Programming for Robotics - ROS: Course Preparation

In this course, we will work with Ubuntu 16.04 and ROS Kinetic Kame. We highly recommend you to **use a virtual machine and the provided image** that already contains a preinstalled environment with the following software:

- Ubuntu 16.04
- ROS Kinetic Kame
- Eclipse Oxygen
- Catkin Command Line Tools
- Terminator
- Git

Install Virtual Machine

To run the provided image you need the VMware Workstation 14 Pro (Windows, Linux) or VMware Fusion 10 (macOS). This software can be ordered on the ETH Zurich's IT Shop (free for students): https://idesnx.ethz.ch/, search for "VMware Academic Program ETH Stud".

Please follow the given instructions to download and install the software from VMware. We recommend you to have at least 20GB of available disk space on your computer to run the virtual machine.

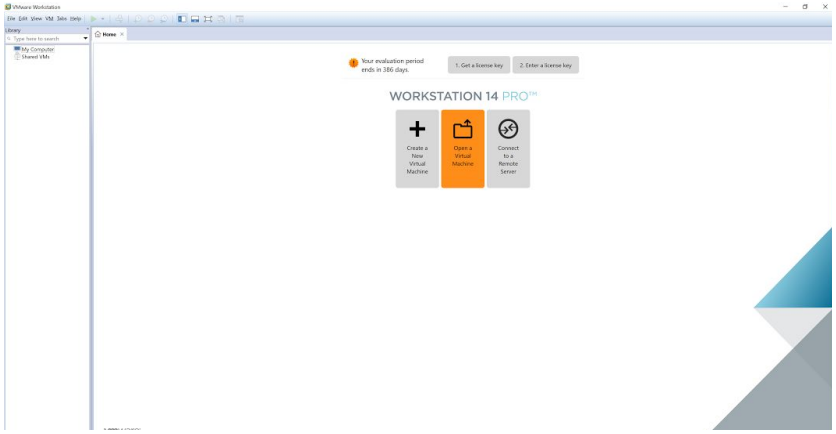
Download Image

Download the zipped folder "Ubuntu_ROS_Course.zip" (~ 5.0 GB) from polybox and extract it. If you extract the zipped folder in an Ubuntu distribution make sure that you installed the p7zip library with:

```
> sudo apt-get install p7zip-full
```

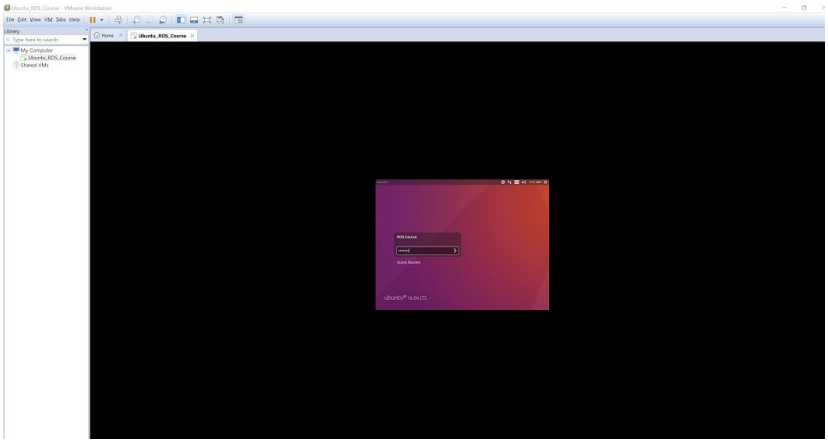
Start Up Virtual Machine

- Open VMware Workstation
- Open file Ubuntu_ROS_Course.vmx in the downloaded folder Ubuntu_ROS_Course



- Start the virtual machine with “Power on this virtual machine” or “Start up this guest operating system”. **Important!** If it is the first time you are using an virtual machine on your laptop, there might be an error message that tells you that “This host supports Intel VT-x, but Intel VT-x is disabled”. The Intel Virtual Technology (Intel VT) has to be enabled in your BIOS (or UEFI). You will have to restart the computer and press either Enter, F1, F10, or DEL to go to BIOS settings (depending on your PC manufacturer). Under Security->System Security you will find the option to enable VT. Some more explanations can be found here.

- To login under Ubuntu use the provided account ROS Course:
  User: student
  Password: student

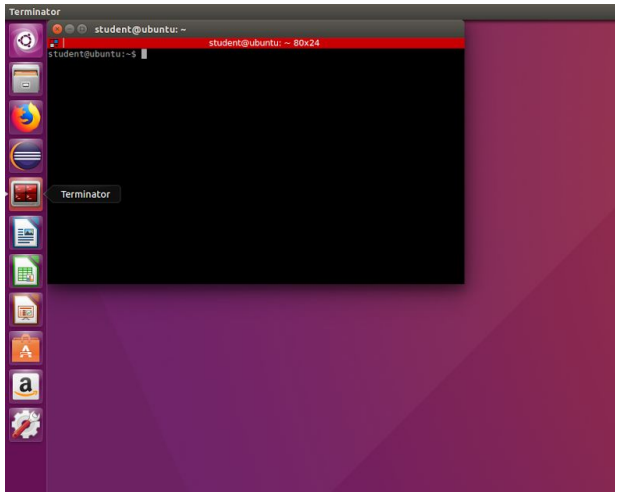


Test Virtual Machine

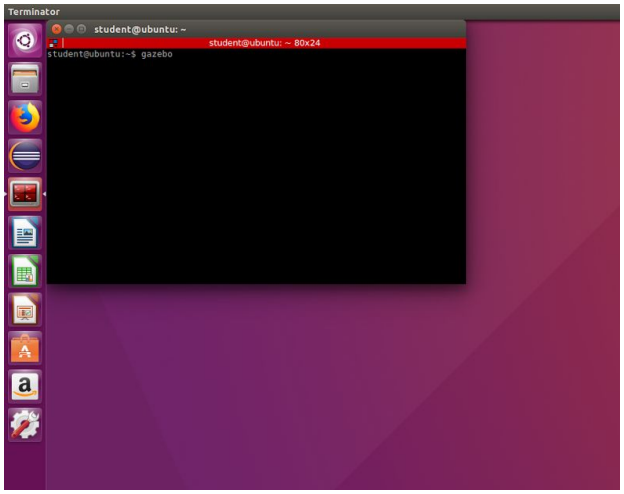
You will need to work with the Gazebo simulation from the first day on of the ROS Course. Therefore, please make sure in advance that everything is running in your virtual machine.

To check that your virtual machine is running as expected start the Gazebo simulation as explained below:

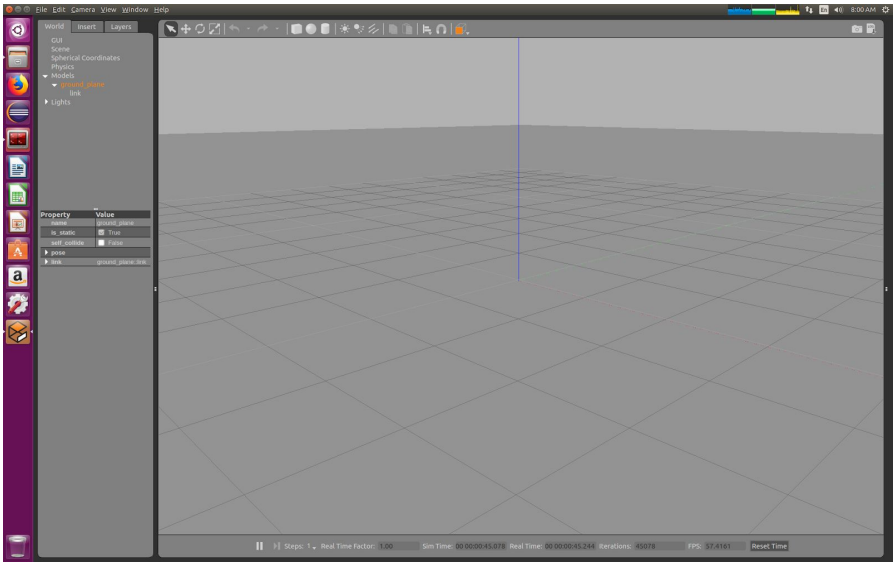
- Open a terminal (Terminator) by clicking on the terminal Icon on the left side (alternatively press Ctrl+T)



- Type in the terminal `gazebo` and press Enter:



- A window should appear showing an empty simulation environment, feel free to play around by adding/deleting objects.



- Close the simulation by entering Ctrl+C in the terminal you used to start gazebo.