Computing Environment of EC500 Spring 2018

Introduction

The computing environment will consist of two elements.

- Your laptop with the VirtualBox "appliance" set up by Prof. Jeff Cruthers for EC602
- An account on the Shared Computer Cluster (SCC) at MGHPCC: http://www.mghpcc.org

You will need to bring a laptop computer to class to complete your assignments. The acounts on SCC have been set up for large scale parallel development and testing.

You will probably also want to have on your laptop:

- a C++14 compiling environment
- a Python 3.6 environment together with the Scipy/Numpy tools
- a unix-like computing environment to test your programs on.
- free Mathematica: http://www.bu.edu/tech/services/cccs/desktop/distribution/mathsci/mathematica/student/

Making the VirtualBox

VirtualBox Manager

You will need the VirtualBox Manager application, available here: https://www.virtualbox.org/wiki/Downloads.

Choose the appropriate one for your computer (Mac OS X or Windows).

Downloading the Appliance

You will need the pre-configured virtual box, called an appliance, here:

https://drive.google.com/open?id=0BwpRtnDTnw92bUZiUVZyUGFTT3M

You will get a black screen saying unable to preview: just click the download button.

You will then get a "Google can't scan for viruses" screen. Click "Download anyway".

You will need to be logged into your BU account as the Google Drive is BU only.

Making the virtualbox

Run VirtualBox Manager, then in the File menu, Import the appliance. The appliance's file name is

```
ec602f17.ova
```

The appliance will be in your downloads folder.

In the dialog box, click "Import", and find the `.ova` file above.

The creation of your custum virtual box (which I call the "DevBox") will take a couple of minutes.

Setting up virtualization (if necessary)

If your computer insists on 32-bit mode operation, it is because virtualization is disabled. You will need to enable this to use the developement system.

To enable hardware virtualization for your computer, you will need to access the BIOS or UEFI settings during the boot sequence.

On newer Windows machines, you will need to go to settings, then Update and Recovery, and click on "Advanced Startup".

On older windows machines, you will get the option to go to the BIOS every time, usually with F1 or F2.

Look for something like "Enable VTx" or "Intel Virtual Technology." Set it to "Enabled".

Save the new settings and reboot.

You will likely have to make the virtual machine again in this case.

Setting up the Virtualbox

The DevBox / Virtual Machine can access files on your computer using a feature called "Shared Folder". This allows the VM to read and write files to directories that you specify.

This was already configured, but it was done for the folder "/Users/jeffcarruthers/Downloads".

You will want to change this to a folder on your computer. Here is how.

- Open "Settings" when the VM is selected in the VirtualBox Manager

- Click on "Shared Folders"

- Select the folder, then the icon with an orange circle on it.

- Change the folder path to a folder on your computer.

Configuration information.

Now you are ready to open the VM. Press Start on the VirtualBox Manager.

The username is ec602 and the password is ec602

You can change your password using the `passwd` command, run from terminal.

Shared Computer Cluster (SCC) at MGHPCC

Information will be provided next week. One step at a time.