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## About this guide

This free Linux commands guide lists all the Linux server commands needed to configure, Install and Administer Linux servers.

Using this guide you will learn how to create users, change password, manage directories, view logs, monitor server performance, setup proxy server and many more.

## Users

add user to root group - The easiest way in my experience is to simply open /etc/group with vi, nano and add the user to the wheel group like so:

```
wheel::10:root,username
```

## Change \ Reset password:

*passwd username*

## Software Update

apt-get install sysvconfig - service command utility

apt-get install proftpd - install application

## O/S Server upgrade and update

sudo apt-get install update-manager-core

sudo do-release-upgrade

apt-get update - update repository listing

apt-get upgrade – upgrade software

apt-get install foo – upgrade just one software called foo

## Services

/etc/init.d/servicename action --- restart , stop , start

## Squid

tail -f /var/log/squid/access.log --- view Squid logs

## Cron jobs

ps aux | grep crond - check jobs

## Nagios files

usr/local/nagios/etc/objects ----host files

## Downloads

apt-get install packagename  
wget path\_to\_download\_file

## Performance

Top – show all process  
Free –show free memory  
iostat -- I\O monitoring  
ps -ef - check running proccess  
ps - check proccess  
mpstat 1 - display processors related statistics  
vmstat 2 - display virtual memory statistics  
iostat 2 - display I/O statistics (2 s intervals)  
df -h - - show disk space  
tail /var/log/messages - show messages

## Working with VI text files

To search for a file in a VI file we use \searchtem  
n to go next and N to go back

## Navigation

cd dir - go to directory  
cd - go to home directory  
cd ~*user\_name* - go to a specific user name directory  
ls - show files  
ls -a - show hidden files  
diff - compare two files to see what changed  
cd / - go to top directory

## File system Commands

cp source destanation- copy

cp /root/testdir/test.txt /root/testdir2/  
move / rename  
mv *source destination* - move or rename files  
file filename - tells you what is the file type  
ln - create link  
touch - create empty file

## Copy Backup Folder

cp -r /usr/local/nagios/\* ~/backup/nagios14jan/

## Directories

mkdir - create directory  
rmdir - delete dir  
ls - view content in directory  
cd directory - change directory

## delete files and dir

rm -r *files* - folder and files all in one command

## Help commands

info command - new help command  
man command ----- show help  
command name -- help -same as man  
man -k user - if you dont remember the command use -k and man will look for it

## View file

less *filename* | more  
cat filename - dump the file to the screen or combine 2 files to 1 file.  
tail -f filename - print the default last 10 lines of a file all the time  
more - view file

## Search/ Find files

grep name- search for a string in a specific file  
find / -name "filename" - find file  
find / -name "httpd.conf" - find example  
find / -name "www" -- find folder  
head - prints top 10 lines of specific file

## Run Programs

./programname -- run setup file or script , example ./install.sh

## Shut down / Restart

shutdown -h now - shut down the server  
reboot - reboot the server

## File compression

tar -xvf filename.tar Untar a tarred but uncompressed tarball (\*.tar).  
tar xvfz

## Process control

ps - Print running process  
kill pid - kill process id  
killall procces\_name - kill the proccess

## Users and Groups

last - show all users logged to system since /var/log/wtmp file was created  
finger - see information about system's users

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`adduser user_name` - Create a new account ,The user home directory is `/home/user_name`.  
`useradd user_name` - The same as the command " `adduser user_name` ".  
`userdel user_name` - Remove an account (you must be a root).  
`groupadd group_name` - Create a new group on your system.  
`passwd` - Change the password on your current account., you can change the password for any user using: `passwd user_name`  
`group` - show to which group the user belong to  
to see users check the file `passwd` at `/etc/passwd`  
`/etc/passwd` - this is where the users accounts information is stored  
`/etc/group` - this is where all the groups information is stored.

`useradd [-D] [-g`

`default_group] [-b default_home] [-s default_shell]`  
`usermod` - modify users account settings.

## Networking commands

`ifconfig` - check ip config info  
`route -n` - Show the kernel routing table  
  
`netstat` - displays network connections,  
`route` - display network routes  
`route [options] add [-net|-host] target [options]` - add route  
`route [options] del [-net|-host] target [options]` - delete route  
`ftp [options] host` - connect to an ftp server  
`traceroute` - trace route  
`kssh` - connect to server

## DNS

`/etc/resolv.conf` - this is where we configure the DNS server

## Time zone setup

dpkg-reconfigure tzdata

## set date

date 121710452006

## Set NTP server

ntpdate 192.168.100.1

## Logs

/var/log - this is where all logs are kept  
/var/log/messages - very important to check  
tail -n 500 /var/log/messages - Last 500 kernel/syslog messages  
tail /var/log/warn - System warnings messages see syslog.conf  
/var/log/message: General message and system related stuff  
/var/log/auth.log: Authentication logs  
/var/log/kern.log: Kernel logs  
/var/log/cron.log: Crond logs (cron job)  
/var/log/maillog: Mail server logs  
/var/log/qmail/ : Qmail log directory (more files inside this directory)  
/var/log/httpd/: Apache access and error logs directory  
/var/log/lighttpd: Lighttpd access and error logs directory  
/var/log/boot.log : System boot log  
/var/log/mysqld.log: MySQL database server log file  
/var/log/secure: Authentication log  
/var/log/utmp or /var/log/wtmp : Login records file  
/var/log/yum.log: Yum log files

## System information

/proc - this folder provide system information  
cat /proc/cpuinfo # CPU model  
cat /proc/meminfo # Hardware memory  
grep MemTotal /proc/meminfo # Display the physical memory  
watch -n1 'cat /proc/interrupts' # Watch changeable interrupts continuously  
free -m # Used and free memory (-m for MB)



cat /proc/devices # Configured devices  
lspci -tv # Show PCI devices  
lsusb -tv # Show USB devices  
lshal # Show a list of all devices with their properties  
dmidecode # Show DMI/SMBIOS: hw info from the BIOS  
cat /etc/fstab - show file system information and devices

### Permissions

chmod - changes access mode to files  
chown - changes the owner of file or files  
chown -R results  
Example - chmod 777 ROOT  
chgrp - change the group settings of the file  
Exapmle - chgrp -R apache

ls -l - this command would list each of the files in the current directory and the files permissions  
ls -la - show owners information

### Hard Disk \ Free Space

df - show HDD free space status  
fdisk - allow us to change partition  
fsck - check and repair filesystem  
mkswap - create swap file  
fuser -mu /foldername - check who is using the file system  
hdpram - show hdd information

### Printers

lpc - control printing jobs sent to the printer

### Scripts

- 1.create a file with the script
- 2.save it as .sh and after run this command --- chmod +x scriptname
- 3.run script: ./scriptname

we can also use: `chmod 750 scriptname`

## Mounting

`mount [-t fstype] [-o options] device dir` - mount device or file system  
`mount server:/path` - mount nfs folder

## Folders Layout

`/` - root file system  
`/bin` - contains binaries  
`/boot` - contain all files requires to boot the system  
`/dev` - devices folder  
`/etc` - contains configuration files of the host  
`/home` - contains users home directories  
`/lib` - contains shared directories needed for system boot  
`/mnt` - contains mount point for storage devices  
`/opt` - contains data for software packages  
`/proc` - contains proccess and kernal information , also contains directory for each proccess currently runnig  
`/root` - root user directory  
`/sbin` - The `/sbin` directory originally contained only static binariesThe `/sbin` directory originally contained only static binaries  
`/tmp` - The `/tmp` directory is used whenever a program needs to write a The `/tmp` directory is used whenever a program needs to write a file that will be removed when the program is terminated.  
`/var` - The `/var` directory contains variable data files like logs, lock files,and process–specific data files.  
`/usr` - The `/usr` directory stores shareable read–only data. The `/usr` directory stores shareable read–only data. The `/var` directory contains variable data files like logs, lock files,and process–specific data files.  
`/usr` - The `/usr` directory stores shareable read–only data. The `/usr` directory stores shareable read–only data.

## Backup

`mt` - tape operation utility  
`tar cvplf /dev/st0 /etc /home /usr/local /var` - back up example

## Networking

ifconfig interface options - interface commands  
ifconfig eth0 - gives information about the interface  
route add 0.0.0.0 gw 192.168.203.1 - add route to routing table  
route - n - show routing table

## DNS

/etc/resolv.conf - this is the file where where linux stores dns information  
(nameserver 192.168.203.1)

## Cron

/etc/crontab - cron file config

## Examples

\* /5 \* \* \* \* /home/adam/script.sh will execute *script.sh* every 5 minutes.  
This will set crontab every 5 minutes.  
59 23 \* \* 1-5 /home/adam/script.sh will execute *script.sh* every day,  
monday through friday, at 11:59 p.m.  
0 0 \* \* 0 /home/adam/script.sh will execute *script.sh* once a week. You  
could also specify @weekly instead of 0 0 \* \* 0.

```
01 * * * * root echo "This command is run at one min past every hour"
17 8 * * * root echo "This command is run daily at 8:17 am"
17 20 * * * root echo "This command is run daily at 8:17 pm"
00 4 * * 0 root echo "This command is run at 4 am every Sunday"
* 4 * * Sun root echo "So is this"
42 4 1 * * root echo "This command is run 4:42 am every 1st of the month"
01 * 19 07 * root echo "This command is run hourly on the 19th of July"
```

## FTP

apt-get install proftpd - install  
/etc/ftpusers - list users not allowed to access FTP server  
/etc/proftpd/proftpd.conf - this is the main proftpd config file location  
DefaultRoot ~ - add this line to the config file and state where you want the users to land when login to server (~ will send them to home directory)

## Mysql Commands

mysql -u root -p - check if mysql server is running  
show databases; - this command shows us the databases installed  
\*To allow remote server access using MySQL administrator we need to edit the /etc/mysql/my.cnf config file and add the this entry  
bind-address =127.0.0.1  
bind-address =10.60.1.151 # this is your pc ip.

## Apache2 Webserver Groups

user www-data - apache2 user  
Group www-data - apache2 group

## Apt-Get Proxy update setup

Edit this  
nano /etc/apt/apt.conf

Type this url:  
Acquire::http::Proxy "http://172.31.130.58:3128/";

### Set proxy for browsing:

```
export http_proxy='http://192.168.0.1:3128/'
```

To setup for all users:

```
vi /etc/profile
```

```
export http_proxy=http://proxy-server.mycorp.com:3128/
```

to view

```
echo $http_proxy
```