Setting up Ubuntu Laptops and the Duckietops

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This is the guide to install the Duckietop laptops (Thinkpad 450s) for the class from scratch. You can follow this guide to set up your own Ubuntu laptop as well.

Install Ubuntu

Get Ubuntu 14.04 (64-bit) bootable image on USB.

Reboot computer and hit “enter”.

hit F12

Choose *Install Ubuntu*

Connect to a network by double clicking on the network.

Choose all the standard settings.

Official course laptops only:

For the main user, use: name/password ubuntu/quackquack.
For the hostname: choose duckietop1, duckietop2, etc.

Ubuntu installs.

Install most things using the duckietop_setup.sh script

We have a setup script that does most things for you.

Download the setup script:

```
$ wget https://raw.githubusercontent.com/duckietown/Software/master/setup/duckietop_setup.sh
```

Run it using:

```
$ source duckietop_setup.sh
```

Install extra packages

```
sudo apt-get install openssh-server byobu vim avahi-discover avahi-utils  ecryptfs-utils htop git-extras
```

Install dropbox

Follow instructions here: https://www.dropbox.com/install?os=lnx

Official course laptops only: Install dropbox with the account duckietop@gmail.com.

Install Google Chrome

You probably need Google Chrome, otherwise ctrl+c in Google Docs doesn't work in firefox

Install ROS (included in the script)

This is the minimal sequence of commands:

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'
sudo apt-key adv --keyserver hkp://pool.sks-keyservers.net --recv-key 0xB01FA116
sudo apt-get update
sudo apt-get install ros-indigo-desktop-full
```

(optional) Install redshift

This is Flux for Linux. It is an accessibility/lab safety issue: bright screens damage eyes.

Install redshift and run it.

```
sudo apt-get install redshift-gtk
```

Set to "autostart" from the icon.

(Optional) Install insync

Install insync using the account duckietop@gmail.com

Follow instructions at:

https://www.insynchq.com/

(Optional) Remove notifications

Notifications are distracting. Use the instructions at http://askubuntu.com/a/464697 to disable notifications.

(Optional) Add passwordless sudo for ubuntu and test users mack and jack

Run the command:

```
sudo visudo
```

Then add the following lines, one for each user:

sudo apt-get install git-extras

```
ubuntu ALL=(ALL) NOPASSWD: ALL
mack ALL=(ALL) NOPASSWD: ALL
jack ALL=(ALL) NOPASSWD: ALL
```

Things to add and test:

Install ROS and Git and Checkout Duckietown Software repo

```
 laptop $  git clone git@github.com:duckietown/Software.git duckietown
```

Install additional required dependencies using install scripts in the repo

```
laptop $ cd ~/duckietown
laptop $ source duckietown_install_car.sh
laptop $ source duckietown_install_laptop.sh
```

This will install all the necessary dependencies and some tools.

Set up ROS environment

Now we are ready to make the workspace. First you need to source the baseline ROS indigo environment:

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

Then, build the workspace (you have to be under the catkin_ws folder to invoke catkin_make)e.g. nano ~/.bashrc)

```
laptop $ catkin_make
```

Now, let's setup ROS environment in your ~/.bashrc.

Open the ~/.bashrc file in your editor of choice (Make sure that the following lines are in your ~/.bashrc file and if not, add them at the end of the file:

```
laptop $ source ~/duckietown/environment.sh
laptop $ source ~/duckietown/set_ros_master.sh
laptop $ export ROSLAUNCH_SSH_UNKNOWN=1
```

This means that by default your laptop will set itself as the ROS_MASTER.

Remember to "source the bashrc file for the change to take effect. Do

```
laptop $ source ~/.bashrc
```

Note that bashrc is (only) sourced every time you open a new terminal. For the change to take effect at old terminals, you must run the source command.

Check that everything is ok by writing:

```
laptop $ echo $ROS_MASTER_URI
> http://duckietop1.local:11311/
```

Reboot by

```
laptop $ sudo reboot
```

At this point your duckietop / ubuntu laptop is ready for action.

Exit