Introduction To Linux

The Shell

The shell converts given text into commands to run

Shells

- (bash) Bourne-Again shell
- (fish) friendly interactive shell
- (zsh) Z Shell

Using commands

Command format

```
COMMAND -o --option ARG1 ARG2 ... ARGN
```

Important commands

man

man = manual

```
man man
man COMMAND
```

cd

cd = change directory

```
cd Pictures
cd ../revealjs/
```

ls

ls = list

Lists all files in the current directory

rm

rm = remove

Removes the given arguments

Note: Needs the force and recursive option to delete directories

mkdir

mkdir = make directory

Makes a folder for each given argument

cat

Concatenate files

Prints the contents of all files in the order given to the console

e.g.

cat hello_world.txt

Hello World

echo

Outputs (stdout) the input

e.g.

echo "Hello World"

Hello World

netcat (nc)

General Usage:

`nc HOST PORT`

Note: IPv6 requires openbsd netcat

Using output

In order of usefullness

- | (Pipe)
- >> (Append)
- > (Set)

Usage: command | command

Usage: command >> filename

Usage: command > filename

```
ls > ls_output.txt
```

The content of ls_output.txt will be the output of ls.

```
ls >> ls_output.txt
```

The content of ls_output.txt will be the current contents with the output of ls added at the end.

grep

globally search a **r**egular **e**xpression and **p**rint

Prints out all the lines that match a given expression.

cat super_long_file | grep "password: "

Prints all the lines of super_long_file that contain password

Special characters

- Comment: #
- Command Seperator: ;
- Wild Card: *
- Evaluate: $(command)

Special Directories

- Current directory: .
- Parent directory: ..
- Home directory: ~ (/home/USERNAME/)

Hidden files

ls won't show these by default

Start with a full stop

.hidden_folder_or_file_name

Use ls -a (Same as ls --all)

What is -a and --all anyway?

Commands want to have options to enable/disable behaviour

These options are specified using short-hand or full (-o or --option)

Most commands will tell you these optional behaviours if you do

```
command -h       #Can be less informative - Sometimes doesn't wor
command --help   #Informative             - Usually works
man command      #Most informative        - Usually works
```

sudo

execute a command as another user

In 99% of cases, the superuser (aka root)

Necessary for editing system files, installing packages etc.

```
sudo ls /root/
sudo apt-get install coreutils --reinstall
sudo rm -rf /
```

Give these a go

- Read the man page on ascii
- Read the man page on ls
- Read the man page on ssh
- OverTheWire's Bandit Wargame (0-10 please)