- 3. 4. Monitoring and Administration -

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- 3. 4. 1. Commands -

In order to read the manual of a particular command with all the options, do the following:

`man` *command*

1 – SYSTEM INFORMATION

```
# Displays Linux system information
uname -a

# Displays kernel release information
uname -r

# Shows how long the system has been running + load
uptime

# Shows system host name
hostname

# Displays the IP addresses of the host
hostname -I

# Shows system reboot history
```

```
last reboot

# Shows the current date and time
date

# Shows this month's calendar
cal
```

2 – HARDWARE INFORMATION

```
# Displays CPU information
cat /proc/cpuinfo

# Displays memory information
cat /proc/meminfo

# Displays free and used memory ( -h for human readable, -m for
MB, -g for GB.)
free -h

# Shows info about disk sda
sudo hdparm -i /dev/sda
```

3 – PROCESS MANAGEMENT

```
# Displays your currently running processes
ps

# Displays all the currently running processes on the system
ps -ef

# Displays process information for processname
ps -ef | grep processname


# Shows the currently running processes as a tree

pstree


# Displays and manage the top processes
top
```

```
# Interactive process viewer (top alternative)
sudo apt install htop

htop

# Kills process with process ID of pid
kill pid



# Forces the killing of a process with process ID of pid

kill -9 pid

# Kills all processes named processname
killall processname
```

4 – NETWORKING

```
# Displays all network interfaces and ip address
ifconfig -a

# Displays eth0 address and details
ifconfig eth0

# Queries or controls network driver and hardware settings
ethtool eth0

# Sends ICMP echo request to host
ping host

# Displays whois information for domain
sudo apt install whois

whois domain

# Displays DNS information for domain
dig domain

# Reverse lookup of IP_ADDRESS
dig -x IP_ADDRESS

# Displays DNS ip address for domain
host domain

# Displays all local ip addresses
hostname -I
```

5 – SSH LOGINS

SSH works as a client/server protocol.

Firstly, to install the SSH server side on your Ubuntu machine, you should do the following:

```
sudo apt install ssh
```

After that, you can connect to the SSH server from another Ubuntu machine:

```
# Connects to host as your local username
ssh host

# Connects to host as user
ssh user@host

# Connects to host using port
ssh -p port user@host
```

6 – DISK USAGE

```
# Checks filesystem usage
df


# Shows free and used space on mounted filesystems
df -h



# Displays disks partitions sizes and types

sudo fdisk -l

# Gives information about how much disk space each file in the
current directory uses
du

# Displays disk usage for all files and directories in human
readable format

du -ah
```

```
# Displays total disk usage off the current directory
du -sh

# Displays all mounted partitions
mount

# This example will mount the second partition of a HDD (hard disk drive)
mount /dev/sda2 /media/PHOTOS

# This example will unmount the second partition of a HDD (by referring to the physical disk partition):
umount /dev/sda2
```

- 3. 4. 2. GUI -

Besides the commands we have seen before, you can use some GUI programs like the following.

gnome-system-monitor

It provides a graphical enviroment to check the use of the system resources.

sudo apt install gparted

gparted

It provides a graphical enviroment to check and to manage hard drives and partitions.

- 3. 4. 3. Remote administration -

1. Remote desktop

We are going to learn how to remotely access Ubuntu desktop from other Linux machines.

Before one can access Ubuntu desktops remotely, one must enable remote access on the Ubuntu machine.

Remote access allows any with the appropriate access to the system connect and manage the device remotely from across the room or from locations around the world.

To enable remote access to Ubuntu, continue with the steps below:

STEP 1: ENABLE REMOTE ACCESS TO UBUNTU

Open the Activities overview and start typing Settings.

Click on Settings.

Click on Sharing in the sidebar to open the panel.

If the Sharing switch at the top-right of the window is set to off, switch it to on.

Select Screen Sharing.

To let others view your desktop, switch the Screen Sharing switch to on.

This means that other people will be able to attempt to connect to your computer and view what's on your screen.

To let others interact with your desktop, ensure that Allow connections to control the screen is checked.

This may allow the other person to move your mouse, run applications, and browse files on your computer, depending on the security settings which you are currently using.

STEP 2: CONNECTING TO UBUNTU

Now that Desktop Sharing is enabled, choose the remote access client to use to access the desktop.

To connect form another Ubuntu system, search for **Remmina Remote Desktop Client**.

This is an opensource client that is probably installed on all Linux systems.

Use it to connect to other Ubuntu desktop remotely:

VNC -> **hostname**.local

2. Web remote administration

You can remotely manage your Ubuntu machine using a web app named "Webmin".

In order to install "Webmin", you have to go to:

http://webmin.com -> Downloads -> Debian package.

After downloading the "Webmin" Debian package, you have to install it.

When you have installed "Webmin" in your Ubuntu machine, you can access remotely via web from other machine (Ubuntu or Windows) opening a web browser and accessing the following URL:

https://Ubuntu-IP-Address:10000

- Exercises -

You are going to create a new Google Document inside the "3. Linux" folder of your Google Drive, named:

"3. 4. Monitoring and Administration - Apellidos, Nombre"

being "Apellidos, Nombre" your Last Name and Name.

Share this Google Document with the teacher (jorge@iesdoctorbalmis.com) with "Edit" permissions.

Inside this Google Document you are going to copy and answer all the "Exercises" of this sub-unit.

1. How can you see all the currently running processes on the system?
2. How can you display the process information for a program or process named "firefox"?
3. How can you see the currently running processes as a tree?
4. Imagine that you have Firefox opened and that the Firefox process has a process ID of 3378. How can you force the killing of the Firefox process?
5. How can you see all the network interfaces and IP addresses?
6. How can you connect remotely to another host named "linux-dam" as the user "student"?
7. How can you see the free and used space on the mounted filesystems?
8. How can you mount the second partition of a hard disk drive (/sda2) into the directory /media/hdd2 ?
9. Which app provides a graphical enviroment to check the use of the system resources?
10. Which app provides a graphical enviroment to check and to manage hard drives and partitions?
11. Can you manage remotely Ubuntu using Remote Desktop? How?