Resources for Ubuntu Virtual Machine Installation

F1/10 Autonomous Racing Spring 2020

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[1] Using VirtualBox on Windows 10

VirtualBox is free and open source virtualization software from Oracle. It enables you to install other operating systems in virtual machines. It is recommended that your system should have at least 4GB of RAM to get decent performance from the virtual operating system.

Requirements

- Good internet connection to download software and Linux ISO. (You can also use some other computer with an internet connection to download these files.)
- Windows system with at least 12 GB of free space.
- Windows system with 4GB of rRAM. (It can work with less RAM as well, but your system will start to lag while using Linux in the virtual machine.)

Follow the instructions on this website: https://itsfoss.com/install-linux-in-virtualbox/

**Note that the instructions above are for Ubuntu 17.10. We reccommend installing 18.04 (or 16.04 but not any older version)

The ISO installation file can be downloaded from:

- 18.04 desktop image: http://releases.ubuntu.com/18.04/
- 16.04 desktop image: http://releases.ubuntu.com/16.04/

A few recommendations and guidelines for the Windows VirtualBox VM installation:

- Do not allocate more than half of your host machine RAM to the VM. The host also need RAM to run the VM itself. E.g. if your laptop has 8GB RAM, it is reccommended to allocate 3 or 4 Gb to the VM.
- A minimum of 128 MB of Video RAM should be set for the VM.
- If you have display troubles with VirtualBox in which the Ubuntu window does not scale to full screen Mount the Guest Additions by selecting Devices –> Insert Guest Additions CD image… Follow the

prompts to run and install the guest editions. reboot. the vm should scale to full screen easily. This is a common problem and is addressed here: https://www.pcmobitech.com/virtualbox-fix-full-screen-problem-for-all-os/

[2] Using VirtualBox on OS X

Virtualbox has recently been known to run slowly on the latest versions of Mac OS X. In some cases, allocating enough RAM (>4GB) and VRAM can fix this but if the VM is painfully slow on OS X and unusable then we encourage you to install Parallels [paid software] virtual machine.

After installing Parallels, download the Ubuntu ISO as indicated above and simply follow the prompts for the 'manual installtion using ISO/image' option.

[3] Backup: Create a free account on ROS Development Studio

ROS development studio allows one to run a cloud hosted instance of ROS from their local browser. The upside is that you do not need to install anything on your machine. The downside is that it does not support all the ros packages we would need for the course.

You can create a free Beginner account (restricted to 30 hours per month) by visiting: https://www.theconstructsim.com/rds-ros-development-studio/

Therefore, if you are facing problems with the VM installation then an interim solution is to create a basic account on RDS so that you can still follow along the initial lab sessions.

However, this is not a viable long term solution yet; to attempt and demo the assignments, having access to Ubuntu on your local machine is a must.