ROS World 2020 Recap

Lightning Talk from Lightning Talks

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rosbag2

- recording bag file can be split based on file size and duration.

- compression module zstd for file or message

- QoS automatically adjusted on each topic. also can be overridden.

Security Launch

- Before


```
ubuntu@ros2-dev ~ $ mkdir /tmp/keystore
ubuntu@ros2-dev ~ $ ros2 security create_keystore /tmp/keystore
ubuntu@ros2-dev ~ $ ros2 security create_enclave /tmp/keystore /minimal_publisher
ubuntu@ros2-dev ~ $ export ROS_SECURITY_KEYSTORE=/tmp/keystore
ubuntu@ros2-dev ~ $ export ROS_SECURITY_ENABLE=true
ubuntu@ros2-dev ~ $ export ROS_SECURITY_STRATEGY=Enforce
ubuntu@ros2-dev ~ $ ros2 run examples_rclcpp_minimal_publisher publisher_lambda --ros-args --enclave

                    Create a keystore
                    Initialize the keystore
                    Create an enclave for your node
                    Export Environment Variables
                    Run
```

Security Launch

- After (Upcoming)

```
ubuntu@ros2-dev ~ $ ros2 launch example.launch.py --secure
[INFO] [launch]: All log files can be found below /home/ubuntu/.ros/log/2020-09-30-18-42-49-135776-ros2-dev-2634
[INFO] [launch]: Default logging verbosity is set to INFO
[INFO] [publisher_lambda-1]: process started with pid [2637]
[INFO] [subscriber_lambda-2]: process started with pid [2639]
[publisher_lambda-1] [INFO] [1601491369.238011039] [rcl]: Found security directory: /tmp/tmp7851b3pj/enclaves/minimal_publisher
[subscriber_lambda-2] [INFO] [1601491369.238011509] [rcl]: Found security directory: /tmp/tmp7851b3pj/enclaves/minimal_subscriber
```

system statistics

- system_metrics_collector

- NodeOption to enable statistics on subscription.

- publishes /statistics type with `statistics_msgs::msg::MetricsMessage`

- CPU & Memory usage

- Linux Only

- External parameter configuration in consideration

Boost Pool Allocation

- it is all about `std default allocator` vs `boost::fast_pool_allocator`

- can be used for intra-process communication.

make_shared_from_pool<>();

2 Hz

100 Hz
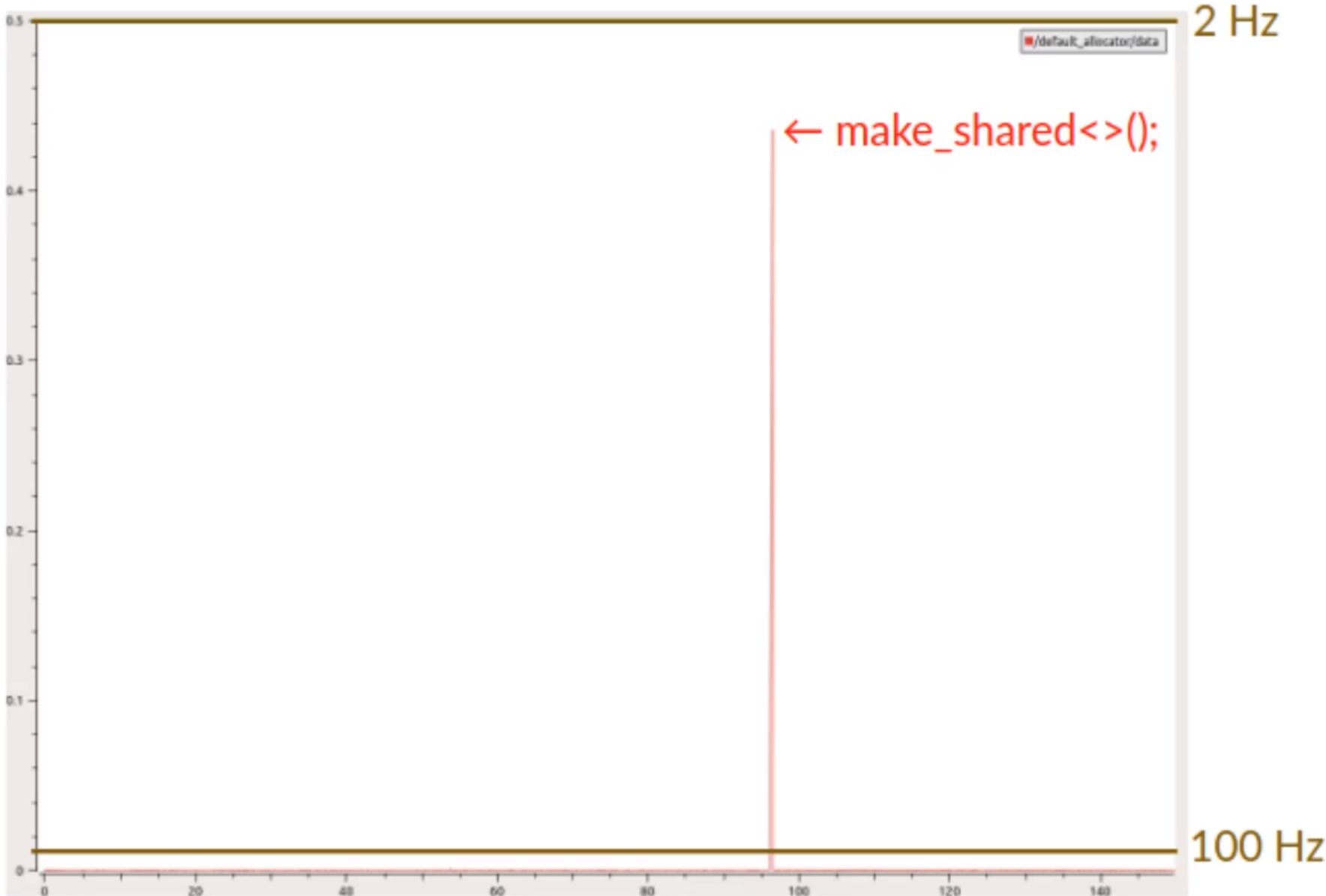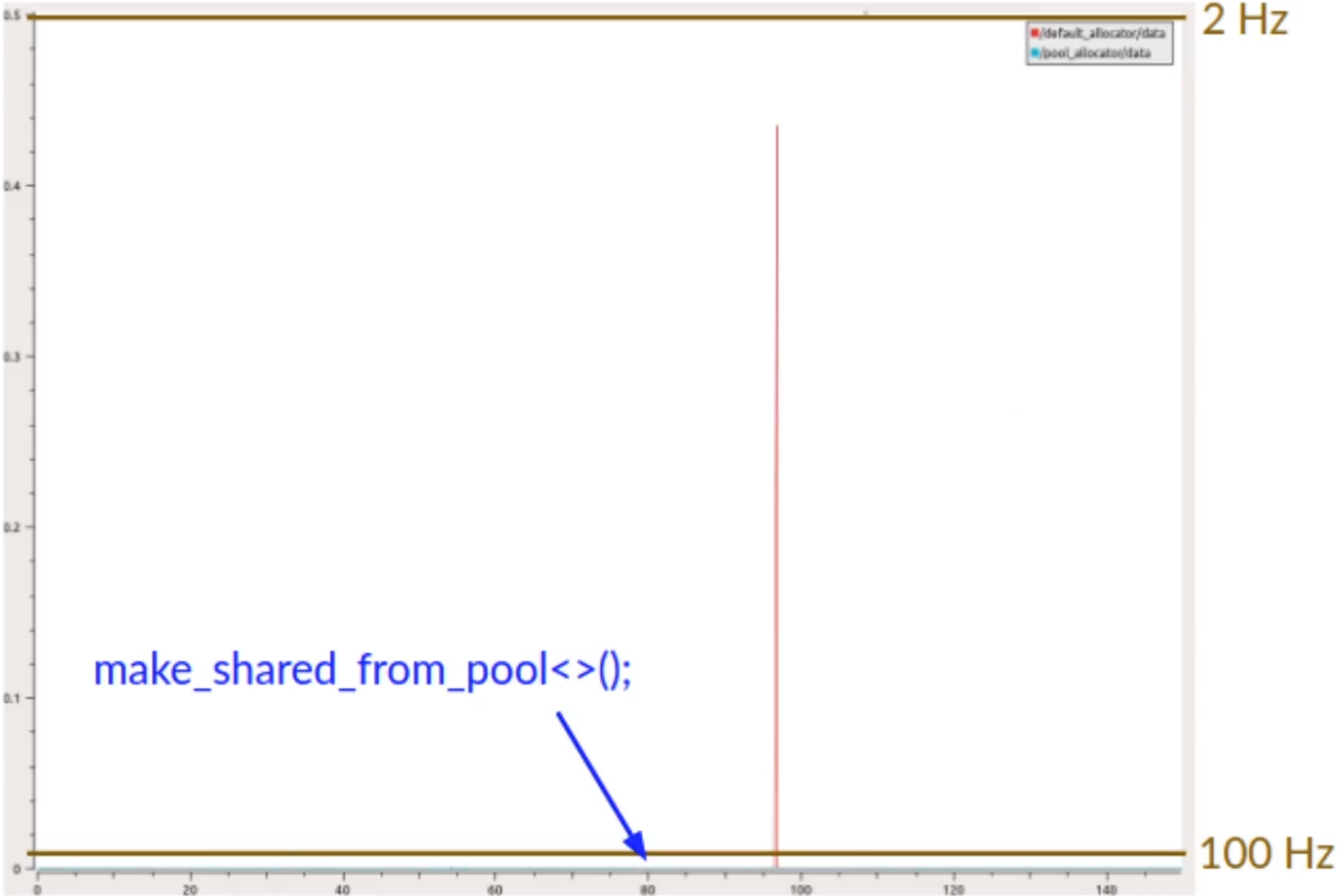
ROS + Docker

- Repeatable / Reproducible

- Platform / Distro Dependencies

- Contribution Friendly

- Official Library Images: library/ros:<tag>

- Docker Images:osrf/ros2:<tag>

Object Computing DDS

- DDS can connect between different subnets.

- DDS can connect to the cloud.

- DDS can connect over the Internet.

- DDS can communicate on different network.

Freedom Robotics