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# **all-docs Documentation**

*Release 1.0*

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eProsima is focused on developing middleware and tools for high performance distributed systems and its products are customer driven. Over the years, eProsima has excelled in several areas of expertise: low latency, high throughput, small footprint, low bandwidth consumption, optimum protocol, low CPU use, etc., working under various scenarios, from high-performance systems with high speed reliable links, to small devices connected over unreliable radio links.

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*eProsima Fast DDS* is a high performance publish subscribe framework to share data in distributed systems using a decoupled model based on Publishers, Subscribers, and Data Topics.

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## **EPROSIMA SAFE DDS**

eProxima Safe DDS is a functionally safe, highly reliable, and efficient C++ implementation of the DDS protocol, designed for critical applications in industries such as automotive, avionics, and medical devices, ensuring compliance with the most stringent functional safety standards like ISO 26262 ASIL D.

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## EPROSIMA MICRO XRCE-DDS

*eProxima Micro XRCE-DDS* implements DDS-XRCE protocol specified in the DDS for *eXtremely Resource Constrained Environments* proposal submitted to the Object Management Group (OMG) consortium.

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## EPROSIMA FAST DDS MONITOR

*eProxima Fast DDS Monitor* is a graphical desktop application aimed at monitoring DDS environments deployed using the [eProxima Fast DDS](#) library. Thus, the user can monitor in real time the status of publication/subscription communications between DDS entities. They can also choose from a wide variety of communication parameters to be measured (latency, throughput, packet loss, etc.), as well as record and compute in real time statistical measurements on these parameters (mean, variance, standard deviation, etc.).

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## **EPROSIMA DDS ROUTER**

*eProxima DDS Router* is an application based on [eProxima Fast DDS](#) that allows to connect DDS networks that belong to different LANs. It works as a bridge between two or more DDS isolated configurations, and transfer all the data from one to the other. This capability could be used to create a bridge between an internal LAN and external WAN communication, to allow DDS communication via internet.

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## EPROSIMA DDS RECORD & REPLAY

*eProxima DDS Record & Replay* is an end-user software application that efficiently saves DDS data published into a DDS environment in a MCAP format database. Thus, the exact playback of the recorded network events is possible as the data is linked to the timestamp at which the original data was published. This tool is easily configurable and installed with a default setup, so that DDS topics, data types and entities are automatically discovered without the need to specify the types of data recorded.

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## EPROSIMA FAST DDS SPY

*eProxima Fast DDS Spy* is a CLI interactive tool that allows to introspect a DDS network in human readable format. It is possible to query the network about the DomainParticipants connected, their endpoints (DataWriters and DataReaders) and the topics they communicate in. It is also possible to see the user data sent through network topics in a schematic format in run time.

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## EPROSIMA SHAPES DEMO

*eProxima Shapes Demo* is an *eProxima Fast DDS* application that Publishes and Subscribes to shapes of different colors and sizes moving on a board. Each Shape conforms its own topic: Square, Triangle or Circle. A single instance of the Shapes Demo can publish on or subscribe to several topics at a time.

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## EPROSIMA FAST CDR

*eProxima FastCDR* is a C++ library that provides two serialization mechanisms. One is the standard CDR serialization mechanism, while the other is a faster implementation that modifies the standard.

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## **PLOTJUGGLER EPROSIMA EDITION**

*PlotJuggler eProxima Edition* is a plugin for PlotJuggler application to visualize DDS data by subscribing to selected topics in a DDS network. It uses Fast DDS Dynamic Types to introspect the data types and generate time series for every value in the topic. It also supports several features to interact with data series and layouts.

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## EPROSIMA DDS SUITE

eProsima DDS Suite is a Docker image distributed by eProsima to provide a convenient demonstration for several eProsima products. This image includes: [eProsima Fast DDS](#), [eProsima Shapes Demo](#), [eProsima Fast DDS Monitor](#), [eProsima DDS Router](#), [eProsima Fast DDS QoS Profiles Manager](#) and [eProsima Micro XRCE-DDS](#).

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## EPROSIMA FAST DDS QOS PROFILES MANAGER

*eProxima Fast DDS QoS Profiles Manager* is a tool suite for the generation of [eProxima Fast DDS](#) configuration files. The suite provides both a Graphical User Interface (GUI) and a Command Line Interface (CLI).

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## EPROSIMA FAST DDS STATISTICS BACKEND

*eProxima Fast DDS Statistics Backend* is a C++ library to collect data from the [eProxima Fast DDS Statistics](#) module, and generate statistical information that applications can query.

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## EPROSIMA DISCOVERY SERVER

*eProxima Discovery Server* is an *eProxima Fast DDS* discovery mechanism. *eProxima Fast DDS* allows a centralized, non-standard, client-server discovery mechanism that:

- extends *eProxima Fast DDS* use to non-unicast network transports like TCP, and
  - speeds up the discovery-stage in a large number of participants scenarios.
-



## **EPROSIMA INTEGRATION SERVICE**

*eProxima Integration Service* is a library based on *eProxima Fast DDS* for creating parameterized communication bridges between different systems, services, and protocols. It is also able to perform transformations over the messages such as customized routing and mapping.

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## **EPROSIMA RPC OVER DDS**

*eProxima RPC over DDS* is a high performance Remote Procedure Call (RPC) framework. It combines a software stack with a code generation engine to build services that work efficiently in several platforms and programming languages.

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## EPROSIMA NON-INTRUSIVE DDS RECORDER

*eProsima Non-Intrusive DDS Recorder* is a tool to record all the DDS traffic in the network, using a non-intrusive mechanism allowing the user to test, analyze or log the DDS distributed systems without adding any new DDS participant or service, ensuring the recording of the real behavior and timing.



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### 16.1 eProsima Fast DDS

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