OpenSpliceDDS Configurator

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ZETTASCALE TECHNOLOGIES Les Algorithmes 91190, Saint Aubin France

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Innovation shapes the vision.

Hard work brings it to life.

Determination turns it into success."

— ZettaScale Technology

About ZettaScale

ZettaScale's mission is to bring to every connected human and machine the unconstrained freedom to communicate, compute and store — anywhere, at any scale, efficiently and securely. We strive for excellence as engineers and humans -- we firmly believe that we can't separate "the engineer" from "the human". As such we embrace and promote the Seven Knightly Virtues of Courage, Justice, Mercy, Generosity, Faith, Nobility and Hope.

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OpenSpliceDDS is part of the ZettaScale DDS offering - it is a fully featured DDS implementation targeted for enterprise platforms and devices. It is fully interoperable with Cyclone DDS, Vortex Link and Vortex Insight products. The OpenSpliceDDS product offering is made of the Core offering and a set of commercially available add-ons and extra features. The OpenSpliceDDS Core is a full implementation of the Object Management Group (OMG) Data Distribution Service for Real-time Systems (henceforth DDS) rev1.4 standard (DCPS profiles) and the OMG-DDSI-RTPS v2.3 interoperable wire-protocol.

Overview

OpenSpliceDDS obtains its runtime configuration from a deployment descriptor. This file describes the environment in which the Data Distribution Service (DDS) applications will operate, including network settings, security requirements, and operating-system-specific parameters.

By separating these deployment settings from the application logic, OpenSpliceDDS protects the application code from environment-specific details: *write the application once and deploy it anywhere.*

The configuration file also lets you size OpenSpliceDDS's internal resources according to the expected data load. This improves the overall system's elasticity and resilience, helping it cope with unexpected conditions such as failures, resource shortages, or sudden surges in data traffic.

In addition, you can enable only the middleware components and services required by the target system, thereby conserving valuable system resources. For example, you can select the OpenSpliceDDS architectural mode—single-process or federated shared-memory—specify which services should run alongside the DDS infrastructure, such as networking, durability, and monitoring services, and define how each service should behave.

Rather than requiring users to edit the deployment descriptor manually—a process that can be tedious and error-prone—the Configurator presents the Domain and its associated services through a structured, navigable interface. Built-in documentation and descriptor file validation help prevent invalid or inconsistent configurations from reaching a running system.

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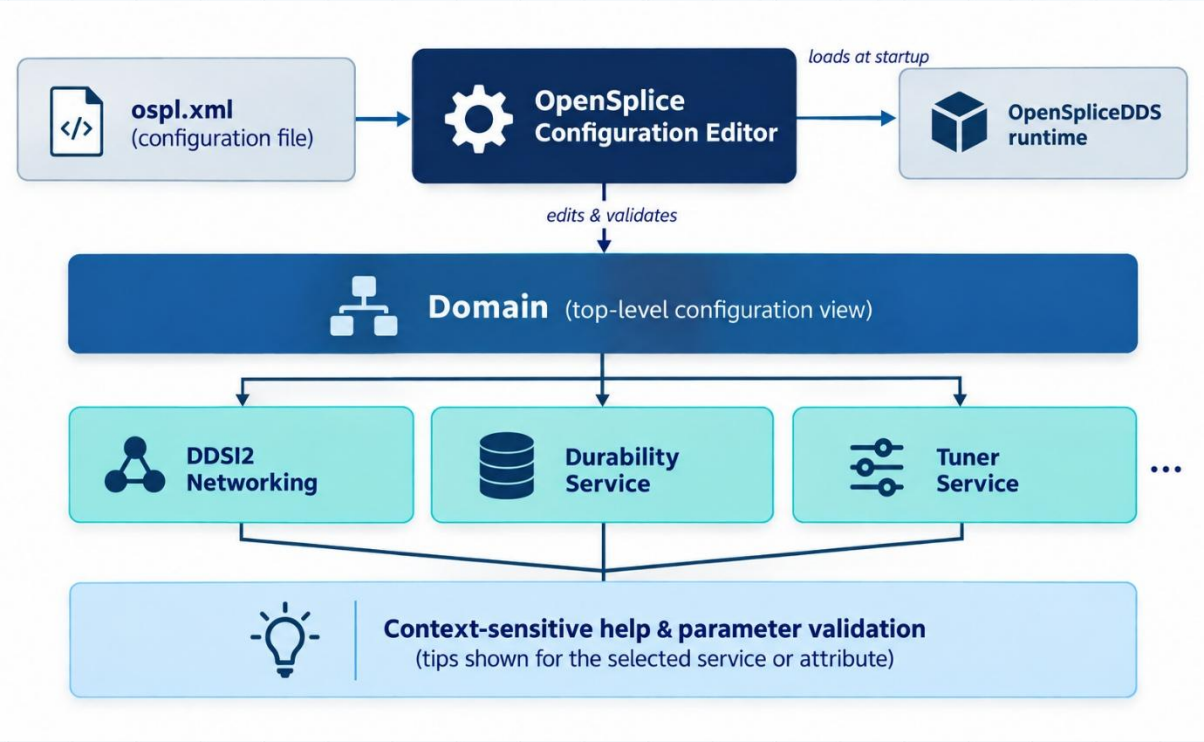

Key Features

The OpenSpliceDDS Configuration Editor provides:

- A 100% Java reference tool for configuring OpenSpliceDDS, distributed with the OpenSpliceDDS core distribution at no additional cost and requiring no separate download or license.
- A rich online guide describing every OpenSpliceDDS configuration option, together with context-sensitive help and parameter validation as each service or attribute is selected.
- The Domain as the top-level view of the current configuration, with each currently enabled service shown as its own tab and full recognition of every pluggable OpenSpliceDDS service - including DDSI2 Networking, the Durability Service, the Tuner Service, the Agent, the DBMS Connect Service, the RnR Service and the Secure Networking Service.
- An information panel that displays relevant tips and explanations for whichever service or attribute is currently selected.
- The ability to add services and other configuration attributes to the Domain directly from the editor, by right-clicking the Domain and stepping through the available menus.
- A full parameter reference available at any time via Help -> Help Contents.

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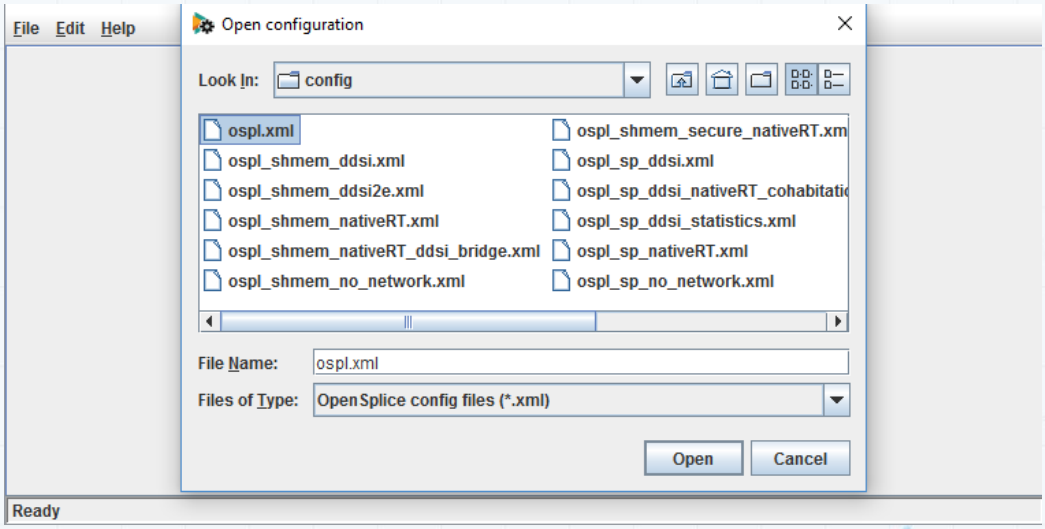
Using the Configuration Editor

Loading a Configuration

The default directory for OpenSpliceDDS configuration files is %OSPL_HOME%/etc/config, and the active file is the one referenced by the OSPL_URI environment variable. If the current installation is located in an administrator-protected directory, the Configuration Editor will be unable to save modifications - in that case, consider moving the configuration file to a location the current user can write to, or running the editor with elevated permissions.

OpenSpliceDDS ships with a full set of ready-to-use example configurations, selectable from the Configuration Editor's Open dialog. These cover both federated (shared-memory) and single-process deployment models, with variants for standard DDSI networking, the enhanced DDSI2E/nativeRT networking stack, secure networking, DDSI/nativeRT cohabitation, isolated no-network operation, and networking with diagnostic statistics enabled - so a representative starting point is available for most deployment scenarios without building a configuration from scratch.

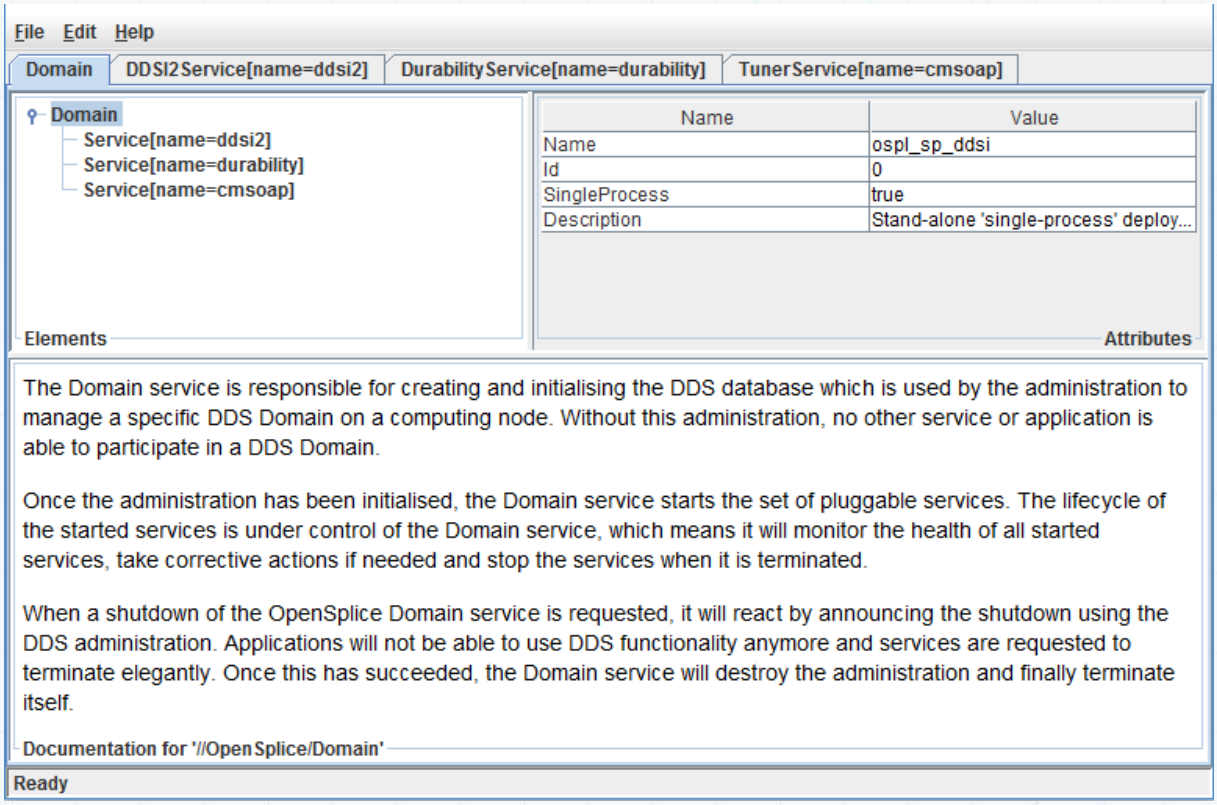


The Configuration Editor's Open dialog, listing the example configuration files distributed with OpenSpliceDDS.

The Editor View

Once a configuration is loaded, the Domain is shown as the top-level view, with all currently enabled OpenSpliceDDS services presented as tabs alongside it - in the example below, DDSI2 Networking, the Durability Service and the Tuner Service are all enabled. The Elements panel on the left shows the configuration as a tree, while the Attributes panel on the right lists the name and current value of every attribute on the selected element - for example a service's Name, Id, SingleProcess flag and Description. The documentation panel

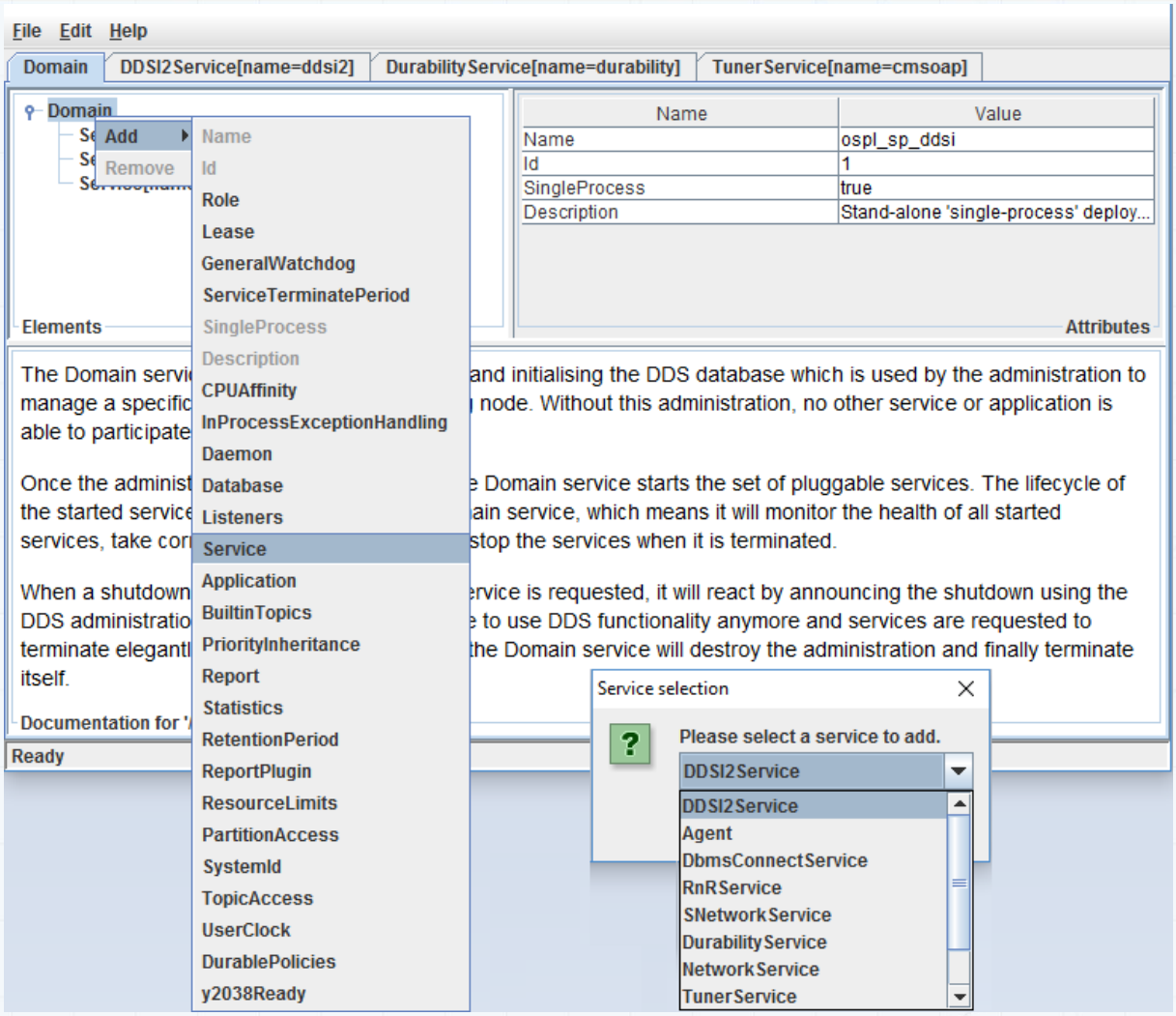
at the bottom of the window displays reference text for whichever element is currently selected, so the purpose and valid values of a parameter are visible without leaving the editor.



The Editor view: the Domain's Elements tree, the Attributes panel for the selected service, and its documentation.

Adding a Service or Attribute

Services and other configuration attributes can be added to the Domain by right-clicking it and moving through the available menus. The Add menu lists every attribute the selected element can take - including Role, Lease, GeneralWatchdog, CPUAffinity, Database, Listeners, Application, BuiltinTopics, Report, Statistics, ResourceLimits, PartitionAccess, DurablePolicies and Service, among others - and greys out any option that has already been set or does not apply. Choosing Service opens a Service selection dialog listing the pluggable services available to add to the Domain, such as DDSI2Service, the Agent, DbmsConnectService, RnRService, SNetworkService, DurabilityService, NetworkService and TunerService. If it is ever unclear what a particular option controls, selecting Help -> Help Contents displays reference information covering all possible configuration parameters.



Adding a service to the Domain: the Add menu of configurable attributes, and the Service selection dialog.

Benefits

- Generate your configuration file descriptor once and deploy it everywhere
- Fewer configuration errors: built-in parameter validation catches invalid or inconsistent settings before they reach a running OpenSpliceDDS system
- Faster configuration: context-sensitive help puts an explanation of each parameter directly in the editor, reducing the need to cross-reference the full Deployment Guide
- A representative starting point for every deployment model: ready-to-use example configurations cover single-process and federated deployments, with and without networking, security and diagnostics
- No additional installation or licensing: the Configuration Editor is distributed with every OpenSpliceDDS core distribution

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Availability

- Works with OpenSpliceDDS V6 and 7.x
- Requires a Java Runtime Environment (JRE)
- Distributed with the OpenSpliceDDS core distribution - no separate download required
- Platforms: any Java-enabled platform supported by OpenSpliceDDS Core

Support/Maintenance

ZettaScale provides world class support, delivering a timely, reliable service to ensure every customer's business success. We offer a wide range of Support and Maintenance Programs for OpenSpliceDDS which can be tailored to customer's best fit requirements. The OpenSpliceDDS Configuration Editor is included with the OpenSpliceDDS core distribution and is covered under the same support programs as OpenSpliceDDS Core.

References and For More Information

For further information regarding OpenSpliceDDS, please e-mail: contact@zettascale.tech or visit: www.zettascale.tech

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