

Docker - ROS

This is the docker container for ROS(noetic). This note will contain docker commands to run GUI and CMD based commands for my thesis container.

Container name: thesisbot

Container type: ROS Noetic

Volume name: ros_thesis

Workspace name: event_workspace

docker image

Pull the ROS noetic image.

```
docker pull osrf/ros:noetic-desktop-full
```

docker volume

Make a volume for your container to keep persisting data

```
docker volume create ros_thesis
```

docker container

Run the container as follows:

```
docker run -it --name thesisbot --net=host --privileged \  
-e DISPLAY=$DISPLAY -v /tmp/.X11-unix:/tmp/.X11-unix \  
-v ros_thesis:/root/event_workspace \  
osrf/ros:noetic-desktop-full
```

Here's what this command does:

- -it: Runs the container interactively.
- --name thesisbot: Gives the container a name for easy reference.
- --net=host: Shares the host network with the container.
- --privileged: Provides additional privileges to the container.
- -e DISPLAY=\$DISPLAY -v /tmp/.X11-unix:/tmp/.X11-unix: Allows GUI applications within the container to display on the host.
- -v ros_thesis:/root/event_workspace: Mounts the volume to persist your ROS workspace.

copying bag files

You can copy the bag and other files using the following command:

```
docker cp /path/to/your/bag/files thesisbot:/root/event_workspace
```

sourcing ros workspace

```
source /opt/ros/noetic/setup.bash
```

create docker image

If you want to save your data and container for future use, consider making an image as follows:

```
docker commit thesisbot thesis_ros_image
```

No stop container exit

To exit a container without stopping it, use “Ctrl + P” followed by “Ctrl + Q”.

To reattach this container, use:

```
docker attach thesisbot
```

To start the container, we can use:

```
docker start -i thesisbot
```

GUI apps not running

I met an error when running rviz as follows:

```
No protocol specified
qt.qpa.xcb: could not connect to display :0
qt.qpa.plugin: Could not load the Qt platform plugin "xcb" in "" even though it was found.
This application failed to start because no Qt platform plugin could be initialized. Reinstalling the application may fix this problem.
```

Available platform plugins are: eglfs, linuxfb, minimal, minimalegl, offscreen, vnc, xcb.

Aborted (core dumped)

To solve it, I ran:

```
xhost +local:docker
```