

1- Operating System Requirements [3 marks]

Create a table and fill it with the minimum and recommended requirements of the following Operating Systems.

Windows (32-bit and 64-bit)

Windows Server 2012 R2, 2019

Ubuntu Desktop 20.04 LTS. What do the numbers that appear next to the Ubuntu version refer to? And the acronym LTS?

Ubuntu Server 20.04

The latest version of LUbuntu

The latest version of MacOS

Any other OS you like.

	W. 10 32/64	W. Server	U.Desk	U.Serve r	L.Ubunt u	MacOS	Fedora
Process.	1GHz	1.4 GHz 64 bit	2GHz Dual Core	1GHz	Single Core Pentium 4	Imac 2014 or later. Macboo k 2015 or later	2GHz Dual Core Process ors
RAM	1GB/ 32bits 2GB/ 64bits	512MB/ 2GB Desktop Experi.	4GB	512MB	1GB	4GB	2GB
HDD	32GB	32GB	25GB	2.5GB	2GB	35.5GB	20GB
GPU	DX 9 WDDM 1.0 Driver						
Display	800 x 600	1024 x 768	1024 x 768	1024 x 768	1024 x 768	640 x 480	800 x 600
Internet	Needed	Ethernet cable 1GB/sec	Neede d	Needed	Needed	Needed	Needed

2- File systems [2 marks]

Make a table with the main features of the following file systems. Do not forget to indicate which OS they are used for:

FAT32

extFAT

NTFS

ext4

HFS+

Features	FAT32	exFAT	NTFS	ext4	HFS+
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Max Partition Size	4GiB -1	16 EiB	16 TiB	16TB	8 EiB
Max Number of Archives	268.173.300	2.796.202	4.294.967.295 $2^{32} - 1$	4×10^9	69.254.365.666
Max Volume Size	10TiB	64ZiB	256 TiB	1024 PiB	8 EiB
Date Limit	1 January 1980 - 31 December 2107	1 January 1980 - 31 December 2107	1 January 1601 - 28 May 60056	14 December 1901 - 25 April 2514	1 January 1904 - 6 February 2040

3- Partition Managers [3 marks]

Insert a flash drive/external hard drive into the computer.

On Linux run “Gparted”, take a screenshot of the partitions for each device and explain the information that appears.

***Without external hdd:**

The screenshot shows the GParted application window titled "/dev/sda - GParted". The interface includes a menu bar (GParted, Edit, View, Device, Partition, Help) and a toolbar with icons for creating, deleting, moving, copying, pasting, and committing changes. A dropdown menu on the right shows the selected device: "/dev/sda (30.00 GiB)".

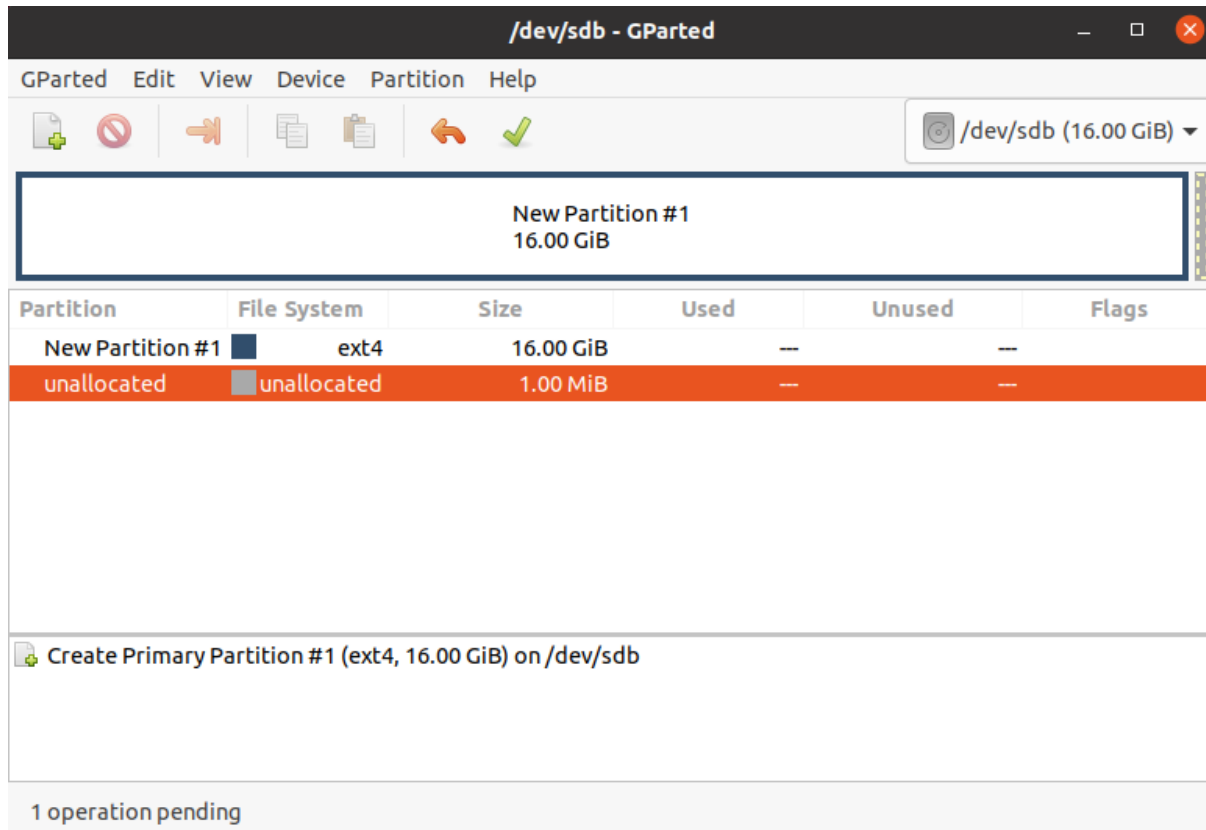
Below the toolbar, a visual representation of the disk layout is shown. A yellow bar represents the /dev/sda5 partition, which is 29.50 GiB in size.

The main part of the window displays a table of partitions:

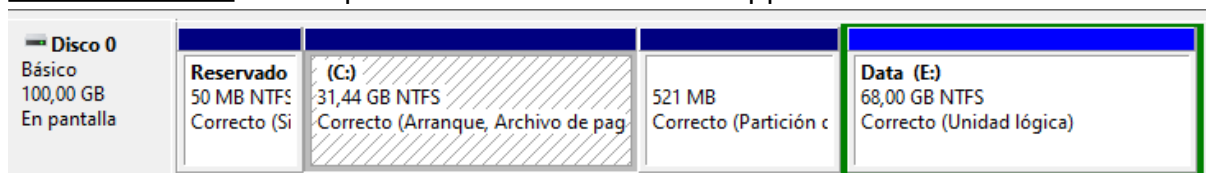
Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/sda1	fat32	/boot/efi	512.00 MiB	1.02 MiB	510.98 MiB	boot
▼ /dev/sda2	extended		29.50 GiB	—	—	
/dev/sda5	ext4	/	29.50 GiB	9.56 GiB	19.93 GiB	
unallocated	unallocated		1.00 MiB	—	—	

At the bottom of the window, it states "0 operations pending".

***With an external usb connected:**



On Windows, for the tool "Disk Manager", take a snapshot of the partitions for each device and explain the information that appears.



*There are 50MB reserved for the system itself.

31.44GB is the main partition in NTFS format, which contains Windows 10 OS + all the files including the boot ones.

*521MB of a minor partition that is related to:

*68GB of the Data partition in NTFS too, which will contain any extra files that are not related to the OS, such as downloads from the internet, other programs installed...



*The usb will only contain 1 main partition of 16GB which match the maximum capacity of the drive completely empty.

Take a screenshot of your home computer partitions and explain the information that appears.

Volume	Layout	Type	File System	Status	Capacity	Free Spa...	% Free	
(C:)	Simple	Basic	NTFS	Healthy (B...	930.97 GB	661.28 GB	71 %	
(Disk 0 partition 2)	Simple	Basic		Healthy (R...	505 MB	505 MB	100 %	
(Disk 2 partition 3)	Simple	Basic		Healthy (R...	505 MB	505 MB	100 %	
Crucial MX300 (F:)	Simple	Basic	NTFS	Healthy (P...	255.68 GB	227.20 GB	89 %	
System Reserved	Simple	Basic	NTFS	Healthy (S...	50 MB	18 MB	36 %	
TEXTURES (D:)	Simple	Basic	NTFS	Healthy (B...	931.50 GB	209.17 GB	22 %	

Disk 0 Basic 256.17 GB Online	Crucial MX300 (F:) 255.68 GB NTFS Healthy (Primary Partition)	505 MB Healthy (Recovery Partition)
Disk 1 Basic 931.50 GB Online	TEXTURES (D:) 931.50 GB NTFS Healthy (Basic Data Partition)	
Disk 2 Basic 931.51 GB Online	System Reserved 50 MB NTFS Healthy (System, Act	(C:) 930.97 GB NTFS Healthy (Boot, Page File, Crash Dump, Primary Partition)
		505 MB Healthy (Recovery Partition)

Unallocated
 Primary partition

4- Partition tables [2 marks]

Explain the differences between the two types of partition tables: MBR and GPT.

	MBR	GPT
Maximum capacity	2TB	9.4ZB
Max number of partitions	4 primary partitions	128 primary partitions(on Windows)
Firmware support	BIOS	UEFI
Security		Verification CRC32 and GUID security copy