Ros_bridge

```
arnav@kapoor:~/Desktop$ nano Dockerfile.bridge
arnav@kapoor:~/Desktop$ docker build -f Dockerfile.bridge -t ros1_bridge_manual .
[+] Building 19.9s (6/15)                                       docker:default
 => [internal] load build definition from Dockerfile.bridge                0.0s
 => => transferring dockerfile: 1.85kB                                     0.0s
 => [internal] load metadata for docker.io/library/ubuntu:22.04            0.0s
 => [internal] load .dockerignore                                          0.0s
 => => transferring context: 2B                                            0.0s
 => CACHED [ 1/12] FROM docker.io/library/ubuntu:22.04                     0.0s
 => [ 2/12] RUN apt update && apt install -y locales &&       locale-gen e  16.1s
 => ERROR [ 3/12] RUN apt update && apt install -y          curl gnupg2 lsb-re  3.8s
------
 > [ 3/12] RUN apt update && apt install -y    curl gnupg2 lsb-release build-essential
          cmake git wget python3-pip python3-colcon-common-extensions    python3-vcstool
software-properties-common:
0.177
0.177 WARNING: apt does not have a stable CLI interface. Use with caution in scripts.
0.177
0.736 Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
0.736 Hit:2 http://archive.ubuntu.com/ubuntu jammy InRelease
0.997 Hit:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease
1.212 Hit:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease
1.340 Reading package lists...
2.287 Building dependency tree...
2.468 Reading state information...
2.484 All packages are up to date.
2.493
2.493 WARNING: apt does not have a stable CLI interface. Use with caution in scripts.
2.493
2.565 Reading package lists...
3.519 Building dependency tree...
3.699 Reading state information...
3.719 E: Unable to locate package python3-colcon-common-extensions
3.719 E: Unable to locate package python3-vcstool
------
Dockerfile.bridge:13
--------------------
  12 |    # Install tools
  13 | >>> RUN apt update && apt install -y \
  14 | >>>         curl gnupg2 lsb-release build-essential \
  15 | >>>         cmake git wget python3-pip python3-colcon-common-extensions \
  16 | >>>         python3-vcstool software-properties-common
  17 |
--------------------
```

```
ERROR: failed to solve: process "/bin/sh -c apt update && apt install -y      curl gnupg2 lsb-
release build-essential           cmake git wget python3-pip python3-colcon-common-
extensions      python3-vcstool software-properties-common" did not complete successfully:
exit code: 100
arnav@kapoor:~/Desktop$ nano Dockerfile.bridge
arnav@kapoor:~/Desktop$ docker build -f Dockerfile.bridge -t ros1_bridge_manual .
[+] Building 1.9s (16/16) FINISHED                                  docker:default
 => [internal] load build definition from Dockerfile.bridge                  0.0s
 => => transferring dockerfile: 1.50kB                               0.0s
 => [internal] load metadata for docker.io/library/ubuntu:20.04      1.8s
 => [internal] load .dockerignore                                    0.0s
 => => transferring context: 2B                                      0.0s
 => [ 1/12] FROM docker.io/library/ubuntu:20.04@sha256:8feb4d8ca5354def3d  0.0s
 => CACHED [ 2/12] RUN apt update && apt install -y curl gnupg2 lsb-relea  0.0s
 => CACHED [ 3/12] RUN echo "deb http://packages.ros.org/ros/ubuntu focal  0.0s
 => CACHED [ 4/12] RUN echo "deb http://packages.ros.org/ros2/ubuntu foca  0.0s
 => CACHED [ 5/12] RUN apt update && apt install -y      ros-noetic-deskto  0.0s
 => CACHED [ 6/12] RUN pip3 install rosdep                           0.0s
 => CACHED [ 7/12] RUN echo "source /opt/ros/noetic/setup.bash" >> ~/.bas  0.0s
 => CACHED [ 8/12] RUN mkdir -p /ros2_bridge_ws/src                  0.0s
 => CACHED [ 9/12] WORKDIR /ros2_bridge_ws                           0.0s
 => CACHED [10/12] RUN git clone https://github.com/ros2/ros1_bridge.git   0.0s
 => CACHED [11/12] RUN rosdep init && rosdep update                  0.0s
 => CACHED [12/12] RUN source /opt/ros/noetic/setup.bash &&    rosdep in  0.0s
 => exporting to image                                               0.0s
 => => exporting layers                                              0.0s
 => => writing image sha256:e7995a22d3c53d5846fd323395f93202577fb79a82afd  0.0s
 => => naming to docker.io/library/ros1_bridge_manual                0.0s
arnav@kapoor:~/Desktop$
```

Ros2

```
arnav@kapoor:~/Desktop$ docker run -it --rm ros:humble
root@2b98ed834f5d:/# source /opt/ros/humble/setup.bash
ros2 --help
usage: ros2 [-h] [--use-python-default-buffering]
            Call `ros2 <command> -h` for more detailed usage. ...

ros2 is an extensible command-line tool for ROS 2.

options:
  -h, --help                  show this help message and exit
  --use-python-default-buffering
                              Do not force line buffering in stdout and instead use
                              the python default buffering, which might be affected
                              by PYTHONUNBUFFERED/-u and depends on whatever stdout
                              is interactive or not
```

```
Commands:
  action          Various action related sub-commands
  bag             Various rosbag related sub-commands
  component  Various component related sub-commands
  daemon          Various daemon related sub-commands
  doctor          Check ROS setup and other potential issues
  interface  Show information about ROS interfaces
  launch          Run a launch file
  lifecycle  Various lifecycle related sub-commands
  multicast  Various multicast related sub-commands
  node            Various node related sub-commands
  param           Various param related sub-commands
  pkg             Various package related sub-commands
  run     Run a package specific executable
  security   Various security related sub-commands
  service         Various service related sub-commands
  topic  Various topic related sub-commands
  wtf     Use `wtf` as alias to `doctor`

  Call `ros2 <command> -h` for more detailed usage.
root@2b98ed834f5d:/#
```

Ros1

```
arnav@kapoor:~/Desktop$ docker run -it --rm ros:noetic
root@223a8fc626ba:/# roscore
... logging to /root/.ros/log/3ee037e2-3ab3-11f0-a30e-6ec439d4593d/roslaunch-223a8fc626ba-27.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://223a8fc626ba:45501/
ros_comm version 1.17.0


SUMMARY
========

PARAMETERS
 * /rosdistro: noetic
 * /rosversion: 1.17.0

NODES

auto-starting new master
process[master]: started with pid [35]
ROS_MASTER_URI=http://223a8fc626ba:11311/
```

setting /run_id to 3ee037e2-3ab3-11f0-a30e-6ec439d4593d
process[rosout-1]: started with pid [45]
started core service [/rosout]

Docker

```
sudo apt update
sudo apt install docker.io -y
sudo systemctl enable --now docker

sudo usermod -aG docker $USER
newgrp docker

# For ROS 2 Humble (recommended LTS)
docker pull ros:humble

docker run -it --rm \
  --name ros2_container \
  --network host \
  --env DISPLAY=$DISPLAY \
  -v /tmp/.X11-unix:/tmp/.X11-unix \
  ros:humble bash

docker run -it --rm \
  --name ros1_container \
  --network host \
  --env DISPLAY=$DISPLAY \
  -v /tmp/.X11-unix:/tmp/.X11-unix \
  ros:noetic bash
```