RTI Connext™ DDS Secure provides the world’s first off-the-shelf messaging platform that delivers the security, performance and safety required for deployment of the Industrial Internet of Things (IIoT). It is also the first solution to comply with the new Data Distribution Service (DDS) Security specification from the Object Management Group (OMG).

Highlights:

- Provides authentication, authorization, non-repudiation, confidentiality and integrity
- Protects discovery information, metadata and data
- Defends against unauthorized access, tampering and replay
- Operates without centralized servers for high performance, scalability and availability
- Runs over any transport including TCP, UDP, multicast and shared memory
- Integrates with existing security infrastructures and hardware acceleration
- Secures unmodified existing DDS applications

Securing critical infrastructure – including medical, energy, manufacturing, transportation and defense systems – is not only essential for safety and economic reasons, it is also extraordinarily challenging. Security cannot come at the expense of performance or reliability. The machines that make up these systems must perform at the speed of the physical processes they manage. And even brief unplanned outages can have calamitous consequences.

Connext DDS Secure is the world’s first messaging platform to address IIoT security, real-time performance and reliability requirements.

The architecture of Connext DDS is fundamentally high performance and reliable. Unlike messaging middleware designed for IT systems, Connext DDS does not require centralized brokers, servers or administration. Applications automatically discover each other and communicate peer-to-peer. As a result, Connext DDS delivers very low latency and does not have a single point of failure. It is also well suited for autonomous and embedded systems like intelligent machines.

Connext DDS Secure provides a robust set of security capabilities including authentication, access control, encryption, data tagging and logging.
Customizable
An optional SDK allows implementation of custom security plugins. These can be used to integrate with existing authentication infrastructures, support additional encryption algorithms or leverage hardware acceleration.

Transport Flexibility
Security is implemented above the transport layer. Any Connext DDS transport can be used securely, including UDP, TCP and shared memory. Support for UDP multicast (both reliable and best effort) enables efficient data distribution when there are many subscribers to the same data.

Optimized Performance
Only data that must be private has to incur the overhead of encryption and decryption. This is much more efficient than TLS and other transport-layer security approaches that encrypt all data. Other data can be efficiently signed with a Message Authentication Code (MAC) to ensure authenticity.

About RTI
RTI provides the real-time communications platform for the Internet of Things. Our RTI Connext™ messaging software forms the core nervous system for smart, distributed applications. RTI Connext DDS allows devices to intelligently share information and work together as one integrated system.

Our customers span the breadth of the Internet of Things, including medical, energy, mining, air traffic control, trading, automotive, unmanned systems, industrial SCADA, naval systems, air and missile defense, ground stations, and science. The total value of system designs that trust RTI for their fundamental architecture exceeds $1 trillion.

We are committed to open standards, open community source and open architecture. RTI provides the leading implementation of the Object Management Group (OMG) Data Distribution Service (DDS) standard.

As the world’s largest embedded middleware provider, RTI is privately held and headquartered in Sunnyvale, California.