

UNIX Quick Reference Guide

Starting UNIX

If machine is in Windows mode, shut down (properly) and reboot. **IMPORTANT** - You should totally power down the PC when rebooting. Otherwise, some hardware (like the network card) may not work properly. When selection screen appears after reboot, highlight *Linux* and hit return and wait.

Logging In

Use your EECE account login and password. You will be running programs on the Linux box, but your files will be in your EECE account directory (through the magic of the network file system).

Running X Windows

After logging in, type 'startx' to change from the text screen to a windows-like display. **NOTE:** On some machines, this will be done automatically.

The X Windows user interface is similar to Windows 95/98 on a PC in many ways. Experiment with the *Start* button at the bottom, and with the popup menus invoked from the mouse buttons in the desktop area.

While many useful operations can be performed from the desktop, experienced UNIX users prefer the command-line interface mode accessed through 'X terminals' (Xterms). In fact, many operating system functions and programs (including 'spice3' and 'magic') can only be run in this way.

X Terminals

X-Terminals can be created from the Start menu at the bottom of the screen (Select "New Shell"). Each X-terminal is a window with a prompt to enter commands, and a scrolling history of previous text.

Shells and Directories

Each X-terminal runs in it's own 'shell', and is independent of the others. Each is associated with a directory (like a DOS prompt is) so that when you enter

commands such as 'rm' to remove (delete) a file, it works on the file(s) in that directory.

Shell Configurations

Each shell is configured to know where programs on the system are through a 'search path' setting, and to pass configuration information to programs through 'environment variables'. The search path setting is actually just an environment variable - usually called 'path'.

When a new Xterm is started, it reads a config file in your home directory that contains the 'path' variable as well as others that programs you run will need. If you are running a C-shell, the config file is '.tcshrc'. This is a text file you can edit.

Editing Files

There are three text editors to choose from in our labs: *vi*, *emacs*, and *pico*. If you are unfamiliar with these editors, *pico* is probably the best choice for beginners.

Case Sensitivity

Unlike most programs and many operating systems, Xterm shells are case-sensitive. So typing the command 'PICO' is not the same as typing 'pico'. By convention, most commands are all lower case.

Directories and Pathnames

Directories are referred to by pathnames such as:

- ◆ /usr/home a subdirectory called 'home' under the directory called 'usr', which is in the root directory '/.
- ◆ . the current directory
- ◆ .. the parent directory

Note that UNIX uses the **forward slash**, whereas DOS and Windows use a backslash to separate directory pathname components.

Filenames

Filenames can be of any length, are case sensitive, and can have suffixes like '.mag', that help to determine

their type. Unlike DOS, there is nothing special about the '.' character. It is just another character, and there can be any number of '.'s and any number of characters after a '.' in a pathname.

Wildcards

You can use '*' as a wildcard as in Windows/MSDOS.

Commonly Used Commands

Directories

ls [-l] list directory contents. If -l used, lists files sizes, dates, permissions, etc
cd <path> change directory to new path
pwd print working (current) directory

Files

cp [-r] <src> <dst> copy file <src> to <dst>. If -r used, copies a directory.
rm [-r] remove (delete) file. If -r used, removes a directory.
mv moves (renames) a file or directory.
more <file> displays contents of file, one screen at a time.

Help

man <command> Display details about how to use a command or program

Environment Variables

setenv <var> <val> Set environment variable to value
printenv <var> Print value of env variable

Misc

grep <pat> <files> Scans through all files listed, and prints lines that contain pattern
df Display free space on disk
du Display size of all files in directory
ps [-aux] Display all processes running
kill <pid> Kill the specified process

Printing

Files can be printed using
lpr -P8k <file>

Screen Dumps

A handy utility for capturing screen displays and either saving them to a file, or printing them is Xview, which can be invoked from the Start menu. Go to the Programs group, and then Graphics, and then xv.

Getting Help

All UNIX commands, and most application programs have a 'manual page', (a help file) that can be displayed by typing

```
man <command>
```

from the Xterm command line. For this to work, you need to have the appropriate MANPATH environment variable value in your shell config file (see above).

Copying Files to and from Floppy Disks

You can use the command

```
mcopy <file> a:
```

to write a file to the floppy drive. If the file is a text file, use the command

```
mcopy -t <file> a:
```

This will properly translate the carriage returns and line feeds, which are used differently in UNIX and Windows.

To copy a file from a: to the current directory, use

```
mcopy a:<file> .
```

```
mcopy -t a:<file> .
```

respectively.

Running Programs

Programs like 'netscape', 'spice3', and 'magic' are invoked from an Xterm command line. If your path environment variable in your shell startup file is properly set, then you can invoke 'netscape' by typing:

```
netscape
```

or 'magic' by typing:

```
magic -Tscmos <file>
```

or 'spice3' by typing:

```
spice3 <file>
```

Logging Off

When you are done, shut down X windows from the popup menu in the desktop area (use "Exit Fvwm").

Then type 'exit' to log out.

Rebooting to Windows

If you really want to return to windows (why would you?), log off as above, and use Alt-Ctl-Del to reboot.