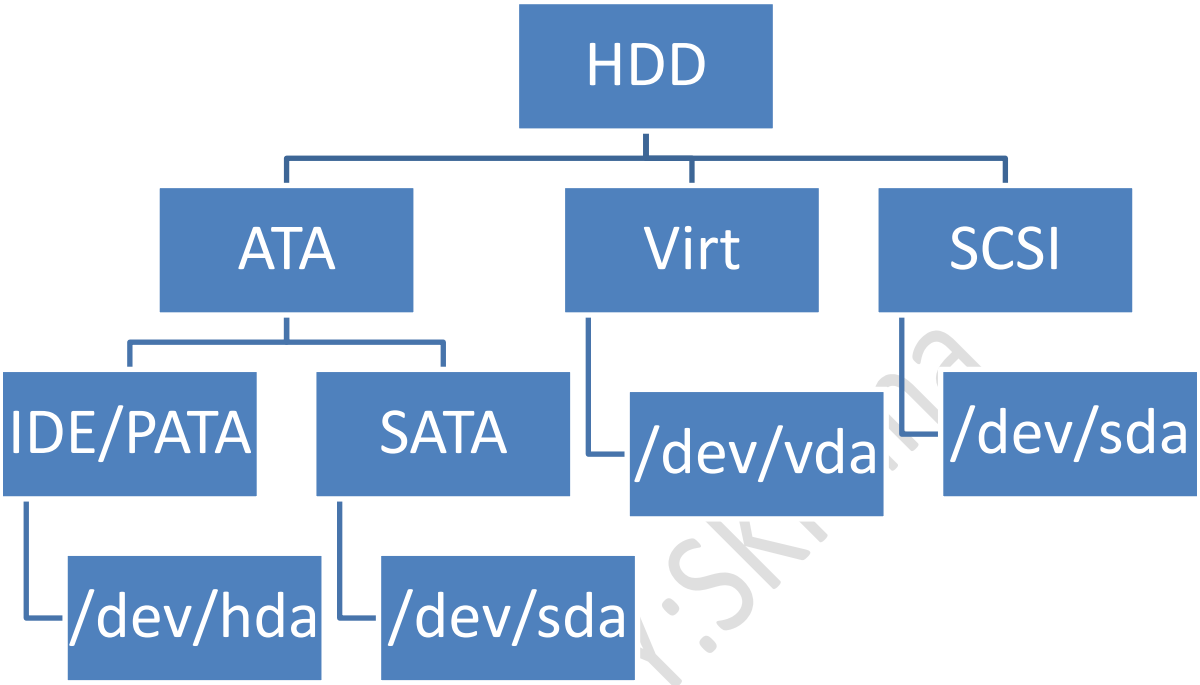
Disk management

Type of HDD



- **Advanced Technology Attachment (ATA)**
- **Parallel Advanced Technology Attachment (PATA)**
- **Integrated Drive Electronics (IDE)**
- **Serial ATA (SATA)**
- **Small Computer System Interface (SCSI)**
- **Solid State Drives (SSD)**

What is partition?

Partitioning is a means to divide a single hard drive into many logical drives that are treated as an independent disk.

We have 64 type of partition table

But must used partition we are using

Msdos

Gpt

File system

It's a method of storing data in organized way.

File system generally is a layer which is under the operating **system** that handles the positioning of your data on the storage, without it; the **system** cannot know which **file** starts from where and ends where.

Wind: **vfat,FAT16,FAT32 etc.**

Linux:

VFAT:

Ext2: in 1993,doesn't have journaling character ,max file size=16g-2tb,can be format 2-32tb

Ext3: in 2003, support manual journaling ,max size=16tb, can be format 2-32tb

Ext4: in 2008, support auto journaling, max size=1EB (1024pb, 1pb=1024tb)

Xfs: it 8eb

Make file system

[root@host ~]# mkfs.xfs /dev/vdb1

MOUNT

Attaching a directory to the file system in order to access the partition and its file system is known as mounting. It's just like a gateway to use that disk space,

[root@host ~]# mount /dev/vdb1 /mnt

/etc/mtab

/etc/fstab

```
UUID=a8063676-44dd-409a-b584-68be2c9f5570   /        xfs   defaults   0 0
UUID=7a20315d-ed8b-4e75-a5b6-24ff9e1f9838   /dbdata  xfs   defaults   0 0
```

Mount	mount point	fs	mount opt	backup	fsck

Autofs

PARTITIONING A DISK

Disk partitioning allows system administrators to divide a hard drive into multiple logical storage units, referred to as partitions

By separating a disk into partitions, system administrators can use different partitions to perform different functions.

MBR Partitioning Scheme

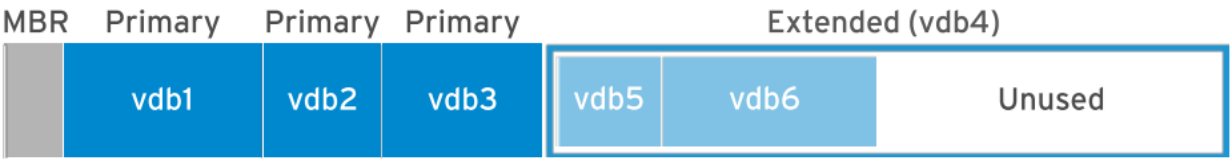
Since 1982, the Master Boot Record (MBR) partitioning scheme has dictated how disks are partitioned on systems running BIOS firmware.

In this we can create maximum 4 primaries Partitions

On Linux systems, with the use of extended and logical partitions, administrators can create a maximum of 15 partitions.

partition size data is stored as 32-bit values

Maximum disk and partition size 2 TiB.



#fdisk /dev/sdb

#partprobe

GPT Partitioning Scheme (GUID Partition Table)

GPT provides a maximum of 128 partitions

GPT allocates 64 bits for logical block addresses

It allows a GPT to accommodate partitions and disks of up to eight zebibytes (ZiB) or eight billion tebibytes.

GPT uses a globally unique identifier (GUID) to identify each disk and partition

The primary GPT resides at the head of the disk, while a backup copy, the secondary GPT, is housed at the end of the disk

#parted /dev/sdb

[root@host ~]# parted /dev/vdb mkpart usersdata xfs 2048s 1000MB

#udevadm settel

Msdos

Gpt

GUID partition table,

We can add 128 partition,

All partition has own global uniq id

Here we can resize a partition

To create partition in parted

#parted /dev/vdb

P

Mklabel

Help mklabel

Mkpart

Resizepart

Rm

Quit

MANAGING SWAP SPACE

When the memory usage on a system exceeds a defined limit, the kernel searches through RAM looking for idle memory pages assigned to processes.

The kernel writes the idle pages to the swap area and reassigns the RAM pages to other processes.

RAM and Swap Space Recommendations

RAM	SWAP SPACE	SWAP SPACE IF ALLOWING FOR HIBERNATION
2 GiB or less	Twice the RAM	Three times the RAM
Between 2 GiB and 8 GiB	Same as RAM	Twice the RAM
Between 8 GiB and 64 GiB	At least 4 GiB	1.5 times the RAM
More than 64 GiB	At least 4 GiB	Hibernation is not recommended

When you add or remove an entry in the /etc/fstab file, run the ***systemctl daemon-reload*** command, or reboot the server, for systemd to register the new configuration.

[root@host ~]# systemctl daemon-reload
