Format USB Drive in Unix Systems

Step 1

Identifying the USB or SD Card Name

List out all the devices. - ***lsblk***

Securely Wipe Up the Data(Unrecoverable)

Before formatting the drive, you can securely wipe out all the data on it by overwriting the entire drive with random data. This ensures that the data cannot be recovered by any data recovery tool.

- Use the **dd** command line tool to wipe out all data securely.
- *sudo dd* ***if****=/dev/zero* ***of****=/dev/sda bs=4096 status=progress*
- Be very careful before running the ***of*** ,because it's the output device so don't mess up with your filesystem.
- Depending on the size of the drive, the process will take some time to complete.
- Once the disk is erased, the dd command will print "No space left on device"

Creating a Partition and Formatting

The most common file systems are **exFAT** and **NTFS** on Windows, **EXT4** on Linux, and **FAT32**, which can be used on all operating systems.

Method 1 - Fdisk

1. To check the format and info of a Drive. - ***fdisk -l***
2. Run fdisk with the device name - ***fdisk*** */dev/sda*
3. Delete all the existing Partions(d).
4. Create New Partion (n)
5. Make the type Fat32 (t)
6. Write the changes(w)
7. Use */dev/sda1* rather than */dev/sda* because we created a new partion inside /dev/sda
8. Format the partition to FAT32 - ***sudo mkfs.vfat -F32 /dev/sda1*** or ***sudo mkfs.vfat /dev/sda1***
9. Lable the Drive - ***sudo fatlabel /dev/sda1 "SONY 8GB"***

Note

- If you are partitioning a new drive, before starting to create partitions first, you need to create a partition table.
- Use MBR to boot the disk in legacy BIOS mode(2 TiB Max)
- Use GPT to boot the disk in UEFI mode(2 TiB >).

Method 2 - Parted

Format with FAT32

Create the partion table

- *sudo parted /dev/sdb –script – mklabel msdos*

Create a Fat32 partition that takes the whole space

- *sudo parted /dev/sdb –script – mkpart primary fat32 1MiB 100%*

Format the boot partition to FAT32

- *sudo mkfs.vfat -F32 /dev/sdb1*

Once done, use the command below to print the partition table and verify that everything is set up correctly

- *sudo parted /dev/sdb –script print*

That's all! You have formatted your device.

Format with EXT4

Create a GPT partition table

- *sudo parted /dev/sdb –script – mklabel gpt*
- *sudo parted /dev/sdb –script – mkpart primary ext4 0% 100%*
- *sudo mkfs.ext4 -F /dev/sdb1*
- *sudo parted /dev/sdb –script print*

Conclusion

Formatting a USB drive or SD card on Linux is a pretty straightforward process. All you need to do is insert the drive, create a partition table, and format it with FAT32 or your preferred file system

Extra Info

How to mount a drive with a directory.

- *sudo mkdir -p /mnt/audio /mnt/video*

  Mount the new partions.

  - *sudo mount /dev/sdb1 /mnt/audio*
  - *sudo mount /dev/sdb2 /mnt/video*