

Basic ROS Commands

(slides adapted from Roi Yehoshua, Bar-Ilan University)

ROS Environment

- ROS relies on the notion of combining spaces using the shell environment
- This makes developing against different versions of ROS or against different sets of packages easier
- After you install ROS you will have `setup.*sh` files in `/opt/ros/<distro>/`, and you could source them like so:

```
$ source /opt/ros/indigo/setup.bash
```

- You will need to run this command on every new shell you open to have access to the ros commands, unless you add this line to your bash startup file (`~/.bashrc`)
 - If you used the pre-installed VM it's already done for you

ROS Basic Commands

- `roscore`
- `roscd`
- `roslaunch`
- `roslaunch`
- `rostopic`

Basic ROS Commands

- **roscore** – a collection of nodes and programs that are pre-requisites of a ROS-based system
- If your ROS system uses communications, it should be run before
- roscore is defined as:
 - master
 - parameter server
 - rosout
- Usage:
 - \$roscore

Navigating through ROS packages

- **roscd**: roscd is part of the rosbash suite. It allows you to change directory (cd) directly to a package or a stack.
- Before using it, the correct environment variables should be set
 - Source correct the .bash file
- Usage:
 - \$ roscd [locationname[/subdir]]

Executing a node within a package

- **roslaunch** – allows you to run an executable in an arbitrary package without having to cd (or roscd) there first
- Usage:
 - `$roslaunch package executable`
- Example
 - Run turtlesim
 - `$roslaunch turtlesim turtlesim_node`

Basic ROS Commands

- **rostopic** – Displays debugging information about ROS nodes, including publications, subscriptions and connections
- **Commands:**

	Command
List active nodes	rostopic list\$
Test connectivity to node	rostopic ping\$
Print information about a node	rostopic info\$
Kill a running node	rostopic kill\$
List nodes running on a particular machine	rostopic machine\$

rostopic

- Gives information about a topic and allows to publish messages on a topic

	Command
List active topics	<code>rostopic list\$</code>
Prints messages of the topic to the screen	<code>rostopic echo /topic\$</code>
Print information about a topic	<code>rostopic info /topic\$</code>
Prints the type of messages the topic publishes	<code>rostopic type /topic\$</code>
Publishes data to a topic	<code>rostopic pub /topic type\$ args</code>