

Monitoring (eProsimas)

SUBJECT TO CHANGE

For eProsimas Fast-DDS, an official monitoring software can be installed to check for participants in the network or to observe network statistics.

Setup

Installing the Monitor

The monitor can be installed from the eProsimas FastDDS Download site: <https://www.eprosima.com/index.php/component/ars/repository/eprosima-fast-dds-monitor/eprosima-fast-dds-monitor-1-0-0>

It can also be built from Git sources: <https://github.com/eProsimas/Fast-DDS-monitor>

Installation information can be found in <https://fast-dds-monitor.readthedocs.io/en/latest/index.html> for Linux and Windows.

Setting Up the Lab Software

The monitor becomes (most) useful when the eProsimas statistics module is enabled. To do so, head to the place where the Fast-DDS repository can be found (should be in `cpm_lib/thirdparty/Fast-DDS`) and change the `CMakeLists.txt`: Set `FASTDDS_STATISTICS` to `ON`. Then (re)install Fast-DDS. Note: The `install.sh` script currently overwrites that setting again, so you have to install manually without it, or the Statistics Module won't be used!

After (re)building Fast-DDS, use `build_all.bash` in the software repository to rebuild the lab software as well.

Usage

Monitor

If the lab is set up properly, all you need to do is start the monitor and either:

- Enter the currently used DomainID, if no discovery server is used for eProsimas
- Register the Discovery Server (File `Initialize Discovery Server Monitor`). You need to know the GUID (can be found in `cpm_lib/src/DiscoveryServer.cpp`) the IP (127.0.0.1 or the IP of the main PC, depending on where you run your software and the discovery server) and the Port (can be found e.g. in `gdb_run.bash` for the LCC in `/lab_control_center`).

If you set these monitoring instances up properly, you should see all current DDS traffic in that part of the network, and you should be able to see statistics as well if you followed the rest of the guide properly. This allows you to inspect e.g. latency!

Lab Setup

Even though the statistics module is now installed, it also needs to be activated. Different methods are mentioned in <https://fast-dds.docs.eprosima.com/en/v2.3.2/fastdds/statistics/statistics.html>.

For our purpose, it is enough to set:

```
export FASTDDS_STATISTICS="HISTORY_LATENCY_TOPIC;ACKNACK_COUNT_TOPIC;DISCOVERY_TOPIC;PHYSICAL_DATA_TOPIC"
```

Be aware that this must be set everywhere where you need to see statistics, e.g. when you start a (simulated) vehicle or the IPS! You might need to modify some `start.bash` files by adding this line, or even dig into `Deploy.cpp` in the `LabControlCenter` to add it.