**Starting a Terminal**

To open a **Terminal** do as follow:

* Choose Applications → Accessories → Terminal;
* Or press **Alt**+**F2** and type **gnome-terminal**.

## System Information Commands

### df

The **df** command displays filesystem disk space usage for all partitions.

df -h

will give information using megabytes (M) and gigabytes (G) instead of blocks (**-h** means "human-readable").

### free

The **free** command displays the amount of free and used memory in the system.

free -m

will give the information using megabytes, which is probably most useful for current computers.

### top

The **top** command displays information on your GNU/Linux system, running processes and system resources, including CPU, RAM & swap usage and total number of tasks being run. To exit **top**, press **q**.

### uname

The **uname** command with the **-a** option, prints all system information, including machine name, kernel name & version, and a few other details. Most useful for checking which kernel you're using.

### lsb\_release

The **lsb\_release** command with the **-a** option prints version information for the Linux release you're running. For example, typing:

lsb\_release -a

will give you:

No LSB modules are available.

Distributor ID: Ubuntu

Description: Ubuntu 8.04

Release: 8.04

Codename: hardy

### ifconfig

The **ifconfig** command reports on your system's network interfaces.

## File and Directory Commands

### cd

The **cd** command changes directories. When you open a terminal you will be in your home directory. To move around the file system you will use **cd**.

* To navigate into the root directory, type:

cd /

* To navigate to your home directory, type:

cd

or

cd ~

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| The **~** character represents the current user's home directory. As seen above, **cd ~** is equivalent to **cd /home/username/**. However, when running a command as root (using **sudo**, for example), **~** points instead to /root. When running a command with **sudo**, the full path to your home directory must be given. |

* To navigate up one directory level, type:

cd ..

* To navigate to the previous directory (or back), type:

cd -

* To navigate through multiple levels of directories at once, specify the full directory path that you want to go to. For example, type:

cd /var/www

to go directly to the /www subdirectory of /var/. As another example, type:

cd ~/Desktop

to move you to the Desktop subdirectory inside your home directory.

### pwd

The **pwd** command outputs which directory you are currently located in (pwd stands for “print working directory”). For example, typing

pwd

in the Desktop directory, will show /home/username/Desktop.

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| **GNOME Terminal** also displays this information in the title bar of its window. |

### ls

The **ls** command outputs a list of the files in the current directory. For example, typing

ls ~

will show you the files that are in your home directory.

Used with the **-l** options, **ls** outputs various other information alongside the filename, such as the current permissions on the file, and the file's owner.

### cp

The **cp** command makes a copy of a file. For example, type:

cp foo bar

to make an exact copy of foo and name it bar. foo will be unchanged.

### mv

The **mv** command moves a file to a different location or will rename a file. Examples are as follows:

mv foo bar

will rename the file foo to bar.

mv foo ~/Desktop

will move the file foo to your Desktop directory but will not rename it.

### rm

**rm** is used to delete files.

rm foo

deletes the file foo from the current directory.

By default, **rm** will not remove directories. To remove a directory, you must use the **-R** option. For example,

rm -R foobar

will remove the directory foobar, **and all of its contents!**

### mkdir

The **mkdir** command allows you to create directories. For example, typing:

mkdir music

will create a directory named music in the current directory.

## Executing Commands with Elevated Privileges

The following commands will need to be prefaced with the **sudo** command. Please see [RootSudo](https://help.ubuntu.com/community/RootSudo) for information on using **sudo**.

### Adding a New Group

The **addgroup** command is used to create a new group on the system. To create a new group, type:

addgroup newgroup

The above command will create a new group called **newgroup**.

### Adding A New User

The **adduser** is used to create new users on the system. To create a new user, type:

adduser newuser

The above command will create a new user called **newuser**.

To assign a password for the new user use the **passwd** command:

passwd newuser

Finally, to assign the new user to the new group, type:

adduser newuser newgroup

## Options

The default behavior for a command may usually be modified by adding a **-- option** to the command. The [**ls**](https://help.ubuntu.com/8.04/basic-commands/C/files-directories-commands.html#ls) command, for example, has a **-s** option so that **ls -s** will include file sizes in the listing. There is also a **-h** option to get those sizes in a "human readable" format.

Options can be grouped in clusters so

ls -sh

is exactly the same command as

ls -s -h

Most options have a long version, prefixed with two dashes instead of one, so even

ls --size --human-readable

is the same command.

## Other Useful Things

### Pasting in commands

Often, you will be referred to instructions that require commands to be pasted into the terminal. You might be wondering why the text you've copied from a web page using **Ctrl**+**C** won't paste in with **Ctrl**+**V**. Surely you don't have to type in all those nasty commands and filenames? Relax. Middle Button Click on your mouse (both buttons simultaneously on a two-button mouse) or Right Click and select Paste from the menu.

### Save on typing

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| **Up Arrow** or **Ctrl**+**p** | Scrolls through the commands you've entered previously. |
| **Down Arrow** or **Ctrl**+**n** | Takes you back to a more recent command. |
| **Enter** | When you have the command you want. |
| **Tab** | A very useful feature. It autocompletes any commands or filenames, if there's only one option, or else gives you a list of options. |

### Change the text

The mouse won't work. Use the **Left/Right arrow** keys to move around the line.

When the cursor is where you want it in the line, typing inserts text, it doesn't overtype what's already there.

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| **Ctrl**+**a** **Home** | Moves the cursor to the start of a line. | |
| **Ctrl**+**e** **End** | Moves the cursor to the ***e***nd of a line. | |
| **Ctrl**+**b** |  |  |
| **Ctrl**+**k** | Deletes from the current cursor position to the end of the line. | |
| **Ctrl**+**u** | Deletes the whole of the current line. | |
| **Ctrl**+**w** | Deletes the word before the cursor. | |

## More Information

The following online guides are available:

* [AptGetHowto](https://help.ubuntu.com/community/AptGetHowto) - using apt-get to install packages from the command line.
* [Commandline Repository Editing](https://help.ubuntu.com/community/Repositories/CommandLine) - adding the Universe/Multiverse repositories through the command line.
* [grep Howto](https://help.ubuntu.com/community/grep) - grep is a powerful command line search tool.
* [find](https://help.ubuntu.com/community/find) - locate files on the command line.
* [CommandlineHowto](https://help.ubuntu.com/community/CommandlineHowto) - longer and more complete than this basic guide, but still unfinished.
* [HowToReadline](https://help.ubuntu.com/community/HowToReadline) - information on some more advanced customization for the command line.

For more detailed tutorials on the Linux command line, please see:

* <http://linuxcommand.org/>- basic BASH tutorials, including BASH scripting
* <http://linuxsurvival.com/index.php>- Java-based tutorials
* <http://rute.2038bug.com/index.html.gz>- a massive online book about system administration, almost all from the command line.