Partition, hard link and symbolic link

→ Let's continue with the linux Instance.

→ before proceeding delete everything.

→ Let's see partition.

Partition:

LVM - Logical Volume Manager

Putty:

```
[root@iP-172-31-95-153 ~]# lsblk
```

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINTS
xvda	202:0	0	8G	0	disk	
├─xvda1	202:1	0	8G	0	part	/
├─xvda127	259:0	0	1M	0	part	
└─xvda128	259:1	0	10M	0	part	/boot/efi

```
[root@iP-172-31-95-153 ~]# fdisk   /dev/xvda
```

welcome to fdisk (util-linux 2.37.4).

changes will remain in memory only, until you decide to write them
Be careful before using the write command.

fdisk: cannot open /dev/xvda: No such file or directory

```
[root@ip-172-31-95-153 ~]# cd /
[root@ip-172-31-95-153 1]# ls

bin  boot  dev  etc  home  lib  lib64  local  media  mnt  opt  proc  root  run  s

srv  sys  tmp  usr  var

[root@ip-172-31-95-153 1]# cd dev

[root@ip-172-31-95-153 dev]# ls

autofs  disk  ...  ...  xen
                      xvda
                      xvda1
                      xvda127
                      xvda128

[root@ip-172-31-95-153 dev]# cd

[root@ip-172-31-95-153 ~]#
```

→ gonna add additional of "3GB" volume.

Aws console:

→ create a "3GB" volume of "same" "availably zone".

→ attach this "3GB" volume to our Instance, and during attachment give "device name" as "/dev/sdb", can give anything.

Putty:
  cont

```
[root@ip-172-31-95-153 ~]# lsblk

NAME      MAJ:MIN  RM   SIZE  RO  TYPE  MOUNTPOINTS
xvda               .    8G    .   disk
├─xvda1            .    8G    .   part  /
├─xvda127          .    1M    .   part
└─xvda128          .    10M   .   part  /boot/efi
xvdb               .    3G    .   disk
```

```
[root@ip-172-31-95-153 ~]# fdisk /dev/xvdb

welcome to fdisk (util-linux 2.37.4).
changes will ...
Be careful ...


Device does not contain a recognized partition table.
created a new DOS disklabel with disk identifier 0xdd2a2366.


command (m for help): n                    [.:new partition]    [.: n- for new partition
                                                                 .: P- to print created partions
partition type                                                  .: t- to change partition type
                                                                 .: w- to write the changes ]
    p primary  (0 primary, 0 extended, 4 free)
    e extended (container for logical partitions)

select (default p): p

Partition number (1-4, default 1): 1
First sector (2048- 6291455, default 2048):
last sector  ...  : +1G

created a new partition 1 of type 'Linux' and of size 1 GiB.

command (m for help): p                                         [.: print]

Disk /dev/xvdb: 3 GiB, 3221225472 bytes, 6291456 sectors
...
:

Device     Boot  Start    End      sectors   size  Id   type
/dev/xvdb1        2048     2099199  2097152   1G    83   Linux


command (m for help): n                                         [.:New partition]

Partition type

    p primary (1 primary, 0 extended, 3 free)
    e extended (container for logical partitions)
```

Select (default p): p

Partition number (2-4, default 2): 2

First sector   ... :

Last sector   ... : +1G

Created a new partition 2 of type 'Linux' and of size 1 GiB.

Command (m for help): p   [∴ print]

Disk /dev/xvdb: 3 GiB, 3221225472 bytes, 6291456 sectors

:

Device	Boot	Start	End	Sector	Size	Id	type
/dev/xvdb1		2048	2099199	2097152	1G	83	Linux
/dev/xvdb2		2099200	4196351	2097152	1G	83	Linux

Command (m for help): t   (∴ type)

Partition number (1, 2, default 2): 1

Hex code or alias (type L to list all): L

    :
    :
    :

Aliases:

    linux   - 83

    swap   - 82

    extended - 05

    uefi   - EF

    raid   - FD

    lvm   - 8E

    linuxex - 85

Hex code or alias (type L to list all): 8E

changed type of partition 'Linux' to 'Linux LVM'.

command (m for help): p

[∴ print]

Disk /dev/xvdb : 3 GiB. 3221225472 bytes, 6291456 sectors

:

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/xvdb1		2048	2099199	2097152	1G	8e	Linux LVM
/dev/xvdb2		2099200	4196351	2097152	1G	83	Linux

command (m for help): w

[∴ write] [∴ without giving "write"
nothing will be saved]

The partition table has been altered.

calling ioctl() to re-read partition table.

Syncing disks.

[root@ip-172-31-95-153 ~]# lsblk

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINTS
xvda	.	.	8G	.	disk	
├ xvda1	.	.	8G	.	part	/
├ xvda127	.	.	1M	.	part	
└ xvda128	.	.	10M	.	part	/boot /efi
xvdb	.	.	3G	-	disk	
├ xvdb1	.	.	1G	.	part	#sk
└ xvdb2	.	.	1G	.	part	

[root@ip-172-31-95-153 ~]# cd /dev

[root@ip-172-31-95-153 dev]# ls

autofs
:   xvda127
:   xvda128
: xvda   xvdb
: xvda1 xvdb1
:   xvdb2

[root@ip-172-31-95-153 dev]#

[∴ partition over]

[∴ clear everything before start . (i mean files, dir)]

Hard link:

→ Inode will be same.

→ even though if we remove the main file, still hardlink file will be present.

Putty:

[root@ip-172-31-95-153 dev]# cd

[root@ip-172-31-95-153 ~]# touch file

[root@ip-172-31-95-153 ~]# mkdir file1

[root@ip-172-31-95-153 ~]# ls -l

total 0

-rw-r--r--, 1   root root   ...   file →w   [∴ white - file
drwxr-xr-x.   . .   .   .. file1 →B   ∴ Blue - dir]

[root@ip-172-31-95-153 ~]# touch hard

[root@ip-172-31-95-153 ~]# cat > file

this is file1

[root@ip-172-31-95-153 ~]# ln file hello

[root@ip-172-31-95-153 ~]# ls -l

total 8

-rw-1--t--   .... file →w
dr---.   file1 →B
-rw.-..   ..   hard →w
-rw...   .... hello →w

```
[root@ip-172-31-95-153 ~]# ls   -li

        total 8

          5055 24    -rw---    ... file
        853 6983    d----    ... file 1
Same {
inode     511 666    -rw--    ... hard
          5055 24    -rw---    ... hello


[root@ip-172-31-95-153 ~]# cat hello

this is file1

[root@ip-172-31-95-153 ~]#
```

[∴ gonna remove the original file of hard link]

```
[root@ip-172-31-95-153 ~]# rm file

rm: remove regular file `file`? yes

[root@ip-172-31-95-153 ~]# ls -l

total 4

dr---        ---  file1 →w
-rw-.  ---  -- hard →B
-rw--        --. hello →w

[root@ip-172-31-95-153 ~]#
```

[∴ eventhough we remove
our original file, our linked
file is still there in "hard lin

Symbolic link or soft link:

* * Inode will not be same.

* * if we remove the main file, softlink file will not present.

  ln --s filename path

  ln -s filename linkfilename

Path:

  .
  cont

[root@ip-172-31-95-153 ~]# touch soft

[root@ip-172-31-95-153 ~]# cat > soft

this is symbolic link

[root@ip-172-31-95-153 ~]# ln -s soft soft1

[root@ip-172-31-95-153 ~]# ls -li

    total 8

    8536983   drw---   ... file1 ↗B

    511666   -rw---   ... hard →w

    505524   -rw--   ... hello →w

diff   511661   -rw--   ... Soft →w

inode   511670   (lrw---   .. Soft1 → soft

                   ↓   ↓w

                 SkyBlue

[root@ip-172-31-95-153 ~]# cat soft1

this is symbolic link

[root@ip-172-31-95-153 ~]#

           [∴ Gonna remove the original file]

```
[root@ip-172-31-95-153 ~]# rm soft

rm: remove regular file 'soft' ? yes

[root@ip-172-31-95-153 ~]# ls -li

total 4

8536983  dr...        --   file1  ⟶B
511666   -rw..    ---      hard ⟶w
505524   -rw...    --      hello ⟶w
522670   lr---     ...     soft1 -> soft
                                 ↓        ↓
                                del      del

[root@ip-172-31-95-153 ~]# cat soft1

cat : soft1 : No such file or directory
```

[∴ As we removed the original file, we are unable to access
     the "linked file", in soft link.

  ∴ The "linked file" can't be accessed, once the original file deleted in
     "soft link"]

[∴ we have done in file.]
[∴ same for folder this process]

→ Let's see in folder.

[∵ In "Soft ~~Hardlink~~", folder can't be used]

[root@ip-172-31-95-153 ~]# pwd

/root

[root@ip-172-31-95-153 ~]# mkdir linux

[root@ip-172-31-95-153 ~]# cd linux

[root@ip-172-31-95-153 linux]# pwd

/root/linux

[root@ip-172-31-95-153 linux]# cd

[root@ip-172-31-95-153 ~]# ln hard /root/linux
                                   ↓
                                  file

[root@ip-172-31-95-153 ~]# ls -li

    total 4

        8536983 drw-..   ... file1 ↗B

        511666   -rw.~   .... hard ↗w

        505524   -rw...   ... hello ↗w

        511667   drw...   .... linux ↗B

        511670   lrw..   ... soft1 -> soft
                                   ‾R   ‾R

[root@ip-172-31-95-153 ~]# cd linux

[root@ip-172-31-95-153 linux]# ls

hard

[root@ip-172-31-95-153 linux]# ls -li

    total 0

    511666 -rw-t--   ..   hard   [∵ same Inode]
                              ↓w