**Experiment No-3**

**Aim:** Mounting: mount, umount. USB, CD/DVD

### Mount is to access a filesystem in Linux. You can mount a filesystem on any directory and access content by entering to that directory. In Linux terms, these directories are called mount points. This tutorial will help you to mount and unmount filesystem in Linux system.

### Use mount Command

Mostly, each Linux/Unix operating systems provides mount command. This command is used to mounting any file system on any directory. After that you can access the filesystem content.

**Syntax:**

$ mount [-t fstype] filesystem mountpoint

Usually when mounting a device with a common file system such as ext4 or xfs the mount command will auto-detect the file system type. However, there are some file systems that are not recognized and need to be explicitly specified.

Use the -t option to specify the file system type:

$ mount -t TYPE DEVICE\_NAME DIRECTORY

For example, you have added a disk /dev/sdb on on your system. Now you want to mount this on /data directory. Use following command to mount it.

# mount /dev/sdb /data

Mount command automatically detects the file system on disk. But in some cases, you need specify the file system type with command.

$ mount -t ext4 /dev/sdb /data

**3. Unmount Filesystem**

Use umount command to unmount any mounted filesystem on your system. Run umount command with disk name or mount point name to unmount currently mounted disk.

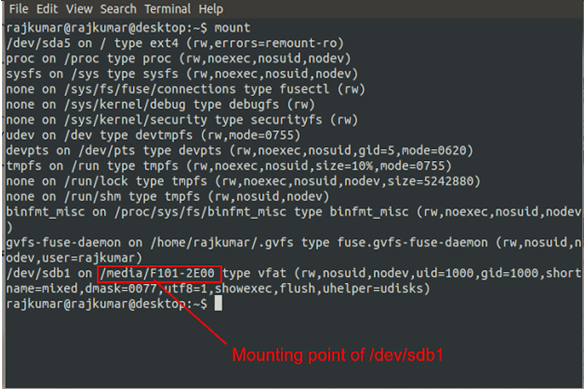
$ umount /dev/sdb

$ umount /data

### Mounting USB pen drive

1. In Ubuntu desktop, the USB pen drive will be detected and mounted automatically. In ubuntu server command line terminal, a message will appear to notice you that some information about the USB pen drive that has been plug in or alternatively you can use fdisk command to check whether USB has been mounted or not.

Then you can get mount location by using mount command

[](http://3.bp.blogspot.com/-st2zZSGPqcE/UWaTW0UAfNI/AAAAAAAAB7A/M8ohU7_TRCE/s1600/Screenshot+from+2013-04-11+16:10:19.png)

**2**. If Step 1 didn't work for you, then run dmesg command to identify the correct device name corresponding to the USB pen drive

$ dmesg

[19197.235469] sd 25:0:0:0: [sdb] Write Protect is off  
[19197.235476] sd 25:0:0:0: [sdb] Mode Sense: 0b 00 00 08  
[19197.236972] sd 25:0:0:0: [sdb] No Caching mode page present  
[19197.236982] sd 25:0:0:0: [sdb] Assuming drive cache: write through  
[19197.242047] sd 25:0:0:0: [sdb] No Caching mode page present  
[19197.242055] sd 25:0:0:0: [sdb] Assuming drive cache: write through  
[19197.279672] sdb: sdb1 --> Device name   
[19197.282401] sd 25:0:0:0: [sdb] No Caching mode page present  
[19197.282406] sd 25:0:0:0: [sdb] Assuming drive cache: write through  
[19197.282410] sd 25:0:0:0: [sdb] Attached SCSI removable disk  
[19199.953227] usb 2-1.1: USB disconnect, device number 28

**2. a.** **Create Mount Point**

$ mkdir -p /media/usb

**2. b.** **Mount USB pen drive**

$ sudo mount /dev/sdb1 /media/usb

**Unmounting USB pen drive**

1. To unmount a USB device simply run the following command  
$ sudo umount /dev/sdb1

OR  
$ sudo umount /media/usb

NOTE: /media/usb is a mount point.

**Formatting USB pen drive**

**1.** **First make sure that USB device is not mounted, if it is then unmount it.**  
**2.** **Format USB device in fat32 format**

$ sudo mkfs.vfat /dev/sdb1

**Note:** You can use mkfs.ext4 to format to ext4 filesystem.  
**Caution:** Enter your device name correctly otherwise it will wip out your entire data.  
  
**3.** **Format and change the Label of the USB drive.**

$ sudo mkfs.vfat -n 'sandeep' /dev/sdb1

**Mount/Unmount CD/DVD**

In order to use a CD-ROM under Linux (or any Unix-like operating system), you must first mount it. Mounting a CD-ROM (or any other physical media, such as a floppy disk, a ZIP disk or a hard drive) tells the operating system which block device to use and where that device is to appear within the directory tree — the mount point. Once you have finished using the CD-ROM, you must unmount it.

## Mounting the CD-ROM

The canonical command to mount the CD-ROM under Linux is:

|  |  |
| --- | --- |
| # | mount -t iso9660 -o ro device dir |

The block device device specifies the physical device or bus the CD-ROM is attached to. On most Linux systems, you can use /dev/cdrom, which would be a symbolic link to something like /dev/hdc for an ATAPI CD-ROM, selected as a master device, on the secondary IDE cable.

The mount point dir specifies where the contents of the CD-ROM are to appear. In Linux and other Unix-like operating systems, every file and directory that can be accessed appears in a single directory tree starting from “/”, the root directory. The mount point dir, then, is simply a directory within that directory tree.

You can use any directory that you like for the mount point dir, as long as that directory exists and is empty. The convention under Linux is to use either /mnt/cdrom or/cdrom.

So, for a typical Linux system, the command you would use to mount a CD-ROM would be:

|  |  |
| --- | --- |
| # | mount -t iso9660 -o ro /dev/cdrom /mnt/cdrom |

Remember that only the root superuser can run this version of the mount command, so you need to log in as root to do this. For the safety and security of your own computer, you should log out as soon as you have entered this command successfully.

**Accessing the CD-ROM**

Once you have mounted the CD-ROM, you can access files and directories on that CD-ROM as if they were part of your directory tree — as, in fact, they now are. For example, if you mounted the CD-ROM on /mnt/cdrom, you can view the file you are now reading (stored on the CD-ROM as unsw/common/cdrom-mounting.html) by typing something like:

|  |  |
| --- | --- |
| $ | more /mnt/cdrom/unsw/common/cdrom-mounting.html |
|  |  |
|  |  |

Of course, if you used a different mount point than /mnt/cdrom, substitute that mount point as appropriate. For example, if you used /cdrom, you would type:

|  |  |
| --- | --- |
| $ | more /cdrom/unsw/common/cdrom-mounting.html |

To free you from the hassles of mounting and unmounting CD-ROMs in the Laboratory, you can access the contents of this Companion CD-ROM by using ~course/cdrominstead of /mnt/cdrom. For example, if you are studying ELEC2041, you can use ~elec2041/cdrom on the Laboratory computers — and you don’t have to mount or unmount any CD-ROMs:

|  |  |
| --- | --- |
| $ | more ~elec2041/cdrom/unsw/common/cdrom-mounting.html |

## Unmounting the CD-ROM

Once you have finished using the CD-ROM, you need to unmount it. The operating system makes you do this so that it can check that nothing is, in fact, using the CD-ROM when you try to eject it.

To unmount the CD-ROM, you need to enter the following command as the root superuser:

|  |  |
| --- | --- |
| # | umount dir |

The directory dir is the mount point that you used for mounting the CD-ROM in the first place (eg, /mnt/cdrom). And please note that the command is umount, notunmount: the first “n” is missing!

If you get an error message stating that “device is busy”, it means that something is still using files and/or directories on the CD-ROM. Even something as simple as having your current directory set to some directory on the CD-ROM is enough to get you this message.

### [Mounting ISO Files](https://linuxize.com/post/how-to-mount-and-unmount-file-systems-in-linux/#mounting-iso-files)

We can mount an ISO file using the loop device. The loop device is a special pseudo-device that makes a file accessible as a block device.

1. Start by creating the mount point, it can be any location you want:

sudo mkdir /media/iso

1. Mount the ISO file to the mount point by typing the following command:

sudo mount /path/to/image.iso /mnt/iso -o loop

Don’t forget to replace /path/to/image.iso with the path to your ISO file.

**Viva Questions:**

* What do you mean by mounting?
* What do you mean by unmounting?
* What does the /dev dir is for?
* What does the –p option in mkdir state?
* What do you mean by mount point?
* In which directory will you find the media devices?
* Give command to mount a CD-ROM.
* Give command to create a mount point
* Give command to mount A USB
* Give command to unmount a USB.

**Learning Outcome:**

* **Mount, unmount and format USB drive**
* **Mount, Access and unmount CD/DVD drive.**