# How to initialize and partition a new hard disk

These commands will help you to initialize and partition a new hard drive, whether it is a physical drive or a virtual drive.

**lshw -class disk** will list all disks currently on the system.

**lsblk** will list all block devices currently on the system, including hard disk partitions.

**fdisk -l** will list the hard disk partition table.

**fdisk <disk>** will allow you to modify the hard disk partition table.  Within **fdisk**, **m** will give you a list of valid commands.

**parted** will also you to modify the hard disk partition table.  Within **parted**, **help** will give you a list of valid commands.

Either **fdisk** or **parted** may be used to iniatialize a new disk and to create/delete/modify partitions.

After changing the hard disk partition table, you will have to create mount points for any new partitions that you wish to mount.

The **/etc/fstab** file will show you the filesystems that are currently mounted at boot time.

You will need to edit the **/etc/fstab** file to mount new filesystems at boot time.

After editing the **/etc/fstab** file, the **mount -a** command will execute the file and display an error message if there are any errors in the file.

# How to use parted

# parted (the Partition Editor) is used to manage partitions. Note: Commands are executed immediately!

sudo su - # First, become root

parted

print all

print free

# Create a new disk in VMPlayer and reboot the machine

parted

print all

select /dev/sdb # Select the new disk

print

mklabel msdos # Create new partition table, use msdos as LABEL-TYPE for generic Linux

print

mkpart primary 1MiB 100% # Create partition

print

rm 1 # Delete partition

print

mkpart primary 1MiB 15GiB # Create partition 1

mkpart primary 15GiB 100% # Create partition 2

print

quit

# commands to display disk characteristics

lsblk

df –T

df –x tmpfs

fdisk –l

lshw –class disk

# commands to format partitions

mkfs -t ext3 /dev/sdb1 # Format partition 1

mkfs -t ext4 /dev/sdb2 # Format partition 2

# cannot change directory to a physical disk

cd /dev/sdb1 # Error: Not a directory

# create a mount point and mount the disk to access its content

ls /media

mkdir /media/b1

mount /dev/sdb1 /media/b1

cd /media/b1

touch testb1

ls