

ROS2 with FastDDS

Use Fast-DDS environment variables to enable shared memory (works with older versions)

```
colcon build --symlink-install --cmake-args -DCMAKE_BUILD_TYPE=Debug
-DCMAKE_CXX_FLAGS="-O0 -g"
```

Older Fast-DDS versions allow you to **enable shared memory transport** without XML, using environment variables:

```
export FASTRTPS_DEFAULT_PROFILES_FILE=""
export FASTRTPS_DEFAULT_PROFILES_FILE_DISABLED=true
export FASTRTPS_SHM_TRANSPORT=true
```

Create an **empty XML file** and point Fast-DDS to it:

```
mkdir -p ~/Desktop/OS/ros2_ws/src/ros2_shm_demo/config
echo '<?xml version="1.0"?><dds></dds>' >
~/Desktop/OS/ros2_ws/src/ros2_shm_demo/config/empty_profiles.xml
```

Command:

Publisher:

```
source ~/Desktop/OS/ros2_ws/install/setup.bash
export RMW_IMPLEMENTATION=rmw_fastrtps_cpp
```

```
export
FASTRTPS_DEFAULT_PROFILES_FILE=$HOME/Desktop/OS/ros2_ws/src/ros2_shm_demo/c
onfig/empty_profiles.xml
```

```
export FASTRTPS_SHM_TRANSPORT=true
ros2 run ros2_shm_demo shm_publisher
```

Subscriber:

```
source ~/Desktop/OS/ros2_ws/install/setup.bash
```

```
export RMW_IMPLEMENTATION=rmw_fastrtps_cpp
```

```
export
```

```
FASTRTPS_DEFAULT_PROFILES_FILE=$HOME/Desktop/OS/ros2_ws/src/ros2_shm_demo/config/empty_profiles.xml
```

```
export FASTRTPS_SHM_TRANSPORT=true
```

```
ros2 run ros2_shm_demo shm_subscriber
```

```
nm
```

```
/home/hanzhengwang/Desktop/OS/ros2_ws/build/ros2_shm_demo/shm_publisher | grep publish_message
```

```
000000000000d3d0 W _ZN12ShmPublisher15publish_messageEv
```

```
00000000000062040 u
```

```
_ZZN12ShmPublisher15publish_messageEvE26__rcutils_logging_location
```