

UC Davis Computer Science at Home

This document will provide you with a way to communicate with the Computer Science Instructional Facility (CSIF) from home, and a variety of ways to create a UNIX environment at home.

Remote Access to the CSIF

You will need secure shell (ssh) and secure file transfer protocol (sftp) software to communicate with the CSIF. For Windows, PuTTY is a free ssh program, and WinSCP3 is a free sftp program with a GUI. You can download putty from <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>, and WinSCP from <http://winscp.net/eng/index.php>. For MacOS, there is a built-in ssh program, and Cyberduck is a free sftp program with a GUI. You can learn how to access the ssh on a Mac at <http://apple.blogoverflow.com/2012/02/how-to-use-ssh-on-mac-os-x/>, and download Cyberduck from <https://cyberduck.io/download/>. Once you have the programs you will create sessions using a CSIF computer name, e.g. pc13.cs.ucdavis.edu

Unix at Home

There are three ways of having a Unix experience at home: 1) Install a copy of Linux as a virtual machine on top of Windows; 2) installing cygwin in Windows; and 3) installing Linux on one of your hard drives, and dual booting it with Windows.

Installing Ubuntu as a Virtual Machine

You can find instructions and a copy of a Ubuntu virtual machine by going to the CSIF Virtual Machine Ubuntu 16.04 Installation Instructions:

https://docs.google.com/document/d/1JwhBgBCaSyhTZQGOUj0pVtWm_NiPi6q4PidLYo9vSTI/edit

Cygwin in Windows

Cygwin is a free application that emulates a Unix shell while still running the Windows operating system. With cygwin, you can develop using gcc, gdb, g++ on your Windows computer without need of connecting to the CSIF. You download the cygwin shell as well as Windows ports of Unix software from cygwin.com. In a web browser, go to cygwin.com, and click "Install Cygwin now". Once you start setup.exe, I suggest you accept all of the default selections until you reach the "Select Packages" screen. When selecting the options for cygwin you should at least install X11, openssh from the Net heading, and ddd, make, gcc, g++, and gdb from the Devel heading. Once cygwin is installed, you need only click on the cygwin icon to start a Unix like shell.

If you wish to program in a GUI environment you will need to use the X Server. First follow the directions at <http://x.cygwin.com/docs/ug/setup-cygwin-x-installing.html> to install the X server. Then follow the following steps:

Start cygwin

Type **cd**

Type **cp /etc/X11/xinit/xinitrc ~/.xinitrc**

Edit .bashrc using vi by typing **vi .bashrc**

Add the following line at the end of .bashrc: **PATH=\$PATH:::/usr/X11R6/bin**

Save .bashrc, exit vi, and exit cygwin.

From now on, to develop at home: start cygwin and then Type **startx**

For more information visit <http://x.cygwin.com/docs/ug/using.html>

To develop using the CSIF computers remotely:

start cygwin and then Type **startx**

Type **ssh -Y -l username remote_hostname**, e.g. **ssh -Y -l davis pc10.cs.ucdavis.edu**

After entering your password, at the shell prompt, type **xterm&** this will open an X Window on your home machine that you will now type into!

Installing Linux on your Hard Drive

For this option you will to have a copy of a Linux distribution DVD or CDs. You can download the appropriate images from <http://distrowatch.com>. You will find <http://heather.cs.ucdavis.edu/~matloff/Linux/LinuxInstall.pdf> quite helpful. If you think you would like some hands on help, then you can go to an Installfest of the Linux User Group of Davis, lugod.org. Installfests are held in Kemper. Installfests are day-long events, taking place from 10am until around 6pm (depending on attendance). You must make reservations at <http://lugod.org>