

# 05. Rosbag

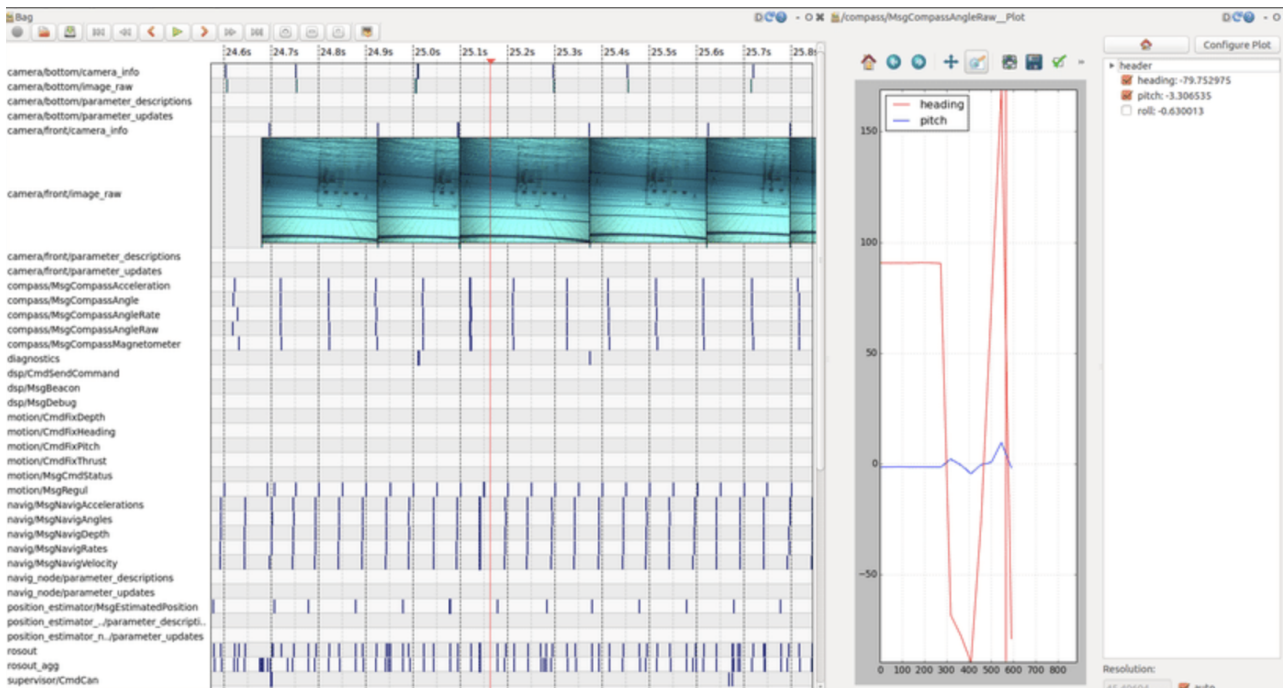
AI ROBOT

Exported on 12/04/2021

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# 1 토픽 상황 재생 - rosbag



## 1.1 실습 환경

```

pw@ros:~$ roslaunch turtlesim turtlesim_node
[ INFO] [1574349144.130710076]: Starting turtlesim with node name /turtlesim
[ INFO] [1574349144.134006250]: Spawning turtle [turtle1] at x=[5.544445], y=[5.544445], theta=[0.000000]

pw@ros:~$ roscore
... logging to /home/pw/.ros/log/d8836f2c-0c6f-11ea-9a2e-001c42cd403/roslaunch-ros-16686.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://ros:39213/
ros_comm version 1.14.3

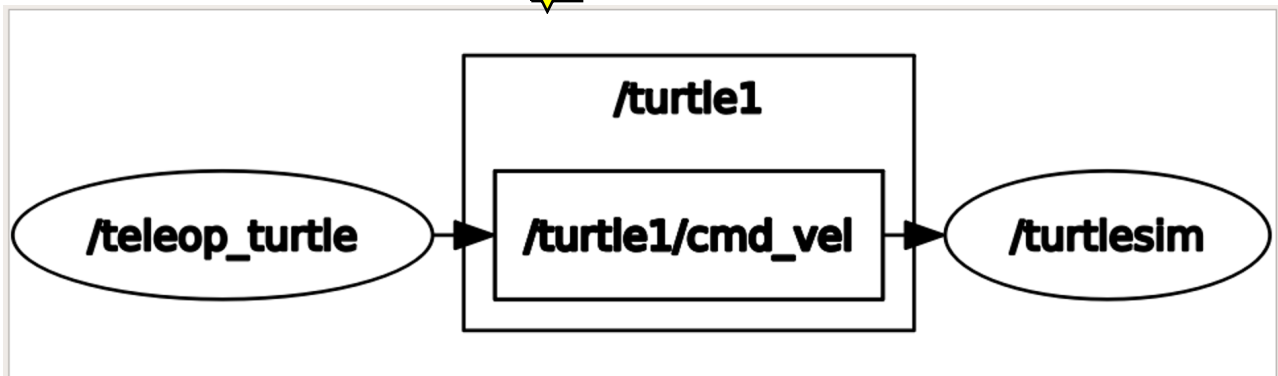
```

## 1.2 turtlesim 패키지의 turtle\_teleop\_key 노드 실행

```

pw@ros:~/catkin_ws/src/hello_world/config$ roslaunch turtlesim
draw_square      mimic      turtlesim node      turtle teleop key
pw@ros:~/catkin_ws/src/hello_world/config$ roslaunch turtlesim turtle_teleop_key
Reading from keyboard
-----
Use arrow keys to move the turtle.

```

1.3 이 상태에서 `rqt_graph`1.4 teleop\_turtle 노드는 `cmd_vel` 토픽을 publish한다

```
pw@ros:~$ rosnode info /teleop_turtle
```

```
-----
Node [/teleop_turtle]
```

```
Publications:
```

- \* /rosout [roscpp\_msgs/Log]
- \* /turtle1/cmd\_vel [geometry\_msgs/Twist]

```
Subscriptions: None
```

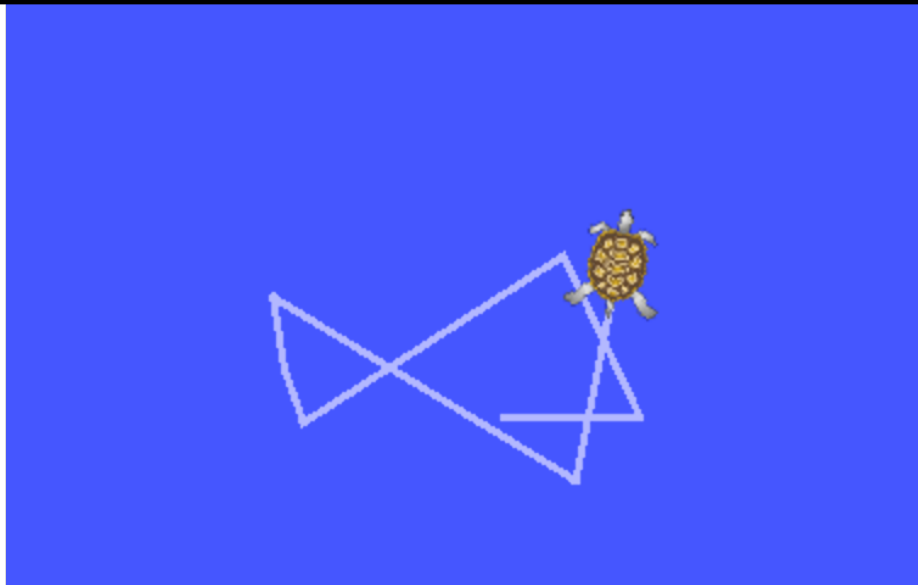
```
Services:
```

- \* /teleop\_turtle/get\_loggers
- \* /teleop\_turtle/set\_logger\_level

1.5 turtle을 움직일때는 teleop 노드가 실행중인 터미널을 선택한 후 종료한다



```
pw@ros:~/catkin_ws/src/hello_world/config$ rosrun turtles
im turtle_teleop_key
Reading from keyboard
-----
Use arrow keys to move the turtle.
```



## 1.6 rosbag?

### rosbag

indigo kinetic lunar **melodic** Show EOL distros: ☐

Documentation Status

**ros\_comm:** [message\\_filters](#) | [ros](#) | [rosbag](#) | [rosconsole](#) | [roscpp](#) | [rosgraph](#) | [rosgraph\\_msgs](#) | [roslaunch](#) | [roslisp](#) | [rosmaster](#) | [rosmmsg](#) | [rosmnode](#) | [rosout](#) | [rosparm](#) | [rospy](#) | [rosservice](#) | [rostest](#) | [rostopic](#) | [roswtf](#) | [std\\_srvs](#) | [topic\\_tools](#) | [xmlrpcpp](#)

## Package Summary

✓ Released — Continuous Integration: 1381 / 1382 ✓ Documented

This is a set of tools for recording from and playing back to ROS topics. It is intended to be high performance and avoids deserialization and reserialization of the messages.

- Maintainer status: maintained
  - Maintainer: Dirk Thomas <dthomas AT osrfoundation DOT org>
  - Author: Tim Field, Jeremy Leibs, James Bowman
  - License: BSD
  - Bug / feature tracker: [https://github.com/ros/ros\\_comm/issues](https://github.com/ros/ros_comm/issues)
  - Source: git [https://github.com/ros/ros\\_comm.git](https://github.com/ros/ros_comm.git) (branch: melodic-devel)
- topic을 저장하고 재생하는 기능 제공

#### Package Links

[Code API](#)

[Tutorials](#)

[Troubleshooting](#)

[FAQ](#)

[Changelog](#)

[Change List](#)

[Reviews](#)

**Dependencies (13)**

**Used by (36)**

**Jenkins jobs (10)**

## 1.7 현재 rostopic 상황

```
pw@ros:~$ rostopic list
/rosout
/rosout_agg
/turtle1/cmd_vel
/turtle1/color_sensor
/turtle1/pose
```

## 1.8 bag 폴더를 hello\_world 패키지에 만들고 해당 폴더로 이동

```

pw@ros:~$ roscd hello_world/
pw@ros:~/catkin_ws/src/hello_world$ ls
CMakeLists.txt  config  package.xml  scripts  src
pw@ros:~/catkin_ws/src/hello_world$ mkdir bag
pw@ros:~/catkin_ws/src/hello_world$ cd bag
pw@ros:~/catkin_ws/src/hello_world/bag$

```

## 1.9 rosbag record -a: 전체 토픽 저장

```

pw@ros:~/catkin_ws/src/hello_world/bag$ rosbag record -a
[ INFO] [1574350979.618334764]: Recording to 2019-11-22-00-42-59.bag.
[ INFO] [1574350979.619028778]: Subscribing to /turtle1/color_sensor
[ INFO] [1574350979.620675871]: Subscribing to /turtle1/cmd_vel
[ INFO] [1574350979.622320967]: Subscribing to /rosout
[ INFO] [1574350979.623879204]: Subscribing to /rosout_agg
[ INFO] [1574350979.625471819]: Subscribing to /turtle1/pose

```

## 1.10 파일이 하나 생성된다

```

^Cpw@ros:~/catkin_ws/src/hello_world/bag$ ls
2019-11-22-00-42-59.bag
pw@ros:~/catkin_ws/src/hello_world/bag$

```

### 1.11 어떤 topic 들이 저장되어 있는지 나타난다

```

pw@ros:~/catkin_ws/src/hello_world/bag$
pw@ros:~/catkin_ws/src/hello_world/bag$ rosbag info 2019-11-22-00-42-59.bag
path:          2019-11-22-00-42-59.bag
version:       2.0
duration:      15.0s
start:         Nov 22 2019 00:42:59.63 (1574350979.63)
end:           Nov 22 2019 00:43:14.60 (1574350994.60)
size:          144.6 KB
messages:      1907
compression:   none [1/1 chunks]
types:         geometry_msgs/Twist [9f195f881246fdfa2798d1d3eebca84a]
               roscpp_msgs/Log     [acffd30cd6b6de30f120938c17c593fb]
               turtlesim/Color      [353891e354491c51aabe32df673fb446]
               turtlesim/Pose       [863b248d5016ca62ea2e895ae5265cf9]
topics:        /rosout              4 msgs      : roscpp_msgs/Log (2 connections)
               /turtle1/cmd_vel     60 msgs      : geometry_msgs/Twist
               /turtle1/color_sensor 921 msgs      : turtlesim/Color
               /turtle1/pose        922 msgs      : turtlesim/Pose

```

### 1.12 다시 reset을 call하고

```

catkin_ws/src/hello_world/bag$
catkin_ws/src/hello_world/bag$ rosservice call /reset
catkin_ws/src/hello_world/bag$

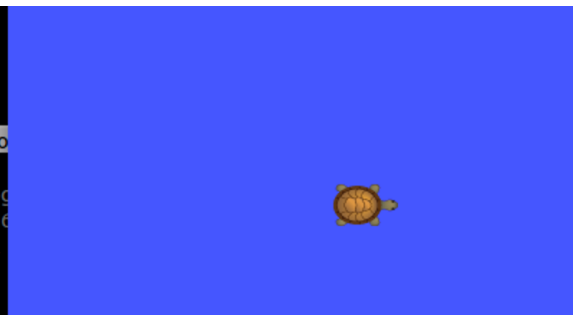
```

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```

node
... logging to /home/pw/.ros/log
001c42dcd403/roslaunch-ros-16680
Checking log directory for disk
le.
Press Ctrl-C to interrupt

```



### 1.13 rosbag play를 이용하면 topic이 재생된다

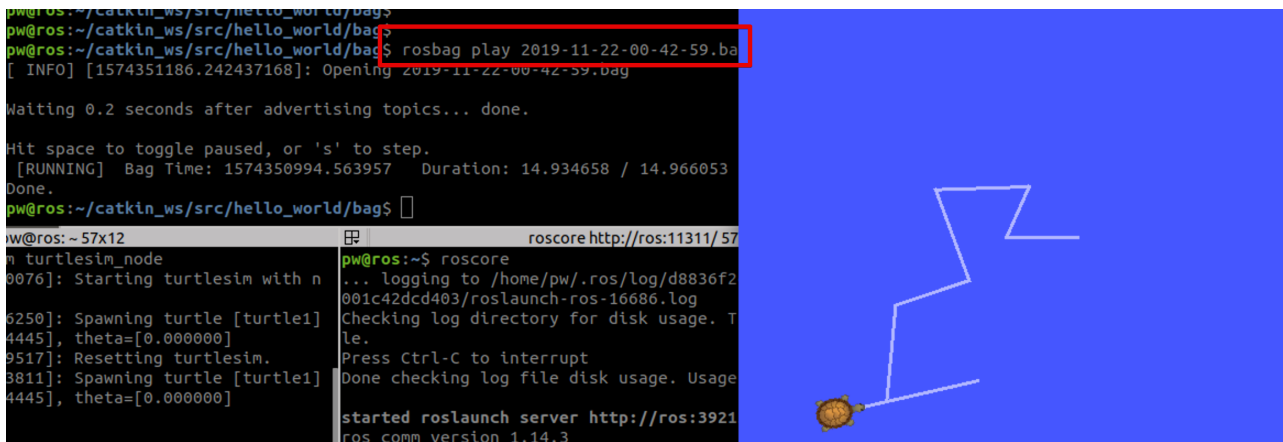
```

world/bag$
world/bag$ rosbag play 2019-11-22-00-42-59.bag

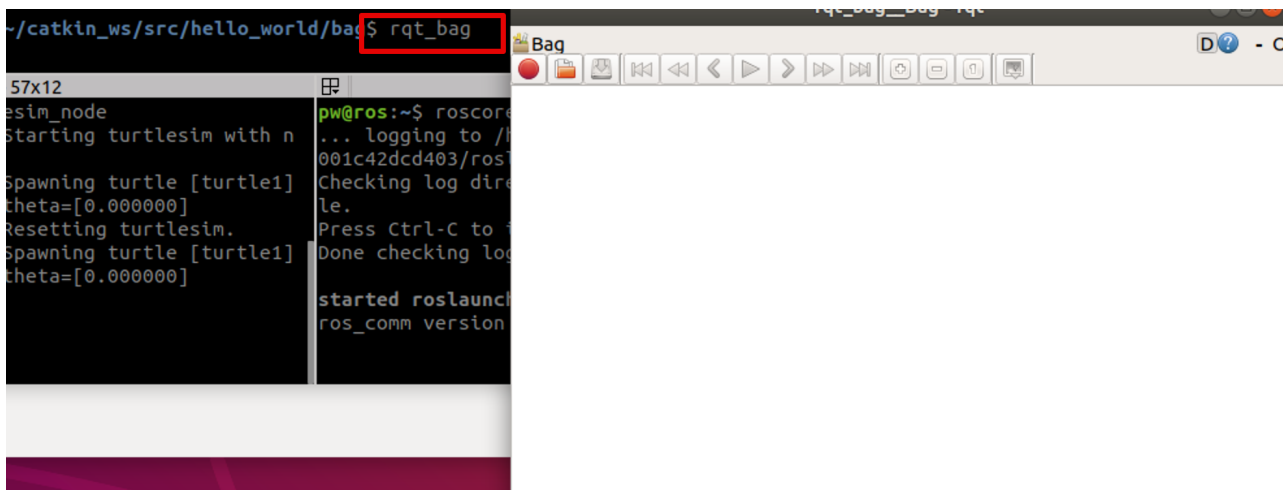
```



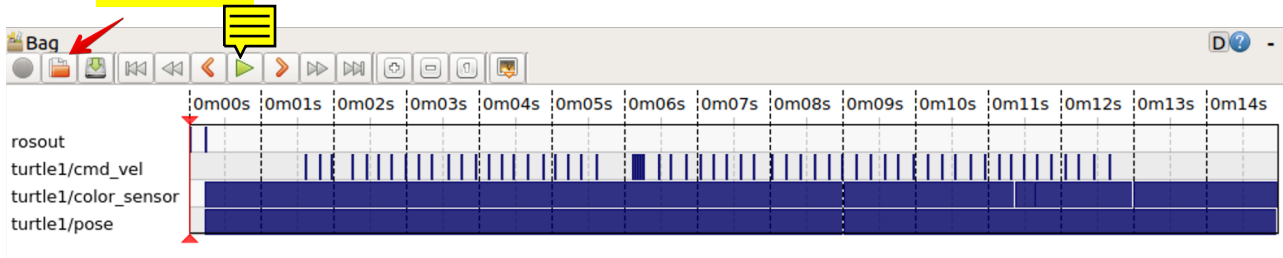
## 1.14 내가 방금 인가 했던 명령을 그대로 수행한다



## 1.15 rqt\_bag



## 1.16 bag 파일을 읽고



## 1.17 퍼블리쉬할 토픽을 지정

