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## harman@harman-VirtualBox:~\$ roscore

... logging to /home/harman/.ros/log/c5415960-faed-11eb-8248-080027ed3098/roslaunch-harman-VirtualBox-32126.log

Checking log directory for disk usage. This may take awhile.

Press Ctrl-C to interrupt

Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://harman-VirtualBox:36535/

ros\_comm version 1.12.17

### SUMMARY

=====

### PARAMETERS

\* /rostdistro: **kinetic**

\* /rosversion: **1.12.17**

### NODES

auto-starting new master

process[**master**]: started with pid [32139]

ROS\_MASTER\_URI=http://harman-VirtualBox:11311/

setting /run\_id to c5415960-faed-11eb-8248-080027ed3098

process[**rosout-1**]: started with pid [32152]

started core service [/rosout]

## ROSPACK

### \$ rospack help

harman@harman-VirtualBox:~\$ rospack help

USAGE: rospack <command> [options] [package]

Allowed commands:

help

cflags-only-I [--deps-only] [package]

cflags-only-other [--deps-only] [package]

**depends** [package] (alias: deps)  
 depends-indent [package] (alias: deps-indent)  
 depends-manifests [package] (alias: deps-manifests)  
 depends-msgsrv [package] (alias: deps-msgsrv)  
 depends-on [package]  
 depends-on1 [package]  
 depends-why --target=<target> [package] (alias: deps-why)  
 depends1 [package] (alias: deps1)  
 export [--deps-only] --lang=<lang> --attrib=<attrib> [package]  
 find [package]  
 langs  
 libs-only-L [--deps-only] [package]  
 libs-only-l [--deps-only] [package]  
 libs-only-other [--deps-only] [package]  
 list  
 list-duplicates  
 list-names  
 plugins --attrib=<attrib> [--top=<toppkg>] [package]  
 profile [--length=<length>] [--zombie-only]  
 rosdep [package] (alias: rosdeps)  
 rosdep0 [package] (alias: rosdeps0)  
 vcs [package]  
 vcs0 [package]  
 Extra options:  
 -q Quiets error reports.

If [package] is omitted, the current working directory is used (if it contains a package.xml or manifest.xml).

## \$ rospack list

(List of dozens or hundreds)

```
turtlesim /opt/ros/kinetic/share/turtlesim
```

## \$ rospack list-names | grep turtle

```
harman@harman-VirtualBox:~$ rospack list-names | grep turtle
turtle_actionlib
turtle_tf
turtle_tf2
turtlebot_actions
turtlebot_bringup
```

turtlebot\_calibration  
turtlebot\_capabilities  
turtlebot\_dashboard  
turtlebot\_description  
turtlebot\_follower  
turtlebot\_gazebo  
turtlebot\_interactive\_markers  
turtlebot\_msgs  
turtlebot\_navigation  
turtlebot\_rapps  
turtlebot\_rviz\_launchers  
turtlebot\_stage  
turtlebot\_std  
turtlebot\_teleop  
turtlesim

## **harman@harman-VirtualBox:~\$ rospack depends turtlesim**

cpp\_common  
rostime  
roscpp\_traits  
roscpp\_serialization  
catkin  
genmsg  
genpy  
message\_runtime  
std\_msgs  
geometry\_msgs  
gencpp  
geneus  
gennodejs  
genlisp  
message\_generation  
roscpp  
ros\_environment  
rospack  
roslib  
std\_srvs

## **ROSNODE**

**harman@harman-VirtualBox:~\$ rosnode list --help**

Usage: rosnode list

Options:

- h, --help show this help message and exit
- u list XML-RPC URIs
- a, --all list all information

**harman@harman-VirtualBox:~\$ rosnode list -a**

http://harman-VirtualBox:41367/ /rosout

## **ROSRUN**

**harman@harman-VirtualBox:~\$ rosruntime --help**

Usage: rosruntime [--prefix cmd] [--debug] PACKAGE EXECUTABLE [ARGS]

rosruntime will locate PACKAGE and try to find

an executable named EXECUTABLE in the PACKAGE tree.

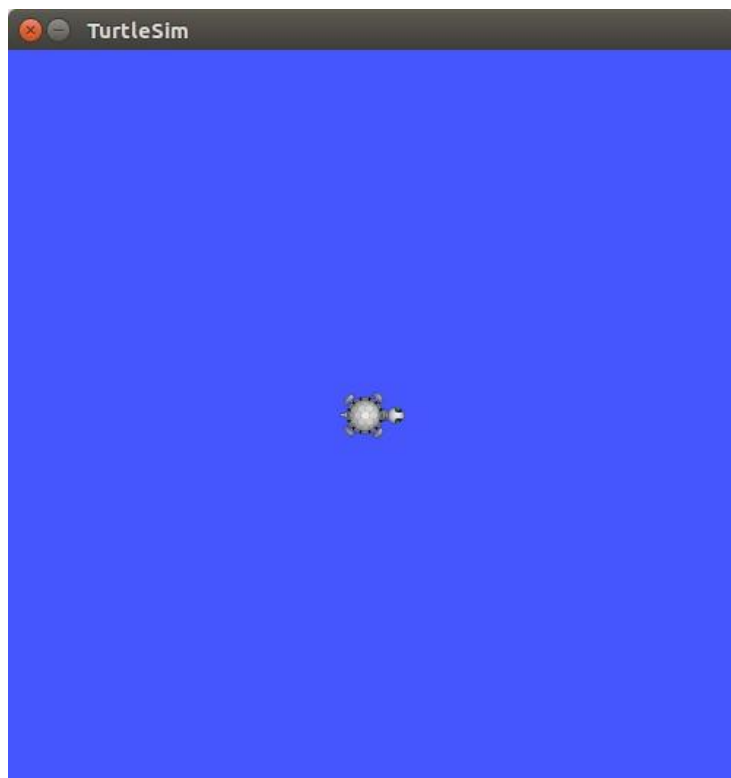
If it finds it, it will run it with ARGS.

## roslaunch turtlesim turtlesim\_node

```
harman@harman-VirtualBox:~$ roslaunch turtlesim turtlesim_node
```

```
[ INFO] [1628719717.265956836]: Starting turtlesim with node name /turtlesim
```

```
[ INFO] [1628719717.269869339]: Spawning turtle [turtle1] at x=[5.544445], y=[5.544445],  
theta=[0.000000]
```



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```
harman@harman-VirtualBox:~$ roslaunch turtlesim turtlesim_node
```

```
/rosout  
/turtlesim
```

```
harman@harman-VirtualBox:~$ roslaunch turtlesim turtlesim_node
```

```
-----  
Node [/turtlesim]
```

## Publications:

- \* /rosout [rosgraph\_msgs/Log]
- \* /turtle1/color\_sensor [turtlesim/Color]
- \* /turtle1/pose [turtlesim/Pose]

## Subscriptions:

- \* /turtle1/cmd\_vel [unknown type]

## Services:

- \* /clear
- \* /kill
- \* /reset
- \* /spawn
- \* /turtle1/set\_pen
- \* /turtle1/teleport\_absolute
- \* /turtle1/teleport\_relative
- \* /turtlesim/get\_loggers
- \* /turtlesim/set\_logger\_level

contacting node http://harman-VirtualBox:34045/ ...

Pid: 2303

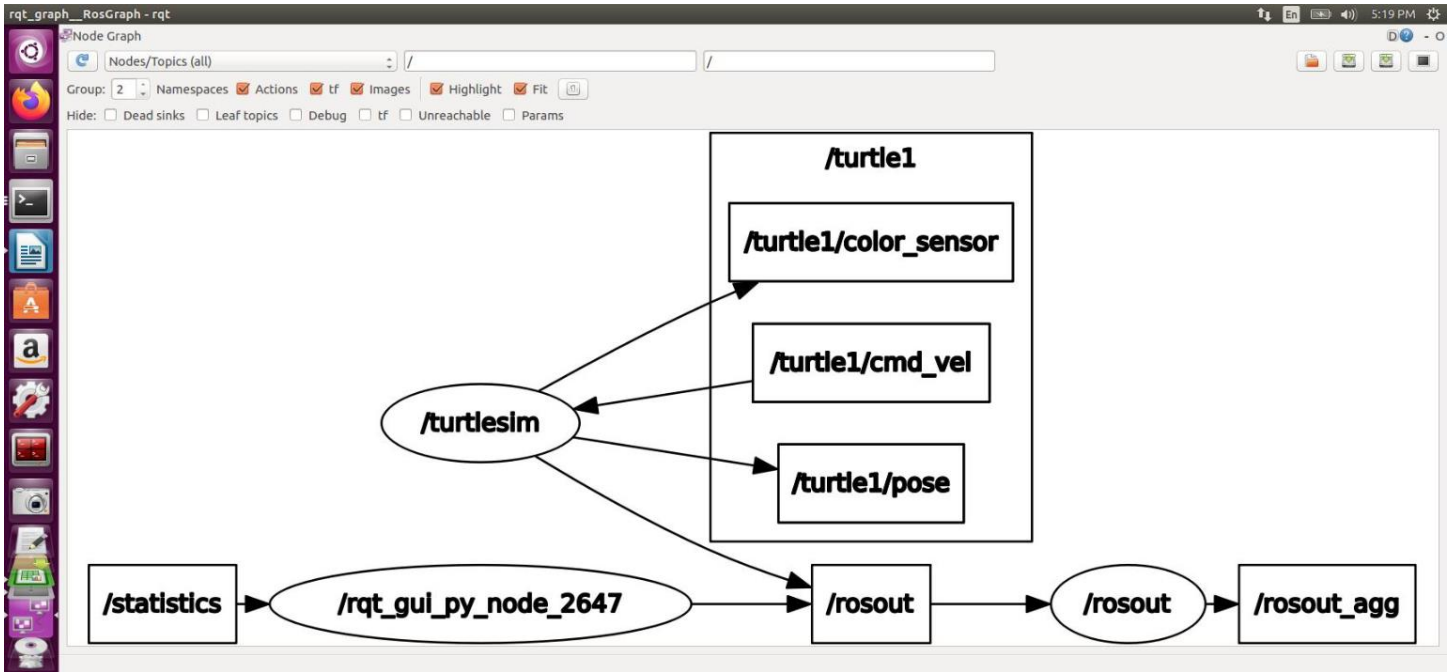
Connections:

- \* topic: /rosout
  - \* to: /rosout
  - \* direction: outbound
  - \* transport: TCPROS

harman@harman-VirtualBox:~\$

## RQT\_GRAPH

\$ rqt\_graph



NOTE SETUP: Nodes and Topics

## TURTLESIM TOPICS AND MESSAGES

### harman@harman-VirtualBox:~\$ rostopic --help

rostopic is a command-line tool for printing information about ROS Topics.

Commands:

- rostopic bw display bandwidth used by topic
- rostopic delay display delay of topic from timestamp in header
- rostopic echo print messages to screen
- rostopic find find topics by type
- rostopic hz display publishing rate of topic
- rostopic info print information about active topic
- rostopic list list active topics
- rostopic pub publish data to topic
- rostopic type print topic or field type

Type rostopic <command> -h for more detailed usage, e.g. 'rostopic echo -h'



## harman@harman-VirtualBox:~\$ rostopic list

/rosout

/rosout\_agg

/turtle1/cmd\_vel

/turtle1/color\_sensor

/turtle1/pose

## harman@harman-VirtualBox:~\$ rostopic list -v

### Pubs/Subs Type and Messge

Published topics:

\* /turtle1/color\_sensor [turtlesim/Color] 1 publisher

\* /rosout [rosgraph\_msgs/Log] 1 publisher

\* /rosout\_agg [rosgraph\_msgs/Log] 1 publisher

\* /turtle1/pose [turtlesim/Pose] 1 publisher

Subscribed topics:

\* /turtle1/cmd\_vel [geometry\_msgs/Twist] 1 subscriber

\* /rosout [rosgraph\_msgs/Log] 1 subscriber

## harman@harman-VirtualBox:~\$ rostopic type /turtle1/color\_sensor

turtlesim/Color (NOTE SPELLING)

## harman@harman-VirtualBox:~\$ rosmmsg -h

rosmmsg is a command-line tool for displaying information about ROS Message types.

Commands:

rosmmsg show Show message description

rosmmsg info Alias for rosmmsg show

rosmmsg list List all messages

rosmmsg md5 Display message md5sum

rosmmsg package List messages in a package

rosmmsg packages      List packages that contain messages

Type rosmmsg <command> -h for more detailed usage

**harman@harman-VirtualBox:~\$ rosmmsg list | grep turtlesim**

turtlesim/Color

turtlesim/Pose

(Note that cmd\_vel is not published yet!)

**harman@harman-VirtualBox:~\$ rosmmsg show turtlesim/Color**

uint8 r      (Note 0-255)

uint8 g

uint8 b

**harman@harman-VirtualBox:~\$ rostopic echo /turtle1/color\_sensor -n1**

r: 69

g: 86

b: 255

## **RGB Color Codes Chart**

[https://www.rapidtables.com/web/color/RGB\\_Color.html](https://www.rapidtables.com/web/color/RGB_Color.html)

