

1 Overview

If you already have a way to use MATLAB, you can go directly to Lab 1. If you do not, then you generally have the following options. You may access MATLAB remotely using the university's GoVirtual software, download and install Octave (an open-source equivalent) on a personal computer, or shell out \$99 for a MATLAB student license. Should all else fail, you may also use MATLAB on one of the machines in our lab in a pinch. In the following text, I shall describe in greater detail how to use MATLAB remotely and how to install Octave.

2 Running MATLAB Remotely

One alternative is to run MATLAB using the university's GoVirtual system provided through ACMS. This allows students to connect to a remote desktop with MATLAB pre-installed. It is fairly easy to set up; simply go to <http://acms.ucsd.edu/students/govirtual/> and follow the instructions to set up the remote client. This will require you to download a separate software called VMware Horizon Client, but the proper links are provided on the ACMS website. It only took me 5-10 minutes to get everything working. This works for Windows, Mac, and Linux, but has the following handicaps. Since you are connecting to a remote desktop, the speed at which you may run processes is limited by your internet connection. ACMS recommends a connection speed of at least 1.5 Mbps. However, although this MATLAB setup may run slower than normal, few of the labs are processing intensive, so the issue of speed may not be critical. The most inconvenient thing about this setup is transferring files from the remote desktop to your computer and vice versa. I have found that the easiest way to do so is to email files to yourself.

3 Octave on Windows

Somewhat surprisingly, installing Octave on Windows is pretty straightforward. Generally the steps are: (1) install Cygwin (a *stable* Linux emulator for Windows.); (2) Check the box to install Octave. Follow the instructions here: http://wiki.octave.org/Octave_for_Windows#Octave_on_Cygwin.

4 Octave on OS X

The general process for installing Octave on an Apple computer are: (1) Install MacPorts; (2) Install Octave; (3) Install fails, update MacPorts; (4) Install Octave; (5) Install fails, adjust MacPorts; (6) Repeat steps 4 and 5; (7) Install fails, but Octave runs—Success! The best instructions for installing MacPorts are found at the MacPorts website: <http://guide.macports.org/#installing>. The instructions for installing Octave are here: http://wiki.octave.org/Octave_for_MacOS_X#MacPorts.

4.1 Xcode

MacPorts requires Xcode (Step 2.2 in the guide), which needs you to know what version of OS X you are running (Click on the apple in the menu and select “About this Mac”, where v10.6 = SnowLeopard, v10.7 = Lion, v10.8 = MountainLion). If you have your OS X install CD handy, the installation of Xcode is easy. If you don't, you have to download an installation package, which can be up to 4gb depending on the version you grab. In other words, plug in an ethernet cable and find a book to read. The actual installation of Xcode also takes a bit of time.

4.2 Updating MacPorts

For some reason, the installation of MacPorts doesn't include a check to see if it's linked to the latest libraries. Before you try to install Octave, run `sudo port selfupdate` to make sure MacPorts is all up-to-date. When I tried to install Octave without doing that, it didn't recognize the `+atlas` option, confusing me significantly.

4.3 Problems with MacPorts

You're going to run into problems while installing Octave via MacPorts. It always happens. The first step to solving the problem is actually reading the error message that comes up. MacPorts is smart enough to offer a solution, but not smart enough to execute it. Usually their solution works. So read the message and try that solution first. If MacPorts' solution doesn't work, **google** is your friend—you are definitely not the first person to come across the same error.

5 Final Thoughts

Installing Octave will be a time-consuming process. It took me most of an evening to download and install everything I needed to make Octave work on my first-generation MacBook Air running OS X v10.6.8. Those with newer operating systems will likely spend a bit less time, but we're definitely well into the "hours" order of magnitude, not minutes. But you will learn a bit more about your computer and how it works in the process.