

Unix

Outline

- Commands
- Environment Variables

Basic Commands

Command	Meaning
ls	list files and directories
ls -a	list all files and directories
mkdir	make a directory
cd <i>directory</i>	change to named directory
cd	change to home-directory
cd ~	change to home-directory
cd ..	change to parent directory
pwd	display the path of the current directory

Command	Meaning
<code>cp <i>file1 file2</i></code>	copy <i>file1</i> and call it <i>file2</i>
<code>mv <i>file1 file2</i></code>	move or rename <i>file1</i> to <i>file2</i>
<code>rm <i>file</i></code>	remove a file
<code>rmdir <i>directory</i></code>	remove a directory
<code>cat <i>file</i></code>	display a file
<code>less <i>file</i></code>	display a file a page at a time
<code>head <i>file</i></code>	display the first few lines of a file
<code>tail <i>file</i></code>	display the last few lines of a file
<code>grep 'keyword' <i>file</i></code>	search a file for keywords
<code>wc <i>file</i></code>	count number of lines/words/characters in file

Command	Meaning
<i>command > file</i>	redirect standard output to a file
<i>command >> file</i>	append standard output to a file
<i>command < file</i>	redirect standard input from a file
<i>command1 command2</i>	pipe the output of command1 to the input of command2
<i>cat file1 file2 > file0</i>	concatenate file1 and file2 to file0
sort	sort data
who	list users currently logged in
*	match any number of characters
?	match one character
man <i>command</i>	read the online manual page for a command
whatis <i>command</i>	brief description of a command
apropos <i>keyword</i>	match commands with keyword in their man pages

Some quick commands

Command	Meaning
ls -lag	list access rights for all files
chmod [<i>options</i>] <i>file</i>	change access rights for named file
<i>command</i> &	run command in background
^C	kill the job running in the foreground
^Z	suspend the job running in the foreground
bg	background the suspended job
jobs	list current jobs
fg %1	foreground job number 1
kill %1	kill job number 1
ps	list current processes
kill 26152	kill process number 26152

Killing a process

- To list jobs
 - jobs
- To bring the last job to the foreground
 - fg
- To run the suspended job in the background
 - bg
- To list the process ID of the processes
 - ps -aef | grep prasun
- To kill the process
 - kill -9 <processID>
 - killall <process name>

Some quick commands to remember

- Ctrl-a: to go to front of line in the shell
- Ctrl-e: to go to end of line in the shell
- !?xyz the most recent command with matching string "xyz"
- !xyz the most recent command beginning with "xyz"
- chsh: to change your shell
- cd - : go the previous directory you were in

Environment Variables

ENVIRONMENT variables are set using the set command, displayed using the set, printenv or env commands, and unset using the unset command.

To show all values of these variables, type

```
$ printenv | less
```

```
$ echo $PATH
```

```
/usr/local/bin:/usr/ccs/bin:/usr/bin:/usr/dt/bin:/usr/openwin/bin:/usr/ucb:/usr/local/teTeX/bin:/usr/contrib/bin:.
```

```
$ PATH=$PATH:/home/1/todd/bin
```

export makes the change available to child processes of the shell

```
$ export PATH=$PATH:/home/1/todd/bin
```

apropos

When you are not sure of the exact name of a command,

```
$ apropos keyword
```

will give you the commands with keyword in their manual page header. For example, try typing

```
$ apropos copy
```

Man pages

There are on-line manuals which gives information about most commands. The manual pages tell you which options a particular command can take, and how each option modifies the behavior of the command. Type `man command` to read the manual page for a particular command.

For example, to find out more about the **wc** (word count) command, type
`$ man wc`

Alternatively

`$ whatis wc`

gives a one-line description of the command, but omits any information about options etc.

Man page sections

-k Equivalent to apropos.

-K Search for the specified string in *all* man pages.

man -k socket

.....

socket (2) - create an endpoint for communication

socket (3p) - create an endpoint for communication

socket (7) - Linux socket interface

socket (n) - Open a TCP network connection

.....

Access Man page by section

`man -S 2 read`

[Read section 2 of the man page]

`echo $MANPATH`

[Echoes the paths where man pages will be searched for]

Editing PATH variable

Editing your .bashrc file

- Go to your home space 'root directory' (type **cd**)
- Use your favorite text editor (e.g. type **xemacs .bashrc**)
- There should be a line looking like:
 export PATH=\$PATH:blahblah:
If there is not, just add one.

Miscellaneous

dos2unix <fileA> : to convert fileA from dos to unix format

Other pointers

- Read man pages to learn other commands such as:
 - gzip, cat, zcat, diff, find, history, diff, more, less, source
- Bash Shell:
 - <http://www.gnu.org/software/bash/manual/bashref.html#Bourne-Shell-Variables>
- Debugger
 - Debugging a multi-process program is difficult with a debugger such as gdb
 - Lots of printf to reveal the value of most of the variables is strongly recommended during development