

## Package

### DPKG

Debian based machines (Debian, Ubuntu)

Dpkg -i dropbox.deb	Installes package
Dpkg -L dropbox	Finding files that are installed by a package
Dpkg -s nano	Show if a package has been installed and some information about the package
Dpkg-reconfigure dropbox	Reconfigure a package based on the configfile
Dpkg --remove dropbox	Remove package without config file
Dpkg --purge dropbox	Remove package including config file

### APT

/etc/apt/sources.list	File where the repositories are stored in
Apt-get install emacs	Installes package and if a package already exists it will upgrade it
Depconf-show	Show package configuration
Aptitude	Terminal interface for managing all the packages on the system (Debian / ubuntu only!!)

### RPM

Red Hat based machines (CentOS, Red Hat, YellowDog, Suse, Fedora)

Rpm -i dropbox.dpkg	Installes package
Rpm -qi dropbox.dpkg	Information about package
Rpm -q --list dropbox	Finding files that are installed by a package
Rpm -qR dropbox	Query al the requirements that the package needs
Rpm -ql dropbox	Verify that a package has been installed
Rpm -qa	Show all installed rpm packages

### YUM

/etc/yum.repos.d	Repo's folder
/etc/yum.conf	Yum config file
Yum update	Update repo db
Yum search httpd	Search for a package
Yum install httpd	Installes package
Yum check-update httpd	Checks for update of a package
Yum upppgrade	Upgrade all packages
Yum remove httpd	remove package
Yum list httpd	Show information about installed package
Yum deplist httpd	Show all the dependecys of a package
Yum clean	Clear yum cache

## Archiving

## Description

Creating a iso from a file or CD-ROM `sudo dd if=/dev/cdrom of=/tmp/cdimg1.iso`

## Grub

### Grub

Boot legacy	Location: /boot/grub/menu.lst
Grub2	Location: /boot/grub2/grub.cfg (BIOS) Location: /boot/efi/EFI/distro-name/grub.cfg (UEFI)

/etc/default/grub	Changing settings for grub
Grub2-mkconfig -o /boot/grub2/grub.cfg	Making a config for grub2

## Bootimg

Post -> Bootloader -> Kernel (in memory, mounts root partition and runs initialisation program) -> initialization process starts the necessary background programs required for the system to operate

Bootloader is installed on the MBR (Master boot record)

Install GRUB on MBR:

- grub-install

Show kernel ring buffer content:

- dmesg

Memory:

Show active partition where the swapfile is stored:

- Swapon -s

Get information about the usage of virtual memory:

- vmstat

Root

Grant user as sudo user -> visudo

]

## Folders

/etc/	Config files
/var/	Files that frequent change
/dev/	Device file location
/proc/	Provides all the info about the processes (Virtual)
/sys	Stores all the modifications to devices (Virtual)
/lib/	Stores al the binaries files
/usr/	all system-wide, read-only files installed by (or provided by) the OS

## Command

w	Show who is logged in to the machine and what they are doing
wc	Counting rows, words, bytes
Split -l 2	Split files with 2 rows each
Head	Showing the first 10 lines of a file (-n 2 for last 2 lines etc)
Tail	Showing the last 10 lines of a file (-n 2 for last 2 lines etc)
Diff	Show differences
Sort	Sorting the output
nl	Numbering the lines in the output
ping <a href="https://www.google.com">google.com</a>   tee output.txt	Write the STDOUT to a file and also shows the STDOUT
Cut	
Set	Print all the environment variables
Uniq	Finding uniq file lines
jobs	Show all background tasks running in the current shell

Process:

## Processes (top)

Top	Load Average: 1 - 5 - 15 (minutes)
Shift M	Sort on Memory utilisation
Shift P	Sort on CPU utilisation
R (Renice value, Change priority of the process (-20 to 19)	Values -20 to 19
K (15: Quit), 9 Force Quit	Kill process
Nice -n 10 bash test.sh	Running the script in the bash terminal with nice level 10
Renice 15 -p 1949	Changing the nice value of the process 1949 (can find it through ps command)
Kill \	Kill a process (default: 15 TERM)
Kill -s Kill \	Kills a process
Kill -9 \	Force quit a process

## Find files

Locate  
Locate \  
Updatedb                      Updates the locate database  
Find /etc -name "motd"      Finding files with the motd included

## Pipe

>      Overwrite file  
>>     Appending to a file  
2>     Redirect all errors to a file (overwrite)  
2>>    Redirect all errors to a file (appending)  
&>     Redirect output and errors to a file (overwrite)  
&>>    Redirect output and errors to a file (apending)

## Grep

Grep <pattern> <filename>	Search for a keyword in a file
Grep -lr cron /etc	Search for patterns in all the files in a folder (including all subdirectories because of -r)

## Egrep (Extended Regular Expressions)

Egrep -I 'hello.*world' <filename>	-I : ignore case sensitive 'hello.*world': hello and world in it
Egrep -I 'hello world' <filename>	-I : ignore case sensitive 'hello.*world': hello or world in it
Egrep -v 'hello world' <filename>	-v: everything that does not contain hello or world in it

## Fgrep (Fixed, same as Grep -f)

## Grep

### Regular Expressions

\<keyword>\$ bijv: test\$ Matches end of the string  
^\<keyword> bijv: ^test Matches start of string and represents characters not in the string.  
[a-z ] Matches on the string

### Hardware

lsdev Showing all the devices installed on the system  
lsblk Showing all the block devices  
lspci Showing all the pci cards  
lsusb Showing all the usb devices

### Modules

lsmod Showing all the modules that are installed  
modinfo \ Showing info about a module  
insmod \ Install a module (can find it in /lib/modules)  
modprobe \ Install a module (can find it in /lib/modules) + all the dependencies  
modprobe -r \ Removes the module

### Sed (change words)

Sed 's/parttime/fulltime/' team Change every word from parttime to fulltime (s stands for substitution ofwel vervangen) (display it, not changing the original file)  
Sed '/fulltime/w fulltime.txt' team Write every line that has the word fulltime in it to a new file fulltime.txt (display it, not changing the original file)  
Sed '0,/parttime/s/parttime/promotion' team Change the first parttime with to promotion (display it, not changing the original file)  
Sed -i '0,/parttime/s/parttime/promotion' team Change the first parttime with to promotion (change it, changing the original file)

### Storage

Df -h Show info about the file system (total space and available space)  
Df -hT Show info about the file system (total space and available space) and the filesystem type  
Du Showing disk usage by directory  
lsstat Show disk statistics by partition  
lsblk Show current partitions sizes and mounting points  
fdisk -l Show all physical disk (MBR partition scheme (BIOS))  
fdisk -d Delete a partition (MBR partition scheme (BIOS))  
gdisk -l Show all physical disk (GPT partition scheme (UEFI))  
gdisk -d Delete a partition (GPT partition scheme (UEFI))

### LVM

Pvcreate Physical volume create  
Vgcreate Volumegroupe create  
Lvcreate Logical volume create  
lvmdiskcreate Show all the physical disks in the machine

### Mount

Mount -t ext4 /dev/sdb1 /media/usb Mounting device /dev/sdb1 to /media/usb  
/etc/fstab For automatic mounting drives when the system boots  
/etc/mtab Showing all the current mounted volumes

### UEFI

Efi System Partition Partition where UEFI stores the boot loader  
/boot/efi  
bcfg Interactive shell within UEFI for changing the boot configuration

### EXT

Ext2  
Ext3 (standard) Has journaling  
Ext4 Has journaling + bigger drive supports (up to 32TB drives)

### MKFS

Mkfs -t ext3 /dev/xvdf Make filesystem

## EXT

Mkfs -t ext3 /dev/xvdf -m 25 -c

-m: reserved space for a crash (default is 5%) -c: check if the blocks are good on the drive

## SWAP

dd if=/dev/zero of=/swap.swp bs=1024 count=800k Creating a swap file

Mkswap swap.swp

Make swapfile

Swapon swap.swp

Enable swapfile

Edit fstab file! /etc/fstab

Swapoff -a

Disables all swapfiles (based on fstab file)

## Terminal command line shortcuts

cntrl x + backspace

Delete everything what is before the cursor

cntrl a

Move back to the beginning of the line

cntrl e

Move to the end of the line

## TAR

-t Shows the full archive

## ZIP

Zip test.zip file1.txt Zipping a file

**Gzip** Open source zip file format

Tar -czvf -c = create -z = gzip -v = verbose (display each file name) -f = file

Tar -xzvf -x = extract -z = gzip -v = verbose (display each file name) -f = file

**Bzip2** Higher compression then Gzip

Tar -cjvf -c = create -j = bzip2 -v = verbose (display each file name) -f = file

Tar -xjvf -x = extract -j = bzip2 -v = verbose (display each file name) -f = file

**Xz** Highest compression but slower

tar -cjvf -c = create -J = XZ -v = verbose (display each file name) -f = file

Tar -xjvf -x = extract -J = XZ -v = verbose (display each file name) -f = file

## Hardlink / Symbolic link

Ln [filename] [hardlink] Creating a hardlink

Ln -s [filename] [symbolic link] Creating a softlink / symbolic link

## Services

SysV /etc/init.d

/etc/inittab SysV uses this configfile

Systemd /usr/lib/systemd/

/usr/lib/systemd/system/ Systemd uses this folder

/usr/lib/systemd/system/default.target e

Systemctl get-default Show what your default target is

stat /proc/1/exe Check if you are running SysV or Systems

systemctl list-unit-files Showing witch services are started when the system boots

systemctl | grep running Showing witch services are currently running on the machine

## Tune2fs

tune2fs -i 200 /dev/sda1 Changing the interval in when the filesystem needs to be checked (ext2, ext3 and ext4) if you apply a 0 there will be no checks

## Pgrep

## Ps + grep command

Pgrep -u root Showing all the process that are runned by root

Pgrep -U \ Showing all the process that are runned by a specific user, to show which UID a user has: id

## /lib/systemd/system

## Folder where systemd stores the unit configurations

.service .mount .device. .socket Unit files fore systemd

Systemctl daemon-reload Reload the systemctl daemon if there are any changes

/sys/bus/usb/devices Folder where usb information has been stored

/etc/udev/rules.d Location where udev rules are stored

Fsck Check filesystem if there are no bad sectors etc.

/etc/init.d Scripts for starting and stopping services for SysV

Systemd-delta Show overwritten config files

## Upstart

Initctl reload Reloading the configfiles for upstart

## Upstart

Initctl list      Showing all the running upstart scripts

## /proc/mdstat Information about RAID configs

## LPIC 102-500

### X.Org / X11 (window manager)

### Client / server model

X11 = communication protocol

[x.org](#) display server

/etc/X11/xorg.conf

Config file for X11

/etc/X11/xorg.conf.d

Config directory for X11

xhost +

Disable Access control

xhost -

Enable Access Control

Xhost +10.10.10.190

Adding a client to the access control list

Export DISPLAY="10.10.10.12:0.0"

Exporting the display to the client 10.10.10.12

Xwininfo

Getting information about a window that is currently open

xdpyinfo

Showing information about the display

### Wayland (window manager)

Replacement for [x.org](#)

## XDMCP (X Display Manager Control Protocol)

## Manage graphical login process

KDM

KDE Desktop manager (Display Manager)

GDM

GNOME Desktop manager (Display Manager)

LightDM

Light display manager

brltty

Braille deamon for displaying Braille to the screen

## Remote Desktop Software

VNC

Virtual Network Computing Not secure Only mouse movements en keystrokes Uses RFB protocol (Remote Framebuffer)

Vncviewer

Connecting to a server and getting a remote connection

Xrdp

Uses RDP (Remote Desktop Protocol) encrypted (TLS) /etc/xrdp/xrdp.ini

NX

Builed on the X window system

Spice

Open source Virtual machines

## Localization

## Adapting to a place (locale)

ASCII 7 Bits (English Language)

ISO-8859 Group of standards 8 Bt character set

UNICODE 3 byte code (every character in the world) First 128 are the same as ASCII First 256 are based on 8859-1 standard

UTF 1-byte (UTF-8) 2-byte (UTF-16) A subform of unicode

iconv Converts character setter

## Locale

Locale Show locale settings (character sets)

Export LV\_MONETARY=en\_GB.UTF-8 Changing individual settings

Localctl Viewing locale settings

Localctl set-locale LANG=en\_GB.utf8

## Date / time

Date Showing the current date / time

Sudo mv /etc/localtime /etc/localtime.bak Removing the original timezone

Sudo ln -s /usr/share/zoneinfo/US/Pacific /etc/localtime Creating a symlink to the current time

hwclock Changing the hardware clock in the BIOS

Hwclock --hctosys Synch hardware clock from the system clock

Hwclock --systohc Synch system clock from the hardware clock

Date +"%A, %B %d %Y" Changing the date /time to Day, Month, numeric day and year

Timedatectl Showing all the information including hardware clock (RTC)

Timedatectl set-time "2018-08-02 06:15:00" Setting the time

Tzconfig (old) -> dpkg-reconfigure tzdata (in ubuntu) Change Timezone (gui based)

## CUPS

## Common Unix Printing System (port 631, port for IPP)

lpc Start : start printing Stop: stop printing Enable: enable the print queue Disable: disable the print queue Up: enable + start Down: Disable + stop Abort: stop spooling and disables printing

## CUPS

## Common Unix Printing System (port 631, port for IPP)

Lpq Printing the print queue  
Lpq -P \ Showing the queue of a particular printer  
Lpr Submit a new print job  
Lprm Remove a print job from the queue (for root everything, for a user all its own jobs)  
Cancel Cancel a print request

### User creation/ Group creation etc.

/etc/login.defs Changing global variables such as password age etc.  
/etc/skel When a user is created files from this folder will be copied to the user folder  
/etc/passwd Stores general user info: **Username**: It is used when user logs in. It should be between 1 and 32 characters in length. **Password**: An x character indicates that encrypted password is stored in /etc/shadow file. Please note that you need to use the passwd command to compute the hash of a password typed at the CLI or to store/update the hash of the password in /etc/shadow file. **User ID (UID)**: Each user must be assigned a user ID (UID). UID 0 (zero) is reserved for root and UIDs 1-99 are reserved for other predefined accounts. Further UID 100-999 are reserved by system for administrative and system accounts/groups. **Group ID (GID)**: The primary group ID (stored in /etc/group file) **User ID Info**: The comment field. It allows you to add extra information about the users such as user's full name, phone number etc. This field is used by finger command. **Home directory**: The absolute path to the directory the user will be in when they log in. If this directory does not exist then user's directory becomes / **Command/shell**: The absolute path of a command or shell (/bin/bash). Typically, this is a shell. Please note that it does not have to be a shell. For example, sysadmin can use the nologin shell, which acts as a replacement shell for the user accounts. If shell set to /sbin/nologin and the user tries to log in to the Linux system directly, the /sbin/nologin shell closes the connection.

/etc/shadow **Username** : It is your login name. **Password** : It is your encrypted password. **Last password change (lastchanged)** : Days since Jan 1, 1970 that password was last changed **Minimum** : The minimum number of days required between password changes i.e. the number of days left before the user is allowed to change his/her password **Maximum** : The maximum number of days the password is valid (after that user is forced to change his/her password) **Warn** : The number of days before password is to expire that user is warned that his/her password must be changed **Inactive** : The number of days after password expires that account is disabled **Expire** : days since Jan 1, 1970 that account is disabled i.e. an absolute date specifying when the login may no longer be used.

/etc/group Group name Encrypted password for the group, if "x" -> /etc/gshadow has the password Group id Comma separated list of all the users

/etc/gshadow Group name Encrypted password for the group Group administrator Comma separated list of all the users

Useradd -D Show the default parameters that are used when useradd command has been used

**Getent** Searching for a term in an administrative database

Getent passwd root Showing info about a user in the passwd file

Getent shadow root Showing info about a user in the shadow file

Passwd \<username> Creating a password for a user

Passwd -d \<username> Deleting a user password

Passwd -l \<username> Lock a user

Passwd -e \<username> Change password as expired

Passwd -S \<username> Showing the status of the password

chage -l \<username> Showing a user's password status, human readable (better than passwd -S)

chage \<username> Changing account password settings

Usermod -L \<username> Lock a user

Usermod -U \<username> Unlock a user

Usermod -d \<username> Change the default home directory (with -m : move the current directory of that user)

Userdel -r Deleting a user including all the files (home folder)

**Groups**

Groups \<username> Showing where a user is member of

Groupadd \ Adding a group

/etc/gshadow File where group passwords are stored

Groupmod \ Modify a group

Groupdel \ Deleting a group

Newgrp Changing from a group in the current shell

Gpasswd Change a group password

chfn Change personal information (5th field /etc/passwd)

## Mail

MTA (mail transfer agent)	Sending and receiving mail from or to outside
MDA (mail delivery agent)	Delivers the mail to the users mailbox
MUA (mail user agent)	Interface for the user to display the mailbox

## MTA

sendmail	Oldest MTA, not great security
Postfix	Newer and better security
Exim	

## MDA

Mail	The default MDA in linux (/bin/mail or /usr/bin/mail) Mail is stored in /var/spool/mail
Procmail	A MDA
Maldrop	A MDA
Cyrus	A MDA
Mail -s "This is a message"	Sending a mail with a subject name
Enter + Ctrl + D	Closing a message (EOT comes in the screen)
Mail	Reading mail in linux
mailq	Showing the mail queue
Sendmail -bp	Showing the mail queue

/etc/aliases	Location where you can add a alias of user
newalias	Command to update the /etc/aliases.db
.forward	Place this file in the \$HOME directory of the user where the username has been specified that needs to get the forwarding emails (644 rights) (there can be multiple addresses in this file)

## Syslog / Logging

Rsyslogd	/etc/rsyslogd.conf and /etc/rsyslog.d directory
Rsyslog	Facility -> level -> action ofwel facility.level action <b>Facility:</b> Type of application / service <b>Level:</b> Debug, informational etc.
*. * @192.168.10.254:514	Append this to /etc/rsyslog.conf to enable remote logging
Logrotate	Archiving logs based ont the /etc/logrotate.conf
Systems-cat	Creating manual log entries in the syslog (alternative for logger)
logger	Creating manual log entries in the syslog
DINWECAP (7: debug, 6: infom, 5: notice 4: warning, 3: error, 2: critical, 1: alert, 0: panic)	Syslog levels
Journalctl	/var/log/journal stores the files
Journalctl -f	The same as tail -f
Journalctl -u	Show logging a systemd process
Journalctl -r	Show all the newest messages (on the top) r stands for reverse
Journalctl -e	Show the end of the journal

## Port 514

## NTP

ntpstat	Viewing the software time synchronisation
Ntpq -p	Showing from which servers the ntp server is pulling its information from
Ntpdq	To get information about ntpd
/etc/ntp.conf <b>NOT NTPD.conf !!</b>	Config file for ntpd
<b>Chrony</b>	Chrony is better and newer then ntpd
chronyc sources -v	Showing from which servers the ntp server is pulling its information from
chronyc sourcestats	Viewing timeservers
chronyc tracking	Viewing software clock
/etc/chrony.conf	Config file for crony
Allow in /etc/chrony/chrony.conf	Allow NTP client access from local network.
iburst	Change the time for chrony to update it's clock
Drift	The frequency offset between the system clock at its nominal frequency and the frequency required to remain in sync with UTC

## Ntpd and Chrony

## Networking

nmtui	
nmcli con add type ethernet con-name eth1 inflame enp0s3 ipv4 10.0.2.10/24 gw4 192.168.1.254	Setting you IP address with the nmcli command
nmcli device wifi connect \ password \	Connecting to a wireless network with NMCLI
Nmcli con up \	Enable a new connection with NMCLI
nmcli radio	Show if there is a Wifi module active
nmcli device wifi list	Show all the available networks

## Networking

Ip Route	Show default routes on your local host
ethtool \	Display ethernet settings
Ifconfig (legacy)	Display ip address of set ip address
iwconfig \ essid "wlan name" key s:password	Setting SSID for wireless interface
iwlist \ scan	Scanning for all the wlan SSID's
Ip address	Showing all the ip addresses for the interfaces
netplan	Configure networking for Ubuntu
/etc/sysconfig/network-scripts	Config location for Red Hat systems
Route add default gw 192.168.0.254	Set a default gateway on a host
Ip neighbour show / arp -a	Show the ARP table
/etc/resolv.conf	Dns resolver search localdomain (for fqdn) nameserver 192.168.82.2 (dns server)
/etc/nsswitch.conf	Config file that has been used to get the correct order in witch a dns server needs to search

### DHCP

Dhcpd	Dhcp client
Dhclient	Dhcp client
Pump	Dhcp client

### Bonding NIC's

### For load balancing, aggregation or active/pasive

modprobe bonding	Creating a bon0 interface
Ip link add bon0 type bond mode	Creating a bond (there are different kind of modes)
Sudo ip link set eth0 master bond0	Adding interface to a bond
Sudo ip link set eth1 master bond0	Adding interface to a bond

### Troubleshooting

Ping 1.1.1.1	
Ping6 fe80::c418:2ed0:aead:cbce%enp0s3	When sending out packages of a link local address you must specify the outgoing interface!
Tracepath 1.1.1.1	Tracing routes
Host <a href="http://www.google.com">www.google.com</a>	Testing a DNS name (output: ip addresses that are asociated with that IP address)
Dig \	Getting all the DNS addresses
Dig -t mx \	Search for the type MX in the domain name
Nslookup	
Getent hosts	Looking up all the hosts in the /etc/hosts file
Netstat	Showing all the current open network connections
Netstat -t	TCP connections
Netstat -u	UDP connections
Netstat -l	Showing which application are listening on which port
Netstat -s	Showing statistics for different kind of messages
Ss -anpt	Showing which system process are using which network sockets (currently)
Nc	Netcat utility (reading and writing to or from a network port)
Route del default or ip route del default	Removing the default route (gateway)

### W and Who

W	Better then who (updated version) where you can see who is logged in
Who	See who is logged in
Last	Showing who is last logged in
ulimit	Limit the user resources they can use
Softlimit	
Hardlimit	

### Cronjob

### Runs a command regularly and repeatedly at a given time

Crontab -l	Show all the cronjobs from the current user
Crontab -e	
Minute - hour - day of the month - month - day of the week	
/etc/cron.allow	If the /etc/cron.allow file exists, then you must be listed (one user per line) therein in order to be allowed to use this command.
/etc/cron.deny	If the /etc/cron.allow file does not exist but the /etc/cron.deny file does exist, then you must not be listed in the /etc/cron.deny file in order to use this command.
	If both files exist then /etc/cron.allow takes precedence. Which means that /etc/cron.deny is not considered and your user must be listed in /etc/cron.allow in order to be able to use the crontab.
/var/spool/cron	User specific cron jobs are stored here
	Minutes 0-59 Hours 0-23 Days of month 0-31 Months 1-12 Days of week 0-7 command with options and parameters



## At Runs commands once at a given time

Atq or at -l Showing all the jobs at jobs  
Atrm Delete a job  
At -d Delete a job  
Cntrl-D Enter at the end of the list of the At commands  
/etc/at.allow Allow users to use At  
/etc/at.deny Deny users to use at

## TCP wrapper TCP wrappers reference the hosts.allow and hosts.deny to grant a ip to the server

/etc/hosts.allow  
/etc/hosts.deny

TCP wrapper takes effect immediately, you don't have to restart any service!

## Seq

seq 1 2 9 Printing 1 to 9 with a step of 2  
Seq 3 8 Printing 3 to 8  
Seq 8 Printing 1 to 8

## Shell Configfiles

/etc/profile	System wide config files Will be read first in the login process Initial environment variables Initial PATH statement
~/.bash_profile	additional PATH statements (e. g. HOME directory) default editor user specific environment variables
~/.bash_login	
~/.profile	Environment variables Environment variables
/etc/bash.bashrc	System wide config files Will be read after starting a shell System wide settings Aliases Functions
~/.bashrc	Bash aliases Favorite editor Setting the bash prompt
~/.bash_profile (first read after /etc/profile) - ~/.bash_login - ~/.profile - ~/.bashrc - ~/.bash_logout	User specific config files

chsh -s /bin/false \

Change shell to /bin/false for a user so that a user can not login!

## Concatenate commands

;	Both will run (doesn't matter if one command will fail)
&&	Second command will only run if the first one will succeed
	The first command will be run, the second one only if the first command failed.

## Bin and/sbin

/usr/bin scripts which should be accessible system wide  
/usr/sbin script with administrative functions which should not be accessible for normal users

## Superdaemons

Intetd  
Xinetd (x)inetd listens on configured ports. Should a connection be established, xinetd will start the corresponding service and hands over control to it.

## BASH scripting

### Executing scripts

Source myscript.sh Runs the script in the current shell (environment variable will be available in the shell)  
./myscripts.sh Runs the script in a different shell, after the script is done the environment variables aren't available anymore  
\$0 Name of the script itself when executed in a script  
\$1, \$2 etc. Arguments that you can pass into a script  
\$? Display the error level  
\$# the number of parameters with which the script has been called  
\$\$ The PID number of the current running shell

### Relational Operators

-f If a file exist  
-d If a directory exist

## SSH

Ssh -l \ Connecting to a remote ssh server with GUI / Terminal Gun  
Ssh -X \  
ssh-add -l List all the keys from the agent  
Ssh-add -D Delete all the keys from the SSH Agent  
Scp test.txt 192.168.0.1:/etc/home/test.txt Copying a file from localhost to a remote server

## SSH

Ssh-keygen

~/.ssh/authorized\_keys

Location where it stores it authorised keys

### **Lsof**      **List open files**

lsof      List all the opened files

lsof -u \ List all the opened files by a user