CoreDX DDS™: Communications Middleware

CoreDX DDS is an easy-to-use, cross-platform, cross-language, inter-process communication (IPC) library. It is the revolutionary communications middleware that reduces schedule time and risk on distributed software development projects. CoreDX DDS is:

- **High-Performance**: outperforming other common middleware technologies like OPC-UA, MQTT, AMQP, CORBA, and JMS
- **Secure**: with advanced, comprehensive end-to-end security, CoreDX DDS meets the security requirements of today's business-critical and mission-critical systems
- **Scalable**: from on-board communications to networks containing 1000's of devices, CoreDX DDS efficiently handles data communications
- **Flexible**: Systems are easy to re-configure, with the ability to add and remove components, features, and functions even after deployment

Based on open standards for guaranteed interoperability and long term viability, CoreDX DDS is the only secure communications middleware that is also fully specified, from the API down to the wire protocols.

The Power of CoreDX DDS

Super small and blazingly fast, CoreDX DDS is a full-featured implementation of the Data Distribution Service standards that connects all your devices: servers, mobile devices, and embedded components, all the way down to FPGAs, DSPs, PLCs, and microcontrollers.

Focus your domain expertise on your system requirements: CoreDX DDS handles all aspects and complex details of data communications including security, network disconnects, reliability, redundancy, filtering, data storage and organization.

Depend on a robust infrastructure: CoreDX DDS is deployed in 1 million computers and devices, and has been thoroughly tested for critical systems, including surgical devices, power grid infrastructures, and space vehicles.

Secure your systems at their most vulnerable points: CoreDX DDS contains sophisticated security aspects, handling authentication, access control, integrity, and confidentiality.

Build on a high pedigree foundation: CoreDX DDS is 100% developed and maintained by Twin Oaks Computing employees and US citizens.

Lean on world-class support: Our customers and partners agree that Twin Oaks Computing provides unparalleled technical and business support. Responses are fast, interactions are professional, and answers are thorough.

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

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CoreDX DDS Supported DDS Standards

OMG Data Distribution Service Standards Supported:
- DDS — Function and API
- RTPS — Wire Protocol
- X-Types — Advanced and Dynamic Type Support
- DDS-WEB — DDS for embedded and/or browsers
- DDS-SECURITY — Secure DDS
- DDS-RPC — RPC over DDS
- DDS-XML— Consolidated XML Syntax
- DDS-CXX — 'Modern' C++ API

CoreDX DDS Language, OS, CPU Support

Operating Systems:
- Linux 2.6+
- Windows
- Mac OSX
- Solaris
- Thread-X
- FreeRTOS
- Unison
- Erika
- QNX
- Android
- iOS
- INTEGRITY
- LynxOS
- VxWorks
- DeOS

Hardware Platforms:
- X86, 32bit, 64bit
- UltraSPARC
- ARM7, ARM9, Aarch64
- MIPS 32bit, 64bit
- PowerPC
- FPGA's
- DSP

Development Languages:
- C
- C++
- C#
- Java
- Python
- JavaScript

Customizations for additional platforms and languages available, contact us for information.

CoreDX DDS Transports, Cryptography Support

Transports:
- RTPS (UDP, IPv4, IPv6)
- TCP
- Multicast / Unicast
- Serial
- Zigbee
- ARINC-653

Crypto Libraries:
- OpenSSL
- WolfSSL

Customizations for additional transports and crypto libraries available, contact us for information.

CoreDX DDS Resource Requirements

RAM:
- CoreDX DDS (no security): 850 KB
- CoreDX DDS Secure: 1300 KB + crypto library requirements
- CoreDX DDS Nano Client: 8 KB
- CoreDX DDS Web Client: 0 KB + HTTP code/data

Flash:
- CoreDX DDS (no security): 800 KB
- CoreDX DDS Secure: 1200 KB + crypto library requirements
- CoreDX DDS Nano Client: 8KB
- CoreDX DDS Web Client: 0 KB + HTTP code/data

Network:
- 1 Mbps

System:
- Clock
- Network stack

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.

Twin Oaks Computing, Inc

230 Third Street, Suite 260
Castle Rock, CO 80104
Phone (toll-free): 1-855-671-8754

www.twinoakscomputing.com
contact@twinoakscomputing.com