

# Installing Ubuntu and ROS

IRR S2019



**Ubuntu** (Zulu pronunciation: [\[ùbùnt'ù\]](#)) is a [Nguni Bantu](#) term meaning "humanity". It is often translated as "I am because we are," and also "humanity towards others", but is often used in a more philosophical sense to mean "the belief in a universal bond of sharing that connects all humanity".

# Options to install (natively) Ubuntu on your PC

- Ubuntu Alone on your laptop
- Dual Boot - Alongside with Windows: **You must have at least 15GB free space on your hard disk!**
- Bootable Ubuntu USB drive -- Default method in class
- Bootable Ubuntu SD card
- Bootable Ubuntu SSD with USB connector

## *Other VM Options*

- Mac: VMware Fusion (not free?)
- **VM on Windows? Oracle VM VirtualBox (free - VirtualBox.org)**
- Windows 10 WSL (Windows Subsystem for Linux) - Not reliable, no hardware support yet.  
<https://blogs.windows.com/windowsexperience/2018/09/28/bringing-the-power-of-windows-10-to-the-robot-operating-system/>

# Dual Boot

First, Backup your files on Windows

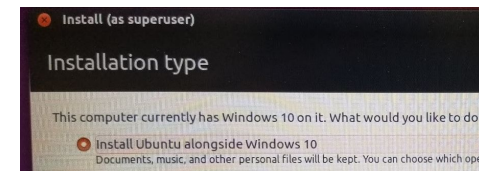
Second, shrink the Windows file system volume

1. Search: “Create and format hard disk partitions”
2. Right Click on (C:) and select “Shrink Volume...”
3. Enter the amount of space for Linux (at least 15GB), for example 100000

Third, install Ubuntu alongside Windows (See next slide)

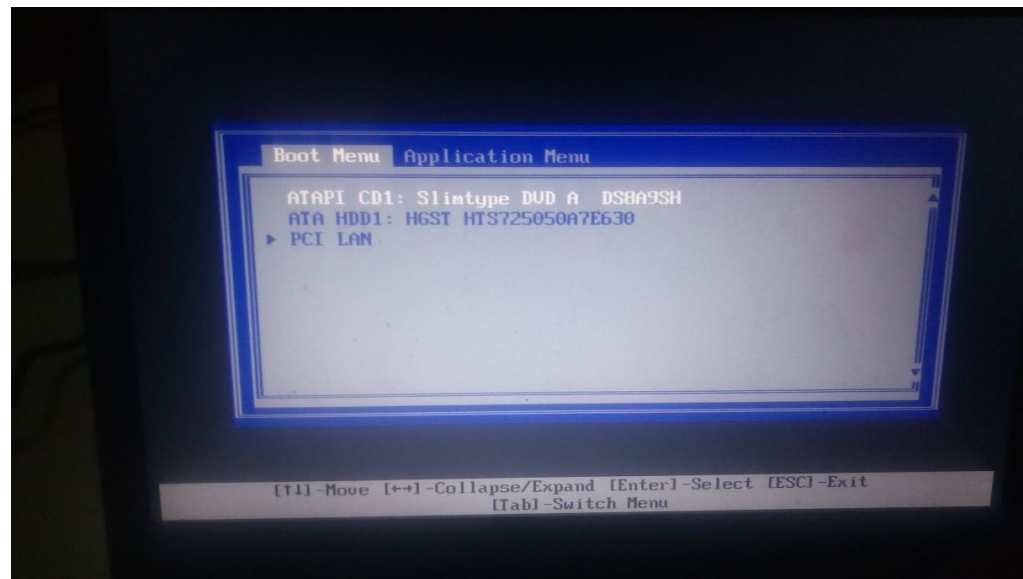
# Install Ubuntu alongside with Windows (1½)

1. Shutdown the PC
2. Insert the USB stick with Bootable Ubuntu
3. Power on
4. Press F12 (Yoga), Blue ThinkVantage + F12 (ThinkPad) when you see ...
5. Enter Setup when you see & select “USB HDD ...” under Boot Menu. The goal is to run Ubuntu on the USB stick.
6. You will see Welcome. Click on “Install Ubuntu” button
7. Need to connect to the Internet to download. Then click on “Continue” button
8. Select both checkboxes under “Preparing to install Ubuntu” to Download updates and Install third-party software
9. Now you will see “Install Ubuntu alongside Windows 10”



# To use a bootable USB stick

- Power off computer
- Plug in USB drive
- Enter boot menu
  - F12 for most laptops
- Boot > Startup > Boot priority
  - Change #1 to SanDisk
- Exit boot menu
- Reboot



# To make a bootable USB stick (Nick Paul)







1. Shutdown the PC
2. Insert the USB stick with Bootable Ubuntu, insert empty USB
3. Power on
4. Press F12 (Yoga), Blue ThinkVantage + F12 (ThinkPad) when you see ...
5. Enter Setup when you see & select “USB HDD ...” under Boot Menu. The goal is to run Ubuntu on the USB stick.
6. You will see Welcome. Click on “Install Ubuntu” button
7. During the install step select “Something Else...”
8. Select flash drive as install location
9. Complete installation

# Install Ubuntu alongside with Windows (2/2)

10. Click on “Install Now”
11. Click on “Continue”
12. We are in New York Time Zone. Click on Continue
13. Select Keyboard layout
14. Create Superuser (root) account
15. Restart when installation is complete. (Remove USB)

# ROS Versions

EOL - End of Life!

Distro	Release date	Poster	EOL date
Melodic Morenia	May 23, 2018		2023-05-30
Lunar Loggerhead	May 23, 2017		2019-05-30
Kinetic Kame	May 23, 2016		2021-05-30
Jade Turtle	May 23, 2015		2017-05-30
Indigo Igloo	July 22, 2014		2019-04-30
Hydro Medusa	September 4, 2013		2014-05-31



# Kinetic ROS installation on Ubuntu

1. Open Firefox browser and go to: <https://wiki.ros.org/kinetic/Installation/Ubuntu>
2. Run 1.2 command to accept software from packages.ros.org
3. Run 1.3 command to setup your keys
4. Installation
  - a. First make sure your Debian package is up-to-date
  - b. Then install Desktop-Full. Enter “Y”. This step will take long. If you get an error due to Internet connection, redo this step b.
5. Initialize rosdep
6. Environment setup: Just run the first one
7. Run 1.7 command
8. \$ roscore on a terminal

# Testing ROS Setup by using turtlesim

```
$ roscore
```

```
$ rosrn turtlesim turtlesim_node
```

```
$ rosrn turtlesim turtle_teleop_key
```

*Reading assignment: ~ page 16 of  
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