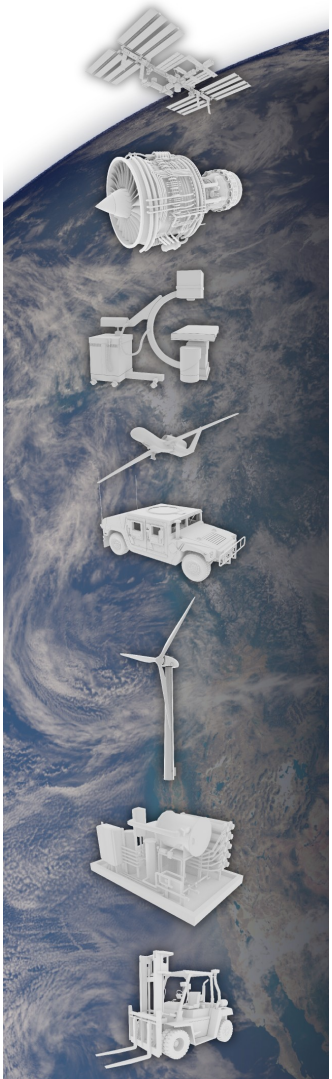
CoreDX™ DDS

Security

TWINOAKS COMPUTING INC.™

PRACTICAL MIDDLEWARE EXPERTISE

End-to-End Security with CoreDX DDS



CoreDX DDS offers a complete state-of-the-art security solution including authentication, encryption, signing, and access control. A wide range of control and configuration options enable flexible deployment scenarios while still enabling dynamic and scalable publish-subscribe communications. Each area of secure communications is fully configurable:

- Authentication
- Integrity
- Confidentiality
- Access Control

With **CoreDX DDS** security, you have access to all the standard CoreDX DDS features, including:

- Full automatic and dynamic discovery
- UDP multicast based communications
- Reliable UDP multicast communications
- Data smart features like content filtering, deadlines, ownership, liveliness, and lifespan

The **CoreDX DDS** security features are fully integrated with the publish-subscribe protocols [not simply layered on top of SSL], allowing the designer full flexibility on a topic-by-topic basis. Further, the implementation follows the DDS standard plug-in model allowing the easy integration of user designed security modules.

Twin Oaks offers Free CoreDX DDS IR&D Licenses to qualified research projects and institutions.

Ordering Instructions

Get started by visiting our website and downloading the 30-day Full Featured standard CoreDX DDS Evaluation software.

Download an evaluation: http://www.twinoakscomputing.com/coredx/download

Contact us for information about evaluating CoreDX DDS Secure.

CoreDX DDS Authentication

CoreDX DDS provides certificate based asymmetric authenticated cryptography for key exchange between DDS participants.

High performance dynamic symmetric cryptography is used for data exchange to maximize performance while maintaining secure communications.

Certificates and encryption are plug-in basis allowing for ultimate configurability and control by the system designer.

CoreDX DDS Integrity

CoreDX DDS provides the option to include a hash-based message authentic code with each message. This provides the ability to detect accidental or intentional message changes.

The integrity feature is configurable on a per-Topic bases, and the user can select from:

- NONE
- SHA1
- SHA256

CoreDX DDS Confidentiality

With the CoreDX DDS confidentiality plug-in, data may be encrypted for transmission over the network. The system designer may configure to encrypt application data, discovery (meta) data, or all.

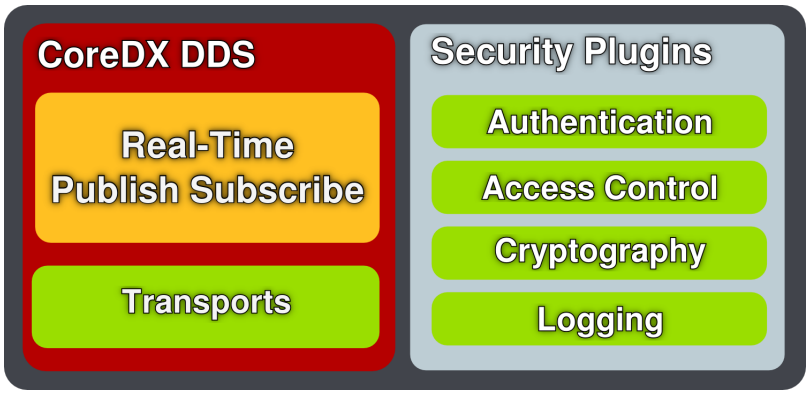
The encryption algorithm is configurable, and for each Topic, the user may configure which data is encrypted: just the application data, or both data and metadata. The confidentiality plug-in utilizes GCM-AES for state of the art, high-speed communications.

CoreDX DDS Access Control

Access to 'join' and communicate within the secure DDS network is controlled by the **DomainGovernance** and **Permissions** XML documents.

These documents are used to configure the Domains, Topics, DataReaders, and DataWriters that may be created within a DomainParticipant.

Security Pluggable Interface



CoreDX DDS provides the standardized (interoperable) security plug-in as specified by the Object Management Group (OMG). All the above features and configurability are included.

The CoreDX DDS security interface is clean and well defined, allowing users to build and integrate their own security models.

About Twin Oaks Computing

Twin Oaks Computing, Inc. provides state-of-the-art engineering in support of high-performance communications, including device drivers, communication protocols, inter-process communications, network services, and secure environments. Our unique company culture allows us to be agile and provide superior responsiveness to our customers, and our extensive domain experience is essential to our customers' ability to perform their missions. We are committed to being a premier source of quality high-performance communications technologies for use in DoD and commercial applications.

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