

DICE Introductory Exercise

Aims:

This is an introduction to the DICE environment and some basic Linux (the Operating System we use, as opposed to Windows, MacOS, Android etc) commands run from the command line.

Logging in

DICE machines ‘sleep’ when they are not busy so you may first of all have to press the *<return>* key or move the mouse and the login screen should then appear.

Enter your username (sMATRIC). (At this point you can select your preferred Window Manager from the drop-down menu in the top right-hand corner of the login screen. If you are not familiar with Linux Window Managers then we recommend that you use the default – GNOME).

Enter your password – this is NOT your Active Directory password. You should have received an email asking you to set your password by visiting pp.inf.ed.ac.uk.

GNOME Desktop Environment

Once logged in, you should see an Activities tab on the top left-hand corner and a few icons in the top right-hand corner.

Open a terminal window

Either click the “Activities” tab and then click “Terminal” - second bottom icon on the left-hand side – or right click on the desktop and click “Open terminal”.

Add an icon to the activities bar

You must always use the screenlock when you leave the desktop un-attended (for a short period of time only!). To add a convenient icon to the activities bar, click on “Activities” and select “Show Applications”. Browse through the “All” option until you find “Screen Lock”. Now right click on the icon and select “Add to favourites”. It will now appear in the left hand column of icons.

Some basic commands

In the terminal window, type the command:

```
pwd
```

This command (*Print Working Directory*) should return something like:

```
/afs/inf.ed.ac.uk/user/s18/<sMATRIC>
```

This tells you which directory you are currently in.

Now type:

```
ls
```

This command is short for 'list'. You should see a list of the files and directories in your current directory

Now try:

```
ls -al
```

This will give additional information about the files – who owns them, date last edited, permissions.

You can also tell ls to look elsewhere. Now try:

```
ls -al /home/infteach
```

This allows you to examine the contents of the home directory of the demo account 'infteach'.

```
ls -alrt
```

will sort them in date order. Near the bottom of the list, you should see a directory called Yesterday.

```
dr-x--x--x 314 username people 69632 Aug 20 12:00 Yesterday
```

The 'd' indicates a directory. The name of the directory is Yesterday and this contains a backup of your home directory from the day before. It is read only so you cannot create any files in it but you can copy files that you have accidentally deleted from it. It does not count towards your quota.

How do I check my quota?

Try the following command:

```
fs lq -human  
freespace
```

They will tell you how much quota you have and how much you have used. In year 1, you will have 4GB allocated. We use dynamic quotas to make better use of our available disk space so we do not give everyone their maximum quota all at once. We increase quota as your disk usage increases.

Copying files

To do this you use the 'cp' command. Its format is:

```
cp <source file> <destination file>
```

- Copy the file /home/infteach/system/testfile1 to your home directory, calling it example1.
- Now move to the infteach home directory (/home/infteach or ~infteach) using the cd (Change Directory) command. The format of the command is:

```
cd <directory>
```

Once there, type 'ls'. You should see a directory called "Files". Move to that directory and, using ls, see what files are there. Now use 'less' to view them. You quit the 'less' command by typing 'q'. Some files, however, are binary files and cannot be viewed with 'less'. Just say "n", if asked "See it

anyway?”.

- To get back to your own home directory, use the ‘cd’ command without any arguments.

Creating directories and moving files

Make sure you are in your home directory (use pwd and cd to check!)

- Create a directory called *examples* using the mkdir command:

mkdir examples

(Note Linux is case-sensitive – examples is not the same as Examples!)

- Copy the file *example1* into the examples directory using ***cp***.
- Rename the file *example1* (in your home directory) to *assessment* using the command ***mv***. (The ‘***man***’ command gives usage details – i.e. ***man mv***)
- Move to your “examples” directory and check that you have a file called ‘example1.
- Now move to the “system” directory in the infteach area and copy the file ‘*testfile2*’ back into your ‘*examples*’ directory and call it ‘*example2*’.

Deleting files and directories

To delete files, use the ***rm*** command.

To delete directories, use the ***rmdir*** command.

- Delete the file “*assessment*”.
- Try to delete your new ‘*examples*’ directory. (You should get an error!)
Now remove all the files in the directory and try again.

Command line completion

To complete long filenames, use the <TAB> key. Type:

- `less ~/infteach/av <PRESS TAB>`

The shell will fill in the rest of the name for you. Now try:

- `less ~/infteach/ch<PRESS TAB TWICE>`

This shows 2 files beginning with ‘ch’. Now type “o” and it will expand giving the only option for a file starting with ‘choiceo’.

Printing

All the printers in Appleton Tower are ‘cloud’ printers. You select ‘cloudm0’ or ‘cloud-mono’ for mono and ‘cloudc0’ or ‘cloud-colour’ for colour. You can then go to any cloud printer (in Appleton

Tower, the Library etc). You are given some print credit but you can top up at any time.

To check your print credit, use the EASE-authenticated web page:

<https://www.manageprint.is.ed.ac.uk/>

To add print credit, follow the instructions in paragraph 2 of:

<https://www.ed.ac.uk/information-services/computing/desktop-personal/printing/add-credit/online-print-credit>

Editing files

There are a number of editors available on linux. If you are not familiar with linux, try nano.

nano

Alternatively, you could use ***vi***, ***vim***, ***emacs*** to name a few.

You can open Microsoft Office files using OpenOffice.

ooffice <filename>

We recommend using ***evince*** to read .pdf files.

If you are not sure what type of file you are trying to open, the ***file*** command will tell you.

file poster-us-unit.odt

returns:

poster-us-unit.odt: OpenDocument Text

Further examples

- Look at the manual page for ***ls*** (***man ls***) and work out how to do listings in colour.
- Identify the most recently modified file in your home directory.
- How many characters does the poem file (~infteach/system/poem) have? (Check the ***wc*** command)

Chaining commands together with pipe

See “man bash” (“Pipelines” section under “SHELL GRAMMAR”)

There is a special character, the vertical bar “|” or “pipe” that allows you to pass the output of one command to the input of another command by placing it between two commands:

<command1> | <command2>

- Roughly how many files and directories do you have in your home directory?
- How many files are in the “~infteach” directory (at top level)?

Summary of useful commands

Command	Description
fs lq	Gives details of your quota. Check .Trash folder if quota is getting full.
ls	Lists/gives details of files in a given directory.
man	Man <command> gives on-line help.
cp	Copies files from one location to another.
mv	Moves files from one location to another. Also used to rename files
less	Views the contents of a plain text file
evince	Views pdf files
mkdir	Makes directories
rm	Removes a file
rmdir	Removes a directory if it is empty
lpr	Print a file from the command line
lprm	Remove a print job from the queue
lpq	Queries a print queue
cd	Change directory - without an argument, takes you to your home directory
passwd	The command to change your password