developers who might have specialized use cases, the following add-ons are also available:

- RTI Security Plugin SDK
- RTI Limited Bandwidth Plugin
- RTI Queuing Service
- RTI Database Integration Service

What's New

Interoperable Security

Connext DDS 5.3 features new RTI Security Plugins in support of the OMG's finalized DDS Security specification. As a result, devices and applications developed with Connext DDS 5.3 will interoperate with those that take advantage of future Connext DDS versions. Given the long lifecycle of IIoT systems, forward interoperability is essential for products that cannot be easily upgraded once they are deployed. In addition, RTI verified Connext DDS 5.3 interoperates with other DDS Security implementations, enabling plug-and-play systems that incorporate components from multiple suppliers.

The plugins apply the DDS standard's fundamental principle of data-centricity to security. Unlike other network security solutions, the RTI Security Plugins support fine-grained security so that developers have the flexibility to only implement the security capabilities required by their systems, such as authentication, encryption and access control, without compromising performance. Additionally, the security plugins are updated to take advantage of native hardware encryption acceleration. This means that out-of-the-box, the security plugins could deliver on the order of two-times performance improvement for cryptographic functions. Developers can also use the optional plugin SDK to modify the security plugins to use FIPS 140-2 compliant crypto engines, support custom security hardware like trusted platform modules, or adapt plugin behavior to suit their system's security model.

Historical Data Query

IIoT applications often need access to historical data to refine analytics or update dashboards. Due to the large amount of data in IIoT systems of systems, it is rarely possible to send all data to all locations. Connext DDS 5.3 now provides the capability to retrieve historical data when needed, without flooding the network bandwidth.

With Connext DDS 5.3, data publishers cache historical data and only forward it across the network when a subscriber requests it. Highly efficient queries can filter for specific content further reducing network overhead and latency for large-scale IIoT systems.

Seamless Device Mobility

In IIoT systems, it is critical that systems maintain connectivity even as devices roam across networks, such as in autonomous cars. Different networks assign different addresses, so traditional approaches would cause a loss in connectivity and data during the switchover.

With Connext DDS 5.3, devices automatically and securely re-locate and re-authenticate to maintain uninterrupted connectivity whenever a network address changes.

Web Application Interoperability

In Connext DDS 5.3, the new RTI Web Integration Service makes it easier to build user-facing web applications. This service provides a RESTful interface to the Connext Databus based on the Web-enabled DDS specifications.

Built on Standards. Enhanced with Expertise from Real-World Applications.

RTI provides far more than an implementation of the DDS standard. RTI Connext DDS Professional is a comprehensive connectivity solution built around a publish-subscribe protocol, called DDS-RTPS. In addition to standardized technology, RTI's product suite provides:

- Runtime libraries for managing connectivity and security
- Runtime services to scale and integrate IIoT systems
- Tools to reduce time-to-market by easing development, debugging, testing and integration
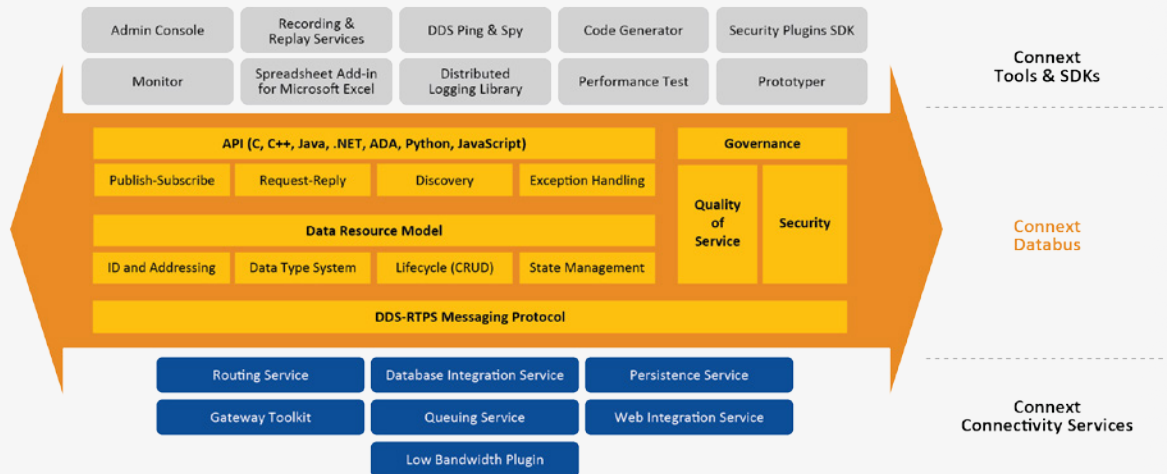
About RTI

Real-Time Innovations (RTI) is the Industrial Internet of Things (IIoT) connectivity company. The RTI Connext® databus is a software framework that shares information in real time, making applications work together as one, integrated system. It connects across field, fog and cloud. Its reliability, security, performance and scalability are proven in the most demanding industrial systems. Deployed systems include medical devices and imaging; wind, hydro and solar power; autonomous planes, trains and cars; traffic control; Oil and Gas; robotics, ships and defense.

RTI lives at the intersection of functional artificial intelligence and pervasive networking[SM].

RTI is the largest vendor of products based on the Object Management Group (OMG) Data Distribution Service™ (DDS) standard. RTI is privately held and headquartered in Sunnyvale, Calif.

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Your systems. Working as one.

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