ROS-Documentation

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1 ROS Nodes

Nodes in ROS are elements that would be handling a single purpose like : controlling motors, handling sensor data, computing navigational decisions etc.

1.1 ROS run command

ROS ndoes can be run like :

```
ros2 run [package-name] [node-name]
```

1.2 ROS node list command

All ROS nodes can be veiwed as :

```
ros2 node list
```

1.3 ROS node info command

```
ros node info [node_name]
```

2 Topics

Topic is a bus for nodes to exchange data. A node can publish to / receive from any number of topics.

2.1 Visualize node graphs

```
rqt_graph
```

2.2 Looking at all available ROS topics

```
ros2 topic list
```

2.3 Finding out a Topic's type

```
ros2 topic list -t
```

2.4 Looking at data being sent to the topic

Running this command might not generate any output at first, this is because when running this command it will just look for any data available in the topic, if the publisher has not sent any data then no output will be seen here.

```
ros2 topic echo [topic-name]
```

2.5 Finding out number of publisher / subscriber associated with a topic

```
ros2 topic info [topic-name]
```

2.6 Find out type of data a topic wants

First run :

```
ros2 topic echo [topic-name]
```

The above command outputs type of topic, now take this output and run it in :

```
ros2 interface show [topic-type]
```

This command will show the actual data being expected by the topic such as : vector, list, integer etc.

2.7 Finding frequency of data being published to topic

First find the type of the topic and then run :

```
ros2 topic hz [topic-type]
```