

Frequently¹ Asked Questions about Linux and Unix

Revision: 1.9, Date: 2005/10/20 07:18:32

<http://www.capca.ucalgary.ca/~wdobler/teaching/phys499/Linux-FAQ.pdf>

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1 General

1.1 I want an overview over Linux commands in general

Search the web for ‘unix overview’, ‘unix tutorial’ or such. For more specific topics, try ‘unix *topic* howto’ or ‘Linux *topic* howto’ Here are a few links:

- http://www.capca.ucalgary.ca/~rouyed/teaching/CPI/Linux_help.html
- http://www.rice.edu/it/help/documents/training_docs/unix/unix01.01.pdf
- <http://www.ee.surrey.ac.uk/Teaching/Unix/>

¹ In the current context, *frequently* means ‘at least once’...

- <http://www.math.utah.edu/lab/unix/unix-commands.html>
- <http://unixhelp.ed.ac.uk/>
- <http://www2.ocean.washington.edu/unix.tutorial.html>

2 File management

2.1 How do I change file permissions?

To change file permissions, use

```
chmod (u|g|o|a) [+ -] (r|w|x) file
```

where “u”, “g”, “o”, and **a** stand for **u**ser (the owner of the file), members of the same **g**roup, all **o**thers, and **a**ll of these. The plus or minus sign prohibits or grants the permission, and the permissions are **r**ead, **w**rite (including changing and deleting) and **e**xecute. For example

```
chmod a-w file1      # No one can write the file, not even yourself
chmod go-rwx file2  # Others (incl. group members) cannot read/write/execute
chmod +x file3      # Make file executable
```

Use ‘ls -l’ to see the file permissions:

```
-r--r--r--  1 xenos000 users      0 Jan 26 10:47 file1
-rw-----  1 xenos000 users      0 Jan 26 10:47 file2
-rwxr-xr-x  1 xenos000 users      0 Jan 26 10:47 file3
```

See ‘man chmod’ for more details.

2.2 How do I display the contents of a text file without *Emacs*?

For a short file, use

```
cat file
```

For longer files, use

```
less file
```

(or ‘more file’, but *less* is better).

To navigate within *less*, use the following keys

Space, PgDn	page down
b, PgUp	page up
⏪	top of file
⏩	bottom of file
/	search for text
h	get help
q	quit

2.3 How do you list the last time files were accessed and modified?

```
ls -l          # list all files, show modification time
ls -l *.f90    # list all F90 files, show modification time
ls -ul        # list all files, show access time
ls -trl       # sort files (reversely) by modification time
```

See 'man ls' for complete documentation.

3 Customization

3.1 How do I get all these nice configuration settings that you have set up for us?

[Nobody actually asked this, but you still might want to know]

Copy the following files from user *xenos000* to your home directory:

```
cp -i ~xenos000/.bash_profile ~/
cp -i ~xenos000/.bashrc      ~/
cp -i ~xenos000/.emacs      ~/
cp -i ~xenos000/.fvwm2rc    ~/
cp -i ~xenos000/.inputrc    ~/
cp -i ~xenos000/.vimrc      ~/
cp -i ~xenos000/.Xresources  ~/
```

If one of these already exists, it will not be overwritten, but you should reconcile the two versions manually to benefit from both.

3.2 E-Mail forwarding

To forward your E-Mail from any lab machine to your general email address, write that address to the file '~/.forward'.

3.3 How can I make the shell prompt display other things, like the system time?

Use

```
export PS1='\t\$ '
```

Since you do not want to type this in each and every xterm you start, you need to put this line into the file '~/.bashrc':

```
~/.bashrc  
if [ "$PS1" ]; then # only do this for interactive shells  
    export PS1='\t\$ '  
fi
```

See

```
man bash | less -s +/'^PROMPTING'
```

for further options.

3.4 How can I make an alias (shortcut) for a command (e.g. short command for ssh'ing home)?

```
alias ssh_home='ssh user@home.provider.ca'
```

Note that bash-completion (see §3.1 above) can do most of the work for you; just type 'ssh ' and then press `Tab`...

Note: If you have your home computer on the net accessible via *ssh*, make sure all users have good passwords. A user *test* with password 'test123' is like an invitation for crackers and script kiddies to use your computer for spam mailing and other things that will bring you into trouble.

4 Graphics-related

4.1 How can I change the desktop size to a wide-screen aspect interface?

Why would you want to do that??

4.2 How can I put a scrollbar on the terminal?

Start the terminal with

```
xterm -sb &
```

To have *all* xterms get a scrollbar, put the following into the file ‘~/Xresources’ (see §3.1 above):

```
~/.Xresources  
XTerm*ScrollBar:      on
```

Then run ‘xrdb -m ~/Xresources’.

To add a scrollbar to an existing *xterm*, tick ‘Enable scrollbar’ in the menu that shows up when you click **Ctrl-Button2**.

See

```
man xterm | less -s +/'^RESOURCES'  
man X | less -s +/'^RESOURCES'
```

if you really want to know how this works.

5 Compilation

5.1 How can you compile a program to a different name than ‘a.out’?

```
g95 test.f90 -o test.x
```

will produce an executable called ‘test.x’.

6 Administration

6.1 How do I install programs on my computer?

This strongly depends on the Linux distribution you are running.

Debian: Use ‘apt-get’. For example, ‘apt-get install octave’ will install the package *octave* if it is available for the Debian version you are running.

SuSE: Use ‘YaST’ (graphical setup tool) and have your SuSE CDs or DVD ready. Alternatively, download the RPM file from a trusted source, become *root*, and install it with ‘rpm -Uvh octave-2.1.49-70.i586.rpm’.

6.2 How do I download the G95 compiler?

Currently, there is no Debian or RPM package available for *G95*, so you have to download it from <http://g95.sourceforge.net/>. See my posting on the *E-class* forum for details.

6.3 How can I speed up boot and shutdown time on Debian GNU/Linux?

[You did not reboot or shut down one of the lab computers, did you?]

Disable all services that you don't need (i.e. uninstall the corresponding packages).

If hardware tests are carried out at boot time, minimize them.