

# Disk partitioning and file system management

Topics : [Centos Server](#)

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Disk partitioning and file system management are essential tasks when setting up a CentOS system.

## 1. Partitioning Disks:

- Identify the disk you want to partition using the `lsblk` command. For example:

```
sudo lsblk
```

- Use a partitioning tool such as `fdisk`, `parted`, or `gparted` to create partitions on the disk. For example, using `fdisk`:

```
sudo fdisk /dev/sdX
```

Replace `/dev/sdX` with the appropriate disk identifier.

- Follow the prompts to create partitions. You can create primary, extended, or logical partitions as needed.
- Use the `p` command to list existing partitions, `n` to create a new partition, `t` to change a partition's type, `d` to delete a partition, and `w` to write changes to disk and exit.

## 2. Formatting Partitions:

- After creating partitions, you need to format them with a file system. Common file systems in CentOS include `ext4`, `XFS`, and `Btrfs`.
- Use the appropriate command to format the partition. For example, to format a partition as `ext4`:

```
sudo mkfs.ext4 /dev/sdXY
```

Replace `/dev/sdXY` with the appropriate partition identifier.

- Repeat the process for each partition you've created.

## 3. Mounting Partitions:

- After formatting, you need to mount the partitions to make them accessible in the file system.
- Create mount points (directories) for each partition. For example:

```
sudo mkdir /mnt/data
```

- Edit the `/etc/fstab` file to automatically mount partitions at boot time. Add an entry for each partition in the following format:

```
/dev/sdXY /mnt/data ext4 defaults 0 0
```

Replace `/dev/sdXY` with the partition identifier and `/mnt/data` with the mount point.

- Mount the partitions manually using the mount command:

```
sudo mount /dev/sdXY /mnt/data
```

#### 4. Managing File Systems:

- Check disk usage and file system information using commands like `df`, `du`, and `lsblk`.
- Resize partitions and file systems using tools like `parted`, `resize2fs`, or `xfs_growfs`.
- Repair file systems using tools like `fsck` for ext4 or `xfs_repair` for XFS.

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