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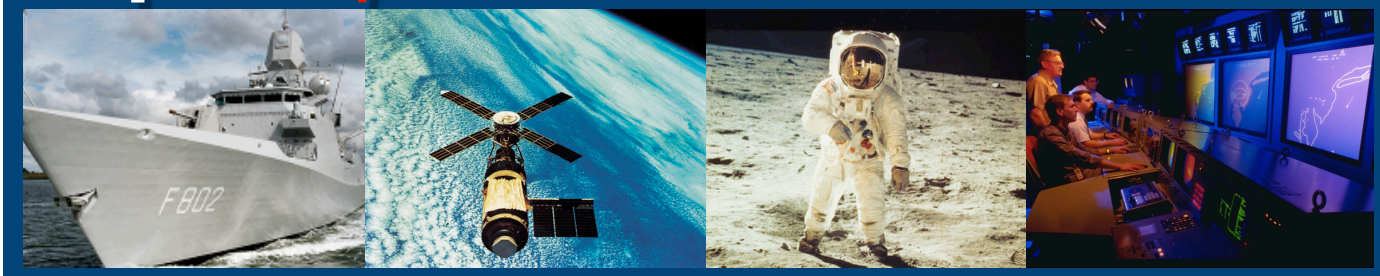
OpenSplice | DDS

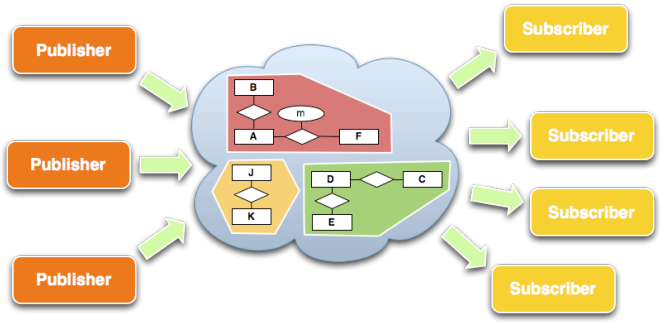
Defense & Aerospace



The Right Data at the Right Time at the Right Place - All the Time.

Open*Splice* **DDS** is an extreme-performance, real-time, and highly scalable data-centric publish/subscribe middleware that provides next generation mission- and safety-critical applications with the ideal platform for addressing complex real-time information distribution and management challenges.

Real-time information distribution and management has historically supported high performance data processing systems, such as radar processors, flight data processors, combat management systems, and flight control.



The need for real-time information distribution and management is rapidly expanding as systems increasingly run in net-centric environments characterized by thousands of platforms, sensors, decision nodes, and computers connected together to exchange information, support sense-making, enable collaborative decision making, and effect changes in the physical environment. OpenSplice DDS has been designed to optimally address the real-time information distribution and management challenges posed by traditional high performance real-time data-processing systems, as well as next generation netcentric systems. It has a proven success record of scaling from systems ranging from multi-processor single-board computer, to large scale net-centric system of systems.

A Field-Proven Solution

OpenSplice DDS has many proven production deployments that demonstrate its exceptional strengths in supporting complex mission-critical systems in a range of application domains, such as defense, aerospace, transportation, telecommunication, and financial services. For example, the TACTICOS combat management system developed by THALES Naval Netherlands uses OpenSplice DDS to achieve (1) exceptional scalability, from small ships to aircraft carriers, and (2) high applications performance, availability, and determinism even under temporary overload conditions. TACTICOS is currently in use in over 15 Navies worldwide serving more than 26 ships-classes ranging from small patrol boats up to large frigates and aircraft carriers.

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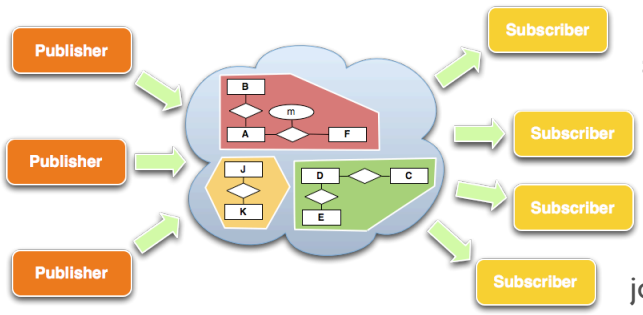
Setting Higher Standards for Publish/Subscribe Technologies

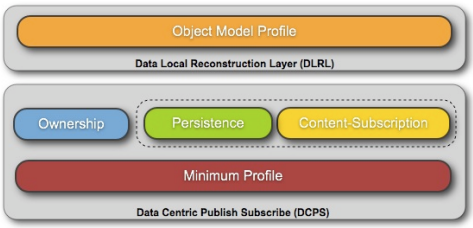
With its extraordinary support for complex QoS and data-centricity, OpenSplice DDS provides the future Publish/Subscribe technologies today.

Real-Time Data-Centric Publish/Subscribe



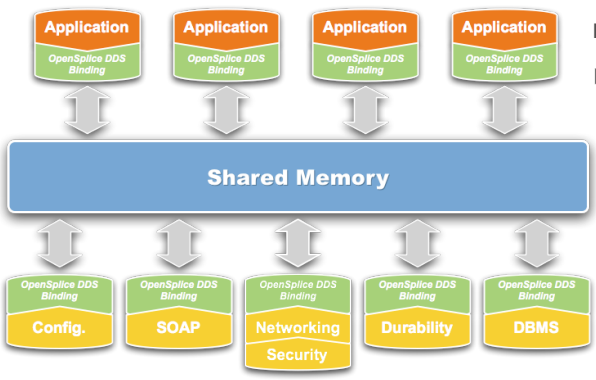
OpenSplice DDS perfectly blends and extends the most useful features found in real-time messaging middleware and relational data-bases. From real-time messaging middleware, OpenSplice DDS draws the efficiency in distributing data, the predictability, and the throughput; from relational data-bases, it draws the ability to define relational data models and operate on them via SQL92 expressions to specify content-based subscriptions, join, projection, filters, and queries. These capabilities are provided via a fully distributed architecture that ensures performance, predictability and scalability, and are enhanced with a rich set of QoS properties that allow traffic prioritization, traffic shaping, hardware and software filtering, and persistence.

Standards Based



OpenSplice DDS is fully compliant with the Object Management Group (OMG) "Data Distribution Service for Real-Time Systems v1.2" (DDS) Specification. OpenSplice DDS is the only product that implements both DDS layers: the Data Centric Publish/Subscribe (DCPS) layer, and the Data Local Reconstruction Layer (DLRL). The DCPS layer provides the ability to use a relational information model to specify the information produced and consumed by publishers and subscribers, respectively. The DLRL extends the DCPS to allow Object Oriented (OO) information models to specify the information shared by a DDS application. When using the DLRL layer, familiar Object Oriented constructs, such as inheritance and relationships, can be used to model the information to be shared and distributed within the system, thus further improving expressiveness, productivity, and reusability.

Architectural Highlights



OpenSplice DDS achieves efficiency, scalability, and determinism via a shared-memory architecture that

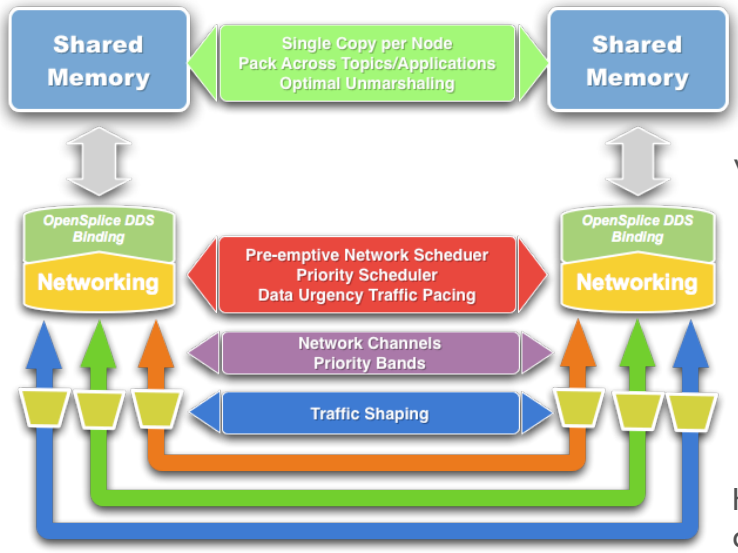
- fosters efficient information sharing and communication between applications running on the same host, and
- enables node-to-node, as opposed to application-to-application, communication and discovery, thereby achieving fine-grained control over networking resources, scalability and discovery, and communication performance.

OpenSplice DDS is built as a highly modular collection of pluggable services that provide a rich set of features, such as advanced networking, security, database integration with any ODBC 3.0-compliant DBMS, and web services integration.

Designed for Performance, Predictability and Scalability

OpenSplice DDS can handle millions of messages per second, while ensuring high determinism and very low latencies. Its advanced support for network traffic engineering ensures that the system remains stable and predictable even in temporary overload conditions.

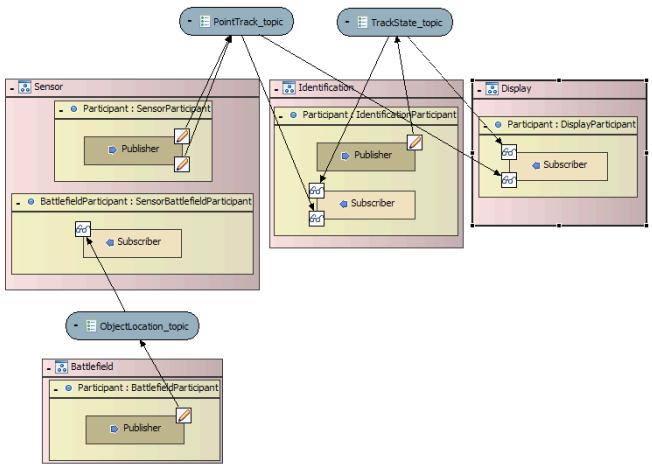
Advanced Networking Technology



The OpenSplice DDS networking service is one of its most distinguishing features. The networking service fetches the data from the shared memory segment, and ships it to interested parties, thereby making optimal use of resources whilst enforcing the required QoS levels. By employing a shared memory architecture, the networking service can optimize network utilization by bundling information across topics and applications. The networking service also supports any user-defined number of partitions and of network channels. Partitions are mapped to IP multicast addresses to segregate different traffic flows, while network channels are dedicated to handle traffic of a specified priority range. Network channels help enforce messages priority even on non-priority-preserving transports, such as the TCP/IP or UDP/IP. Another important feature provided by the OpenSplice DDS's networking service is traffic shaping. For every channel it is possible to define the traffic profile, and ensure that the network utilization never exceeds a user-specified value. In summary, the OpenSplice DDS's networking service allows users to (1) fine-tune the use of network resources by means of partitions and channels, (2) prioritize data for every single node to ensure that the more important data always preempts less important data, and (3) bundle data across topics and applications to ensure optimal throughput and reduce CPU utilization.

Unparalleled Productivity

OpenSplice DDS is available on all major operating systems (OS) including Linux, Windows, Solaris, VxWorks, and Integrity. Language bindings are available for C, C++, Java and XML. Its rich support for platforms and language bindings enables software developers to select the most appropriate development language and target OS for use in various parts of their systems. The OpenSplice DDS Power Tools further enhance productivity by a factor of10x, via an Eclipse-based information, application, and deployment, model-driven engineering tools, as well as tools for runtime monitoring and system tuning.



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Who is using OpenSplice DDS?

Transportation

OpenSplice DDS powers some of the most challenging transportation programs, such as next generation European Air Traffic Control System, and several Metro Systems throughout Europe.

Defense & Aerospace

Some of the most advanced, next-generation, defense and aerospace systems are currently powered by OpenSplice DDS. For instance, the TACTICOS Combat Management System (CMS), one of the most successful CMS available on the market, uses OpenSplice DDS to achieve its renown performance, scalability and availability.

Scada

OpenSplice DDS has been applied with great success to wide variety of SCADA applications ranging from industrial control to telemetry.

Data Processing

Several real-time data-processing systems, such as radar-processors, medical imaging systems, and wind tunnel simulation environments, use OpenSplice DDS to efficiently distribute and share data, as well as computational load.

Technical Specification

Operating Systems

- Linux
- Solaris
- Windows 2000, XP
- INTEGRITY
- VxWorks

Language Support

- C
- C++
- Java
- Real-Time Specification for Java

OMG DDS Compliance

OpenSplice DDS is compliant with the full OMG DDS v1.2 specification, including the Data Centric Publish/Subscribe(DCPD) and the Data Local Reconstruction Layer (DLRL) profiles.

About PrismTech

Founded in 1992 with offices in the USA and Europe, PrismTech is a privately held software products company. PrismTech serves international Fortune 500 customers in the telecommunications, data communications, defense and aerospace, transportation and financial sectors.

PrismTech is an acknowledged leader in middleware and software productivity tools, with solutions ranging from embedded real-time systems to wide-scale integration, supporting applications from operations support systems through to software-defined radio.

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More information on OpenSplice DDS is available at:

http://www.prismtech.com/opensplice-dds/

For an evaluation version, training, or consulting, contact:

sales@prismtech.com