

## PRACTICE CHAPTER 1

### 1. INSTALL ROS2

```

Ubuntu-2204 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal
Jan 4 22:29
ikhwan@Ubuntu-2204: ~$
Get:19 http://id.archive.ubuntu.com/ubuntu jammy-updates/restricted i386 Packages [32.8 kB]
Get:20 http://id.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [203 kB]
Get:21 http://id.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1,020 kB]
Get:22 http://id.archive.ubuntu.com/ubuntu jammy-updates/universe i386 Packages [576 kB]
Get:23 http://id.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [226 kB]
Get:24 http://id.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [41.6 kB]
Get:25 http://id.archive.ubuntu.com/ubuntu jammy-backports/main i386 Packages [33.9 kB]
Get:26 http://id.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [41.7 kB]
Get:27 http://id.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [24.3 kB]
Get:28 http://id.archive.ubuntu.com/ubuntu jammy-backports/universe i386 Packages [11.4 kB]
Get:29 http://id.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Fetched 12.0 MB in 23s (527 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
438 packages can be upgraded. Run 'apt list --upgradable' to see them.
ikhwan@Ubuntu-2204: ~$ ros2
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.
ikhwan@Ubuntu-2204: ~$

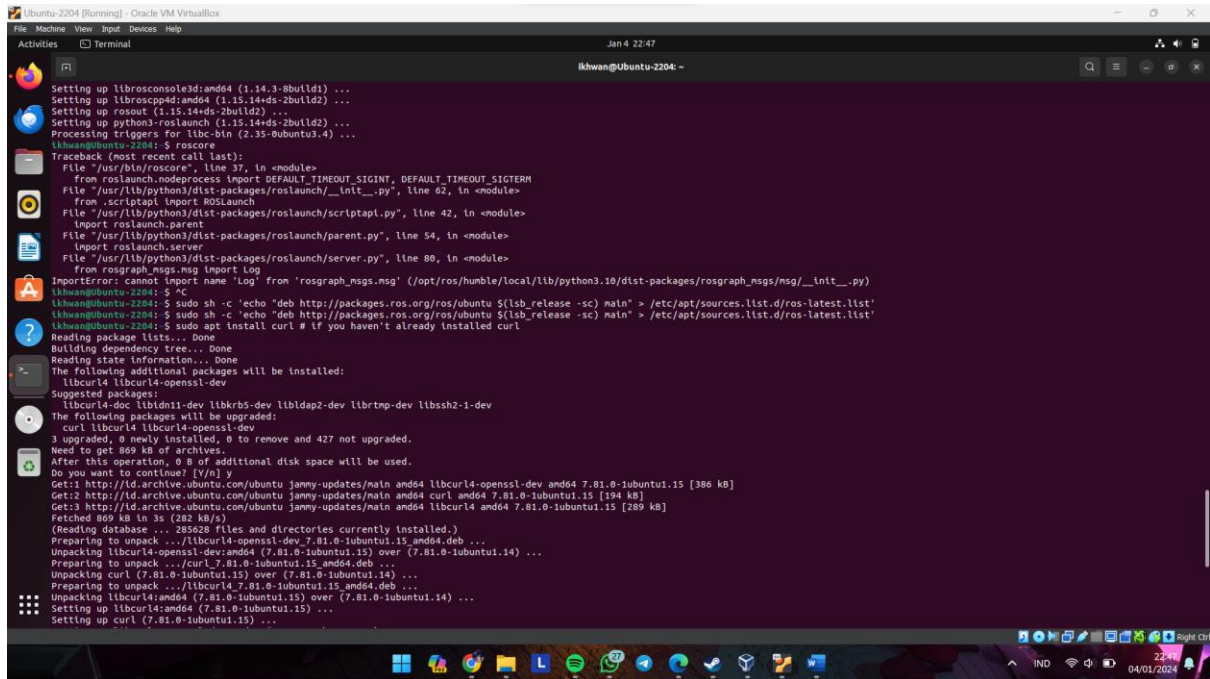
```

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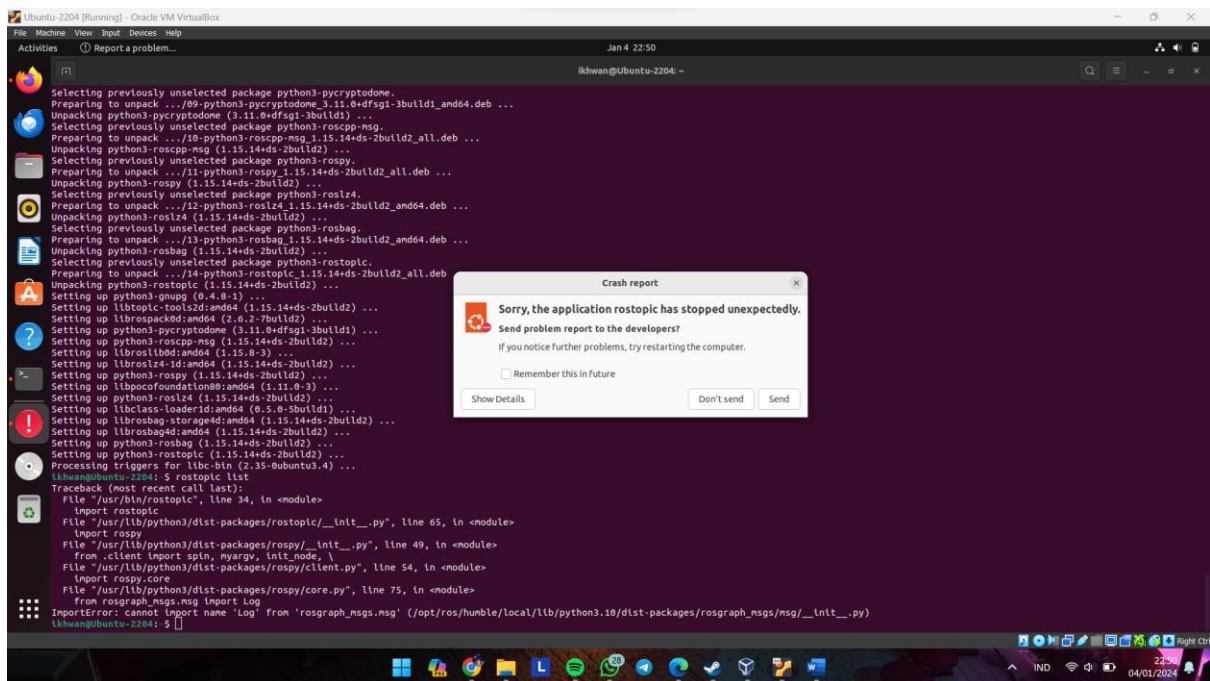
Ubuntu-2204 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal
Jan 4 22:45
ikhwan@Ubuntu-2204: ~$
Call 'ros2 <command> -h' for more detailed usage.
ikhwan@Ubuntu-2204: ~$ roscore
Command 'roscore' not found, but can be installed with:
sudo apt install python3-roslaunch
ikhwan@Ubuntu-2204: ~$ sudo apt install python3-roslaunch
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapr1 libaprutil1 libb64-0d libbcp-common0d liblog4cxx12 libroscpp-serialization0d libroscpp4d librostimeid libxmlrpcpp3d python3-catkin python3-defusedxml python3-gensg
  python3-genpy python3-rosclean python3-rosgraph-msgs python3-roslib python3-rosmaster python3-rospan python3-rospkg python3-std-msgs roscout
Recommended packages:
  python3-crypto
The following NEW packages will be installed:
  libapr1 libaprutil1 libb64-0d libbcp-common0d liblog4cxx12 libroscpp-serialization0d libroscpp4d librostimeid libxmlrpcpp3d python3-catkin python3-defusedxml python3-gensg
  python3-genpy python3-rosclean python3-rosgraph python3-rosgraph-msgs python3-roslaunch python3-roslib python3-rosmaster python3-rospan python3-rospkg python3-std-msgs roscout
0 upgraded, 24 newly installed, 0 to remove and 438 not upgraded.
Need to get 1,681 kB of archives.
After this operation, 6,769 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://packages.ros.org/ros/ubuntu jammy/main amd64 python3-rospkg all 1.5.0-100 [2,536 B]
Get:2 http://id.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapr1 amd64 1.7.0-0ubuntu0.22.04.1 [108 kB]
Get:3 http://id.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1 amd64 1.6.1-5ubuntu0.22.04.2 [92.8 kB]
Get:4 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 libb64-0d amd64 1.2-5 [9,324 B]
Get:5 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 liblog4cxx12 amd64 0.12.1-4 [382 kB]
Get:6 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 librostimeid amd64 0.7.2-0build1 [29.5 kB]
Get:7 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 libroscpp-serialization0d amd64 1.14.3-0build1 [121 kB]
Get:8 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 libbcp-common0d amd64 0.7.2-0build1 [15.8 kB]
Get:9 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 libroscpp-serialization0d amd64 0.7.2-0build1 [5,922 B]
Get:10 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 libxmlrpcpp3d amd64 1.15.14ds-2build2 [51.4 kB]
Get:11 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 libroscpp4d amd64 1.15.14ds-2build2 [491 kB]
Get:12 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-catkin all 0.8.10-7 [22.8 kB]
Get:13 http://id.archive.ubuntu.com/ubuntu jammy/main amd64 python3-defusedxml all 0.7.1-1 [43.2 kB]
Get:14 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-gensg all 0.5.16-5 [23.7 kB]
Get:15 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-genpy all 0.6.10-1 [31.4 kB]
Get:16 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-rosclean all 1.15.0-3 [9,916 B]
Get:17 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-rosgraph all 1.15.14ds-2build2 [30.9 kB]
Get:18 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-std-msgs all 0.5.15-2 [10.7 kB]
Get:19 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-rosgraph-msgs all 1.11.3-2 [7,272 B]
Get:20 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 roscout amd64 1.15.14ds-2build2 [42.1 kB]
Get:21 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-roslib all 1.15.0-3 [26.0 kB]
Get:22 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-rosmaster all 1.15.14ds-2build2 [25.5 kB]
Get:23 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-rospan all 1.15.14ds-2build2 [12.7 kB]
Get:24 http://id.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-roslaunch all 1.15.14ds-2build2 [75.5 kB]
Fetched 1,681 kB in 31s (54.0 kB/s)
Selecting previously unselected package libapr1:amd64.

```

### 2. Roscore

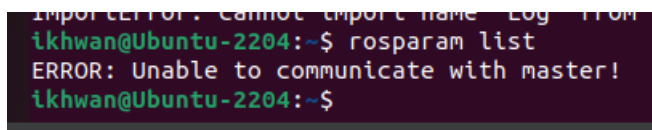


### 3. Rostopic list



Saat saya input perintah itu, muncul peringatan seperti ini

### 4. Rosparam list



Saat saya input perintah itu, muncul seperti ini

### 5. Rosservice list

```
ikhwan@Ubuntu-2204:~$ rosservice list
Traceback (most recent call last):
  File "/usr/bin/rosservice", line 34, in <module>
    import rosservice
  File "/usr/lib/python3/dist-packages/rosservice/__init__.py", line 60, in <module>
    import rospy
  File "/usr/lib/python3/dist-packages/rospy/__init__.py", line 49, in <module>
    from .client import spin, myargw, init_node, \
  File "/usr/lib/python3/dist-packages/rospy/client.py", line 54, in <module>
    import rospy.core
  File "/usr/lib/python3/dist-packages/rospy/core.py", line 75, in <module>
    from rosgraph_msgs.msg import Log
ImportError: cannot import name 'Log' from 'rosgraph_msgs.msg' (/opt/ros/humble/local/lib/python3.10/dist-packages/rosgraph_msgs/msg/__init__.py)
ikhwan@Ubuntu-2204:~$
```

Saat saya input perintah itu, muncul seperti ini