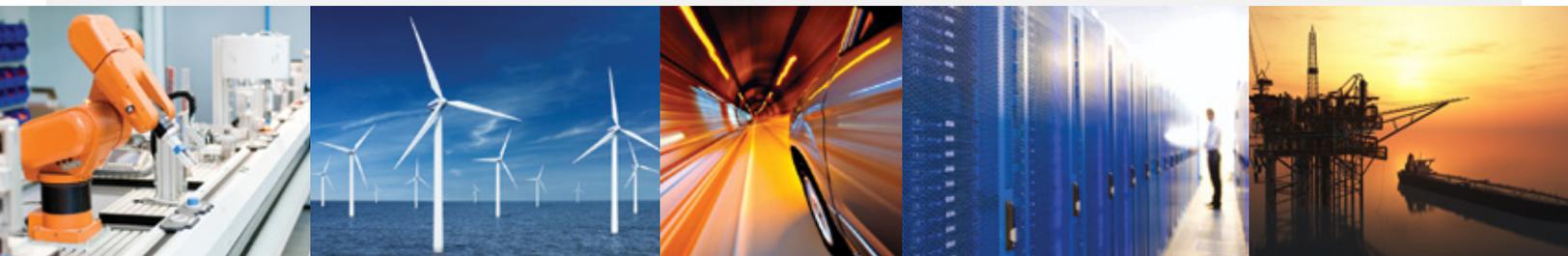


RTI Connex DDS Secure



Secure Messaging for Intelligent Machines



RTI Connex™ 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.

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

The architecture of Connex DDS is fundamentally high performance and reliable. Unlike messaging middleware designed for IT systems, Connex DDS does not require centralized brokers, servers or administration. Applications automatically discover each other and communicate peer-to-peer. As a result, Connex 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.

Connex DDS Secure provides a robust set of security capabilities including authentication, access control, encryption, data tagging and logging.

Standard Capabilities

Authentication	<ul style="list-style-type: none"> • X.509 Public Key Infrastructure (PKI) with a pre-configured shared Certificate Authority (CA) • Digital Signature Algorithm (DSA) with Diffie-Hellman and RSA for authentication and key exchange
Access Control	<ul style="list-style-type: none"> • Specifications via permissions file signed by shared CA • Control over ability to join DDS Domains and Partitions, read or write Topics • Control on individual objects and Quality of Service (QoS) via plugins
Cryptography	<ul style="list-style-type: none"> • Protected key distribution • AES128 and AES256 for encryption • HMAC-SHA1 and HMAC-SHA256 for message authentication and integrity
Data Tagging	<ul style="list-style-type: none"> • Used to specify security metadata, such as classification level • Sent during endpoint discovery • Can be used to determine access privileges (via plugin)
Logging	<ul style="list-style-type: none"> • Log security events to a local file or distribute securely over Connex DDS

Customizable

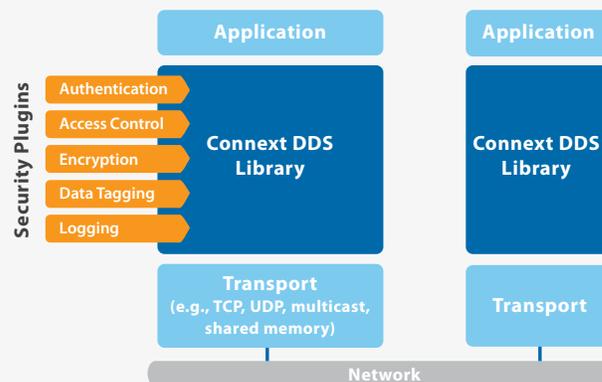
An optional SDK allows implementation of custom security plugins. These can be used to integrate with existing authentication infrastructures, support additional encryption algorithms or leverage hardware acceleration.

Transport Flexibility

Security is implemented above the transport layer. Any Connex 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 connectivity platform for the Industrial Internet of Things.

Our RTI Connex® messaging software forms the core nervous system for smart, distributed applications. RTI Connex allows devices to intelligently share information and work together as one integrated system. RTI was named "The Most influential Industrial Internet of Things Company" in 2014 by Appinions and published in Forbes.

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.

RTI is 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.

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



Your systems. Working as one.

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