ECE391: Computer Systems Engineering **Fall 2016**
Reference: Working from Home (NO VPN)

The intention of this local development setup is for those who prefer working at home and do not want to use a VPN connection to the ECE391 server. Just remember that everything you do with this setup will be stored on your local machine. So after doing your mp, be sure to use SVN to commit your code to the server. This document includes the setup instructions for Windows, Mac OS X and Ubuntu.

Do remember that though developing using this setup is supposedly the same as developing on a ECE391 lab computer, there might be a slight chance your code won't work the same on it. So please run your code on a lab computer before your hand in time slot to make sure everything is working (everything worked for me when I was taking this class).

And as the professor said in class, we won't accept any hand in demos on your own computer, so please make sure you checkout your code and run it on a lab computer.

To setup the environment, follow these steps:

1. To start with this setup, please download the file using this link:
   `https://courses.engr.illinois.edu/ece391/secure/references/ece391.tar.gz`
   SHA-256 Checksum: b1fc12cf2ade7fc0a5078db78f6971d5a5cbef38f0e637b4b3b6daadfb00e2d3

2. Run the setup script, the name of the script depends on your operating system (i.e. Windows users should use `setup_win`, Mac users should use `setup_mac`, and Ubuntu users should use `setup_ubuntu`. If double clicking the script did not launch it, you can try to run it using command line or terminal. The script will generate devel/test virtual machines and place three shortcuts on your desktop (`devel, test_debug, test_nodebug`). You can run these shortcuts on your desktop by double clicking them or using terminal. You may run this setup script as many times as you want, it won't delete or modify anything already there.

   Note: The script for Ubuntu will also setup a new samba user. It will prompt for username and password. If you already has a samba user, just type in the same username, it will let you setup a new password after that.

3. Now make the `ece391_share` folder into a shared folder (share name should be `ece391_share` by default). And remember to give the correct user access to this folder.

   Windows users: To share a folder under Windows 7/8/8.1/10, please right click on the folder you wish to share, select `Properties`. Then go to the `sharing` tab and click on `Advanced Sharing...`. Here you can just tick the check mark in front of the option `Share this folder`. Lastly, click on the `Permissions` button, then click `Add` in the new window, type in your windows username and click `Check Names` and `OK`. Remember to tick the check mark for `Full Control` for the user you just added.

   Mac users: To share a folder under Mac OS X, install `SMBUp` (there is a zip file for version 1.4.1 included). You should follow the instructions given here (`http://eduo.info/apps/smbup`) at its official website.

   Ubuntu users: To share a folder under Ubuntu, please right click on the folder you wish to share, then select `Local Network Share`. Tick the check mark in front of `Share this folder` in the popup window (you do **NOT** need to check the other ones). Finally, click `Create Share`).

4. Startup your `devel`, after logging in with either user or root, use command `vim .bashrc` to edit the `.bashrc` file. Append your user name you used in step 3 after `SHAREUSER=`.

5. Now source the .bashrc script (which means, use it as a source of commands) by typing either `source .bashrc` or `. .bashrc`. The system will prompt for the password for the user you used to setup 3.

6. You can now compile the kernel if you need to (you need the kernel for mp1), just go into the build directory (`/home/user/build`), and compile using command `make` and `make install`.
7. After compiling the kernel you can launch `test_nodebug` and repeat step 4 to setup `/workdir` for it.

If you have questions and/or problems, feel free to post them to Piazza.