**Raspberry Pi Commands**

**man** This is short for manual. It takes a single argument, that is, a word after the command that isn't preceded by a hyphen. It then displays information on the command given as an argument. To see the man page for ls, type man ls. You can navigate through the page using the up and down arrows, or the page up and page down keys to scroll faster. To search for a word or phrase inside the man page, type /, then the phrase. For example, /-l will find all occurrences of -l. You can use the N key and Shift+N to scroll forwards and backwards through the occurrences of -l.

**sudo** When using the Raspberry Pi for normal use, you can work with files in your home directory (eg, /home/pi). You will also be able to view most other files on the system, but you won't be able to change them. You also won't be able to install software. This is because Linux has a permissions system that prevents ordinary users from changing system-wide settings. This is great for preventing you from accidentally breaking your settings. However, there are obviously times when you need to do this.

**Navigation**

**cd** Change directory. eg, cd movies moves to the movies folder. cd moves to your home directory, cd / moves to the root directory, and cd .. moves back one directory.

**ls** List files. By itself, it lists the files in the current directory. ls movies lists the files in the directory movies. ls -a lists all files (including hidden ones), and ls -l lists more information about each file.

**cp** Copy files. cp orig-file new-file copies orig-file to new-file.

**wget** Downloads a file from the internet. To download the Google home page to the current directory, use wget www.google.com.

**df -h** Displays the amount of space left on the device.

**pwd** Displays the current directory.

**Remote working**

**ssh** Log in to a remote computer using Secure SHell (SSH protocol). ssh pi@192.168.1.2 will log in as user pi on the computer at the IP address 192.168.1.2. Note, this will only work if the remote computer has an SSH server running.

**scp** Secure CoPy. scp file pi@192.168.1.2 :/home/pi will copy file to the directory home/pi on the machine with 192.168.1.2. scp pi@192.168.1.2:/home/pi/file. will copy /home/pi/file from the machine 192.168.1.2 to the current directory. Note, this will only work if the remote machine has an SCP server running.

**Wildcards**

**\*** Matches any string of characters, or no characters.

**?** Matches any single character.

**[abc]** Matches a, b or c.

**[!abc]** Matches any character except a, b or c.

**[A-Z]** Matches any character in the range A–Z (ie, any upper-case letter).

**[A-z]** Matches any character in the rance A–z (ie, any upper- or lower-case letter).

**[one, two]** Matches the words one and two.

**System Information**

**top** Displays the programs that are currently using the most CPU time and memory.

**uname** Displays information about the kernel. uname -m will output the architecture it's running on.

**lscpu** Lists information about the CPU.

**dmesg** Displays the kernel messages (can be useful for finding problems with hardware).

**Text files**

**head** Displays the first ten lines of a text file. Change ten to any other number with the -n flag. eg, dmesg | head -n 15 displays the first 15 lines of the kernel message log.

**tail** Displays the last ten lines of a text file. Can use the -n flag like head. Can also keep track of a file as it changes with the -f (follow) flag. eg, tail -n15 -f /var/log/syslog will display the final fifteen lines of the system log file, and continue to do so as it changes.

**less** Allows you to scroll through a text file.

**cat** Dumps the contents of a text file to the terminal.

**nano** A user-friendly command line text editor (Ctrl+X exits and gives you the option to save changes). Special keys Ctrl+C Kills whatever program is running in the terminal. Ctrl+D Sends the end-of-file character to whatever program is running in the terminal. Ctrl+Shift+C Copies selected text to the clipboard. Ctrl+Shift+V Pastes text from the clipboard.

**Installing software**

**tar zxvf** file.tar.gz

**tar xjf** file.tar.bz

**./configure** When you unzip a program's source code, it will usually create a new directory with the program in it. cd into that directory and run ./configure. This will check that your system has everything it needs to compile the software.

**make** This will compile the software.

**make install** (needs **sudo**) This will move the newly compiled software into the appropriate place in your system so you can run it like a normal command.

**apt-get** This can be used to install and remove software. For example, sudo apt-get install iceweasel will install the package iceweasel (a rebranded version of Firefox). sudo apt-get purge iceweasel will remove the package.

**apt-get update** will grab an up-to-date list of packages from the repository (a good idea before doing anything).

**apt-get upgrade** will upgrade all packages that have a newer version in the repository.

**apt-cache search** <keyword> will search the repository for all packages relating to keyword.