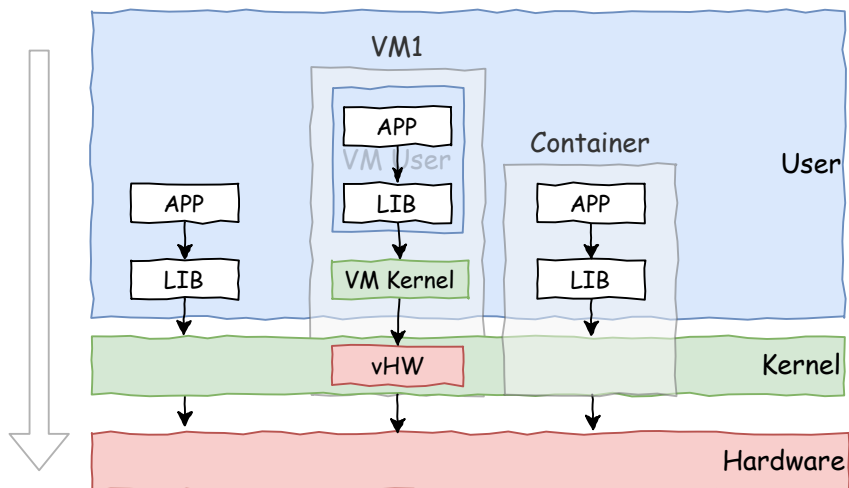
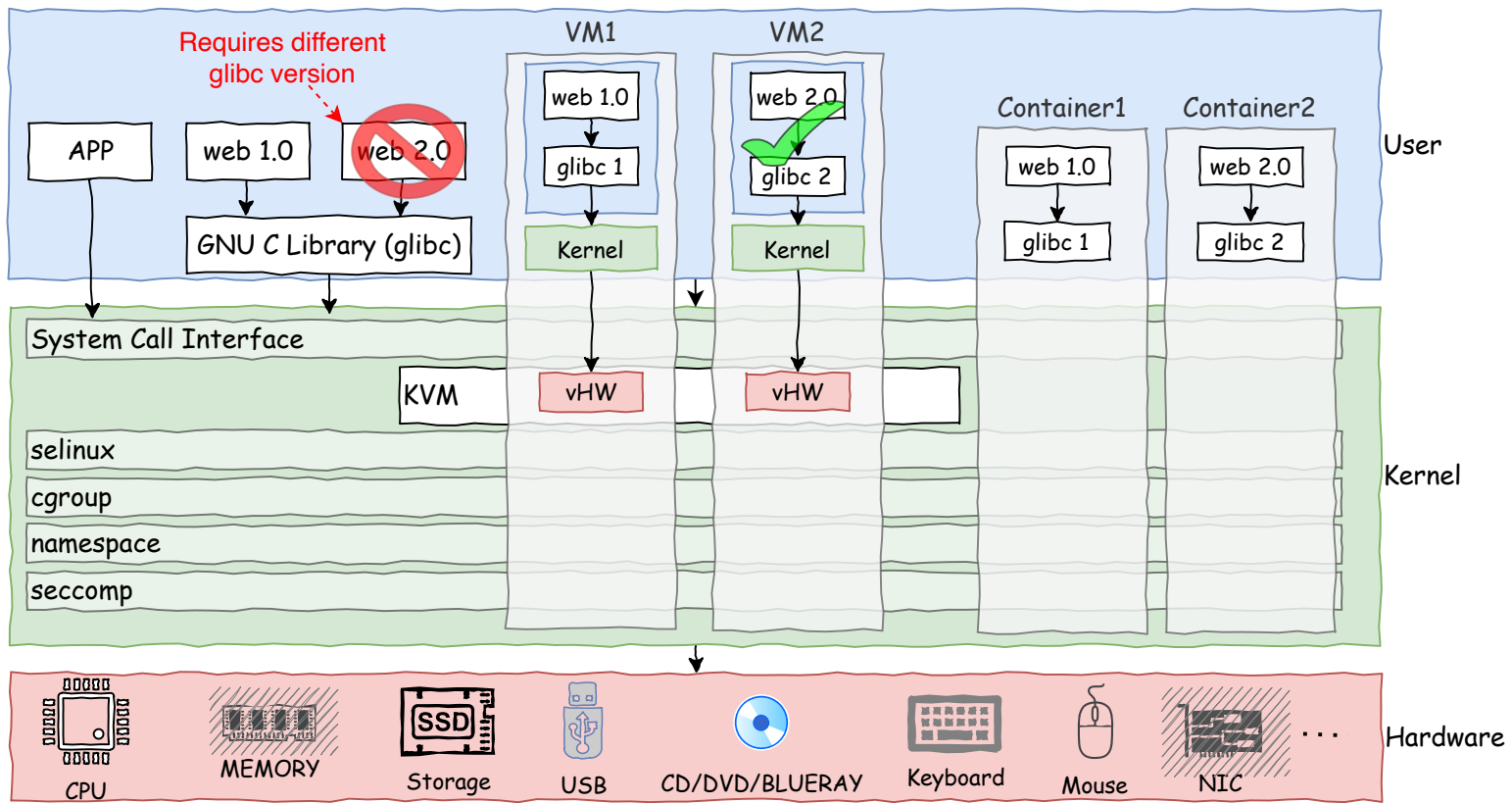
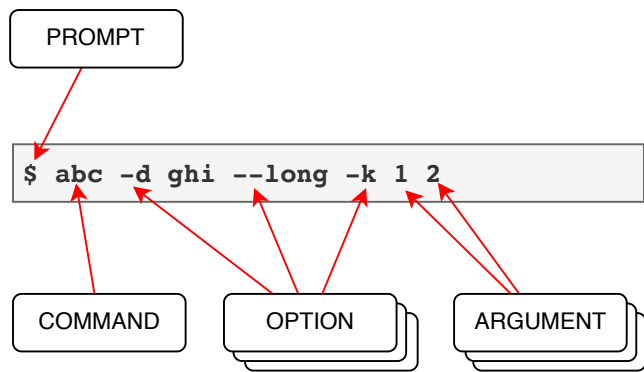


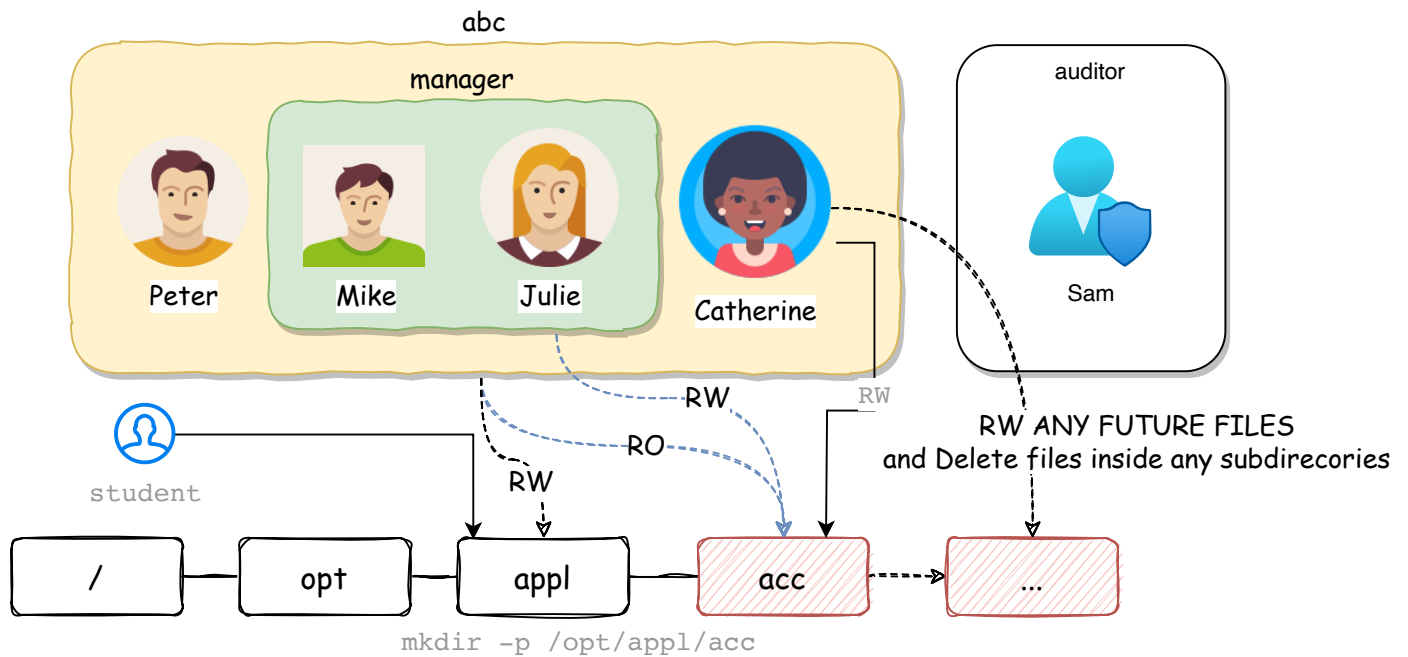
## VM vs Container





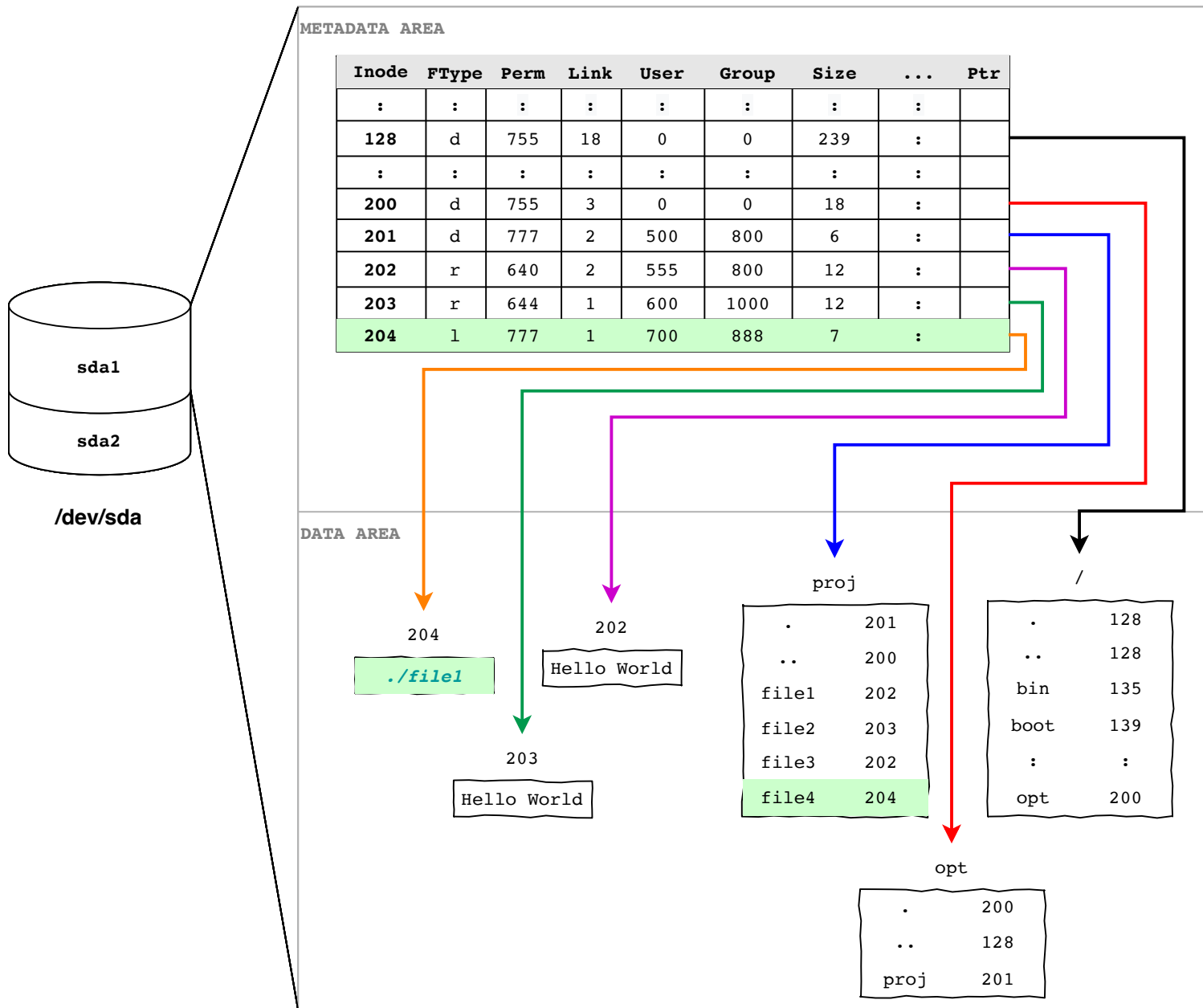
Default separator: **SPACE**  
Default command separator: **semi-colon(;)**

- Sets the behaviour of the command
- Case Sensitive
- Can start with
  - Single dash (-)
    - represented by 1 character
    - can be joined. eg -abc
  - Double dash (--)
    - represented by 1 word



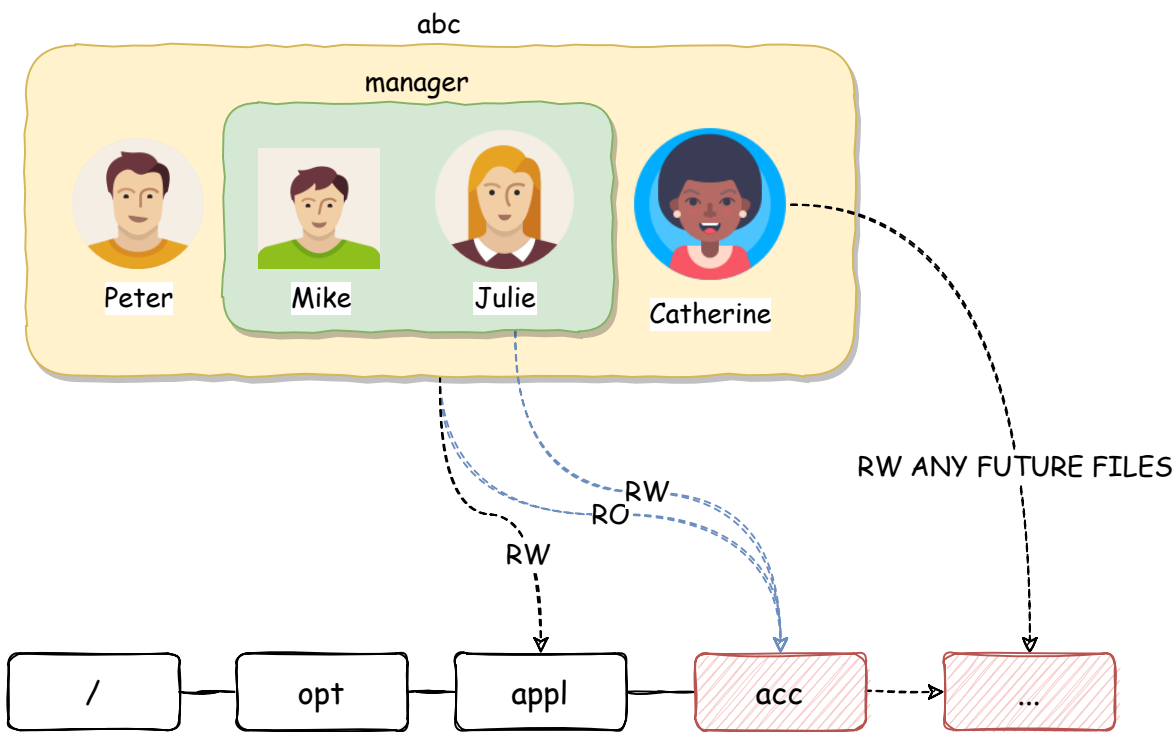
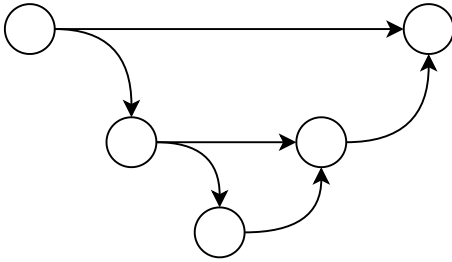
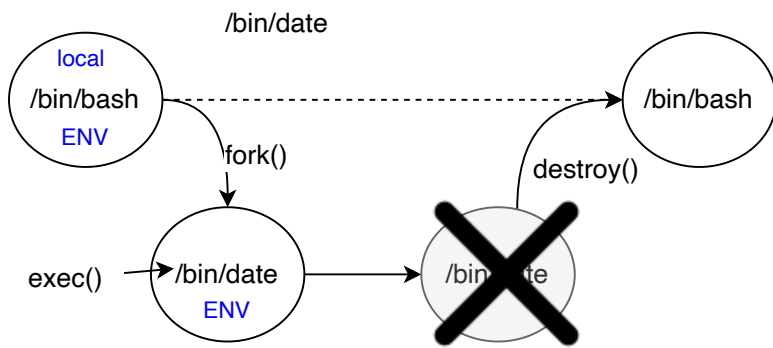
```
getfacl <PATH>
setfacl -m [d:]u|g:<USER>|<GROUP>:<PERM> <PATH>
```

```
# chown -R student.abc /opt/appl
# chmod ug=rwx,o= /opt/appl ---> chmod 770 /opt/appl
# chmod u=rwx,g=rx,o= /opt/appl/acc ---> chmod 750 /opt/appl/acc
# setfacl -m g:manager:rwx /opt/appl/acc
# setfacl -m d:u:catherine:rwX /opt/appl/acc
# setfacl -m u:catherine:rwx /opt/appl/acc
#
#
#
#
...
```

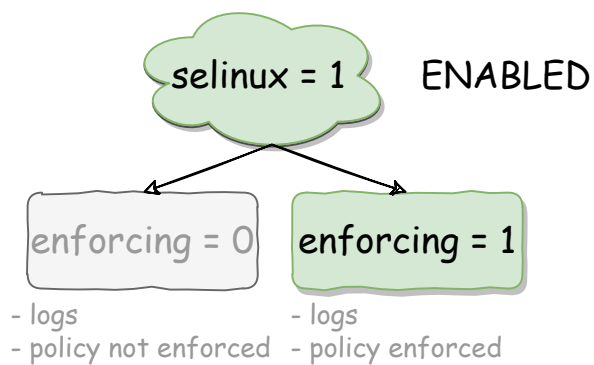


### Commands Issued

1. echo Hello World > /opt/proj/file1
2. cp file1 file2
3. ln file1 file3
4. ln -s ./file1 file4



`setfacl -m [d:]u|g:<user>|<group>:<perm> <PATH>`



`/etc/sysconfig/selinux`  
↓  
`/etc/selinux/config`

## SELINUX Context

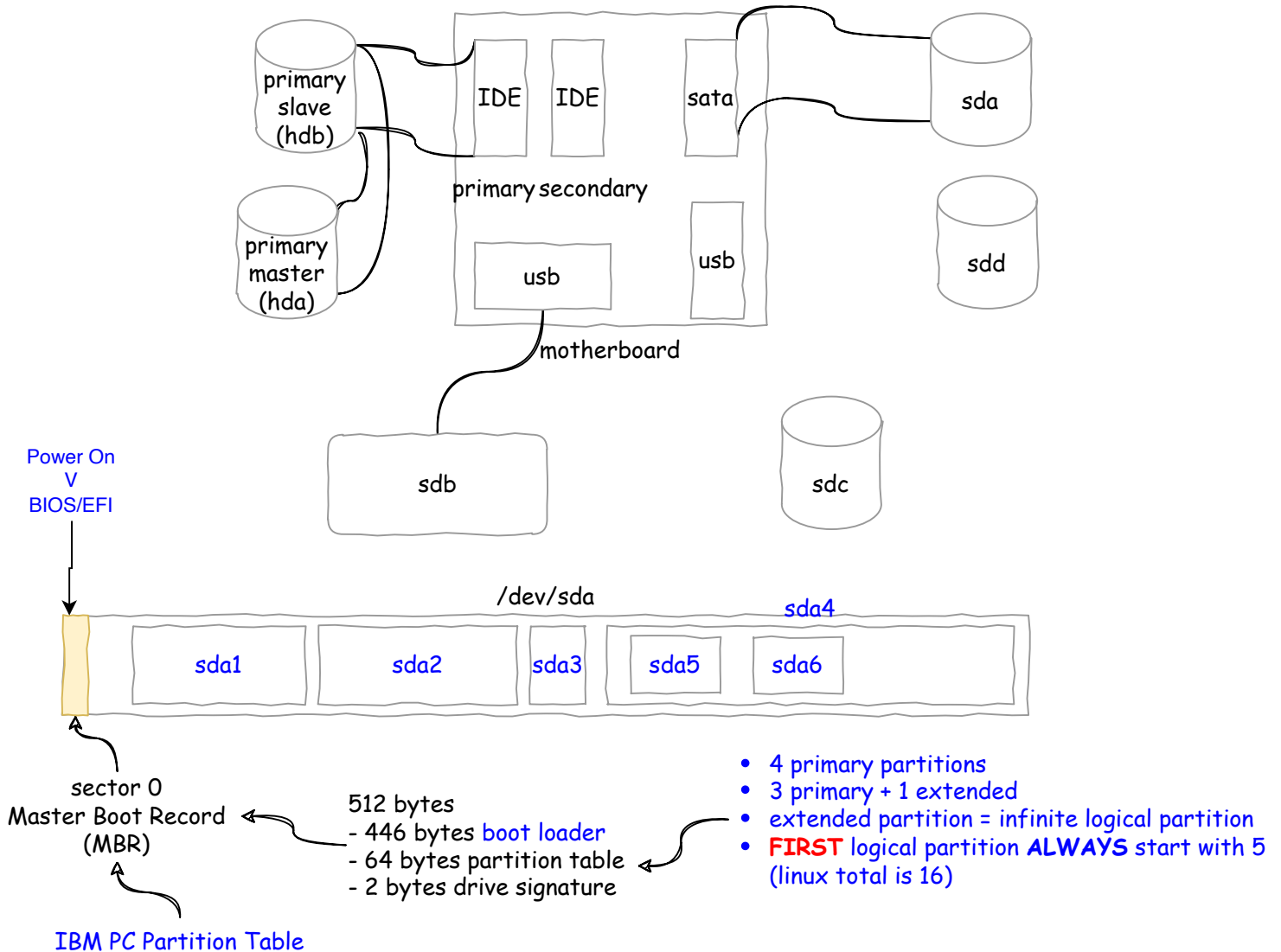
user\_u

role\_r

type\_t

sensitivity

category

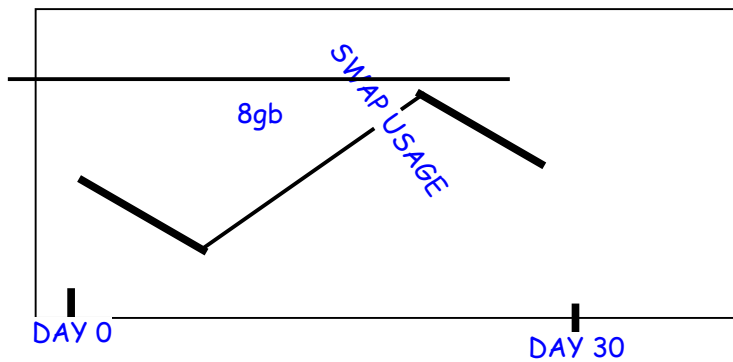
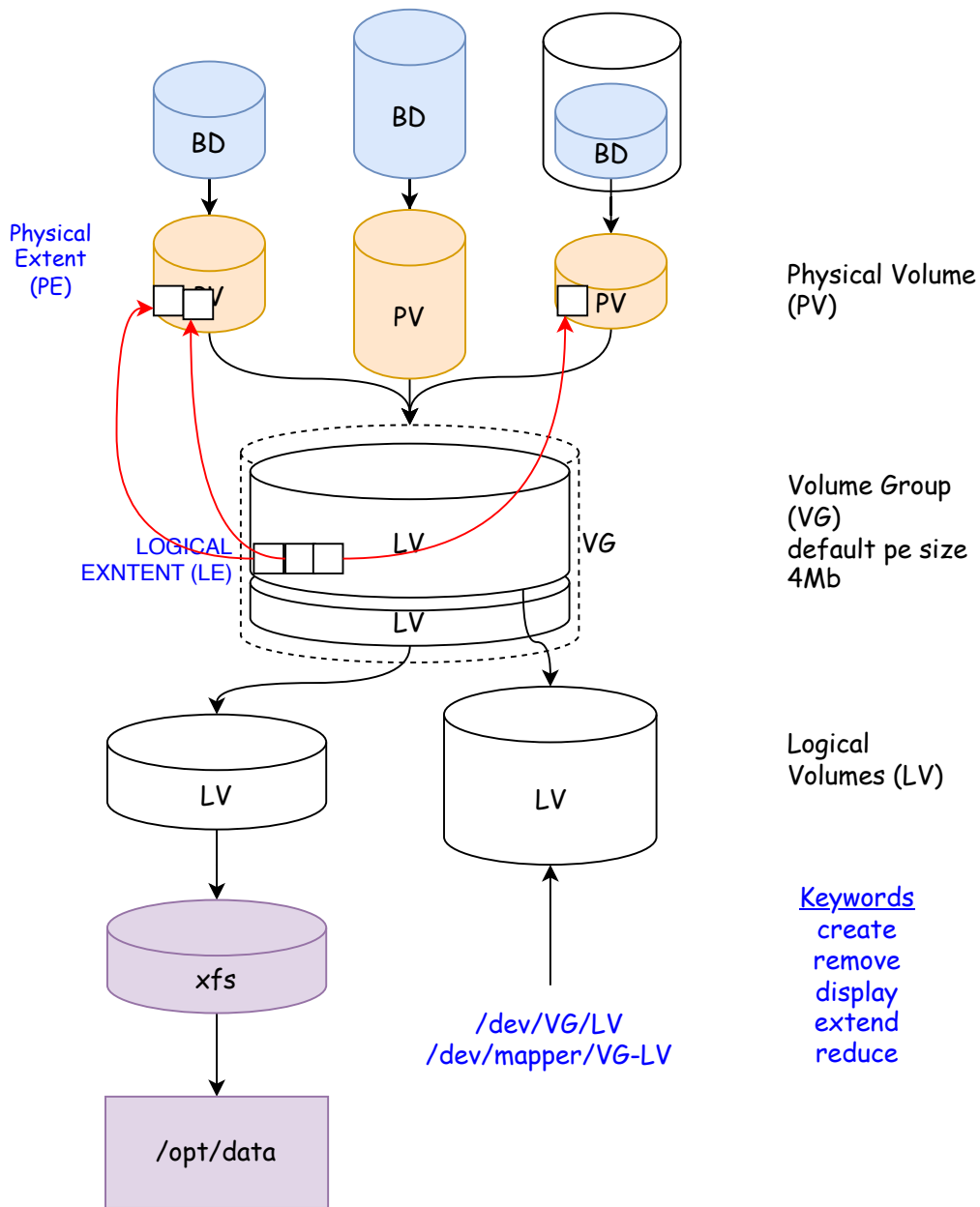


1. A Block Device (BD) can be a partition, whole disk, usb disk/thumb drive, cd/dvd, sw/hw RAID, **logical volume**, floppy, OR a regular file.
2. We can format a BD with a filesystem (FS) in order to use it. Eg FS = xfs, ext2/3/4, FAT, reiserfs, VxFS, UFS, JFS, HPFS, NTFS, ISO9660, etc.
3. In order to use a FS, we mount it onto a Mount Point (directory).

## /etc/fstab

<DEVICE> <MNT\_PT> <FSTYPE> <FSOPTS> <DUMP> <FSCK>

## Logical Volume Manager (LVM)



mount [-t nfs] <server> : /<base>/<share>  
/<dest\_base>/<dest\_dir>

/etc/auto.master.d/<NAME>.autofs

/<dest\_base> /etc/auto.<NAME>

INDIRECT MAP

/etc/auto.<NAME>

<dest\_dir> -rw,sync <server> : /<base>/<share>

IMPORTANT:  
relative pathname

can use wildcard \* and &

POWER ON

BIOS/EFI

Boot Loader  
(GRUB2)

initramfs

kernel

mounted as  
/

root mounted  
in /sysroot

rd.break

switch / with /sysroot

- Wrong Boot Order
- Intel Virtualization (Intel VT-x)
  - Processor Feature
  - Can be **Enabled** in BIOS(sw)
  - `grep vmx /proc/cpuinfo`
- AMD Virtualization
  - Processor Feature, BIOS(sw) setting
  - `grep svm /proc/cpuinfo`
- IOMMU (PCI Pass-through)
  - Processor, Motherboard(hw) Feature, BIOS setting
  - Intel VT-d, AMD IOMMU

/boot/grub/grub2.cfg

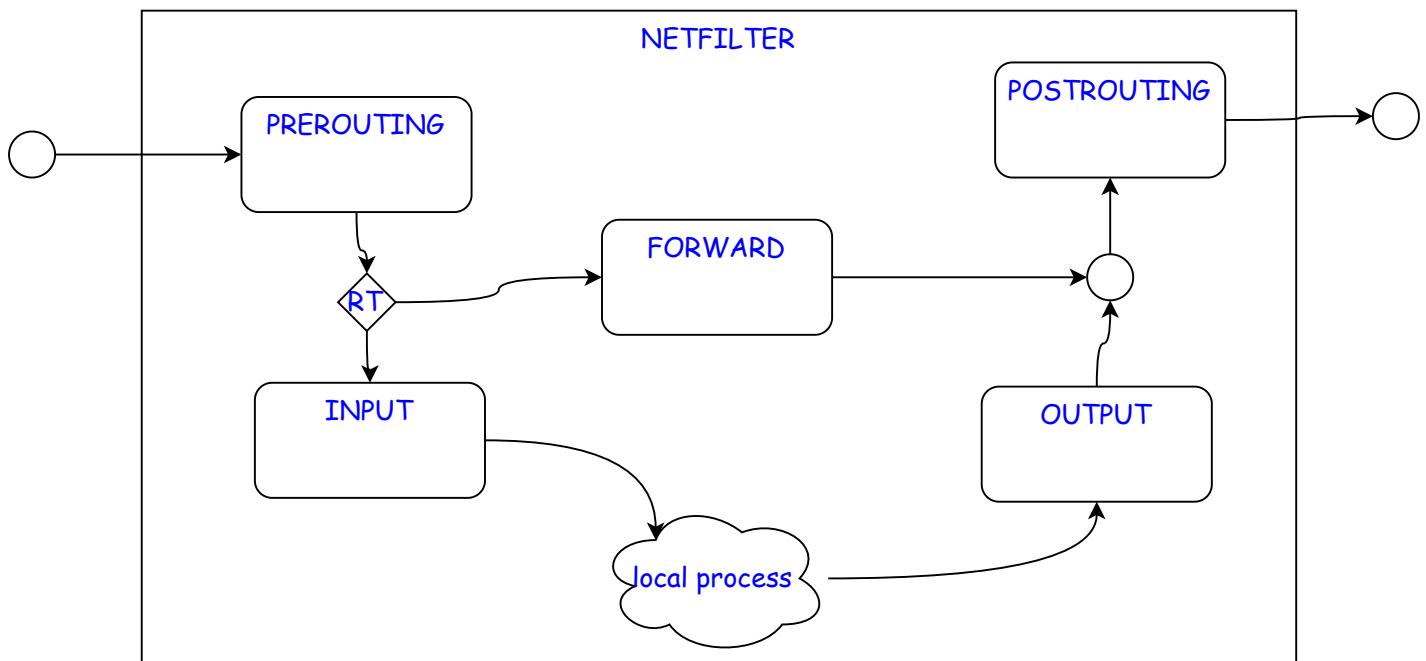
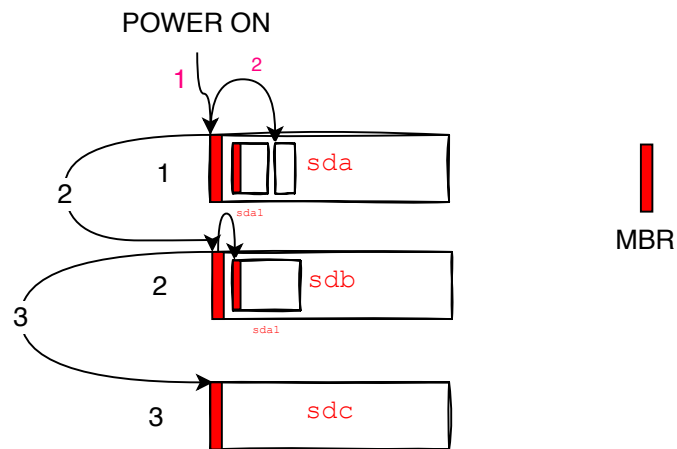
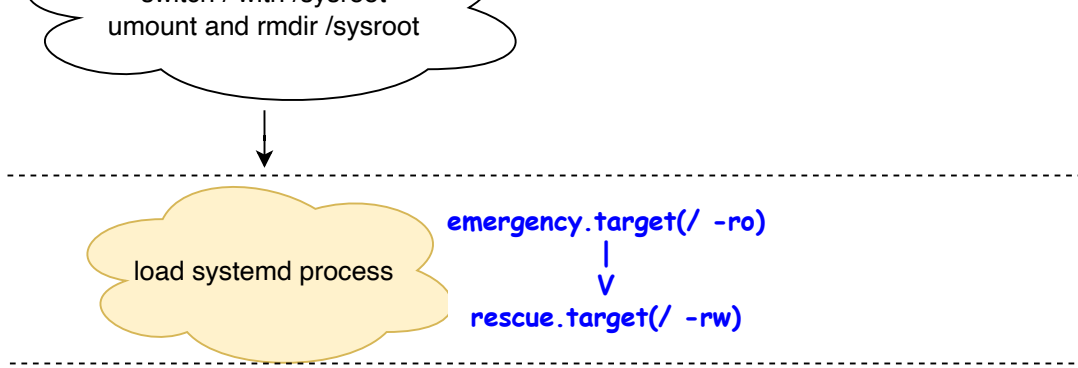
grub2-install  
grub2-mkconfig

1. load module
2. set root
3. load kernel
4. load initrd

read

load modules  
needed





# system v

BIOS/EFI

BOOTLOADER



Sector 0 (MBR)

?

446 bytes - boot loader  
64 bytes - partition table  
2 bytes - drive signature

Initramfs

Kernel

/etc/inittab

/sbin/init

1

2

3

4

5

/etc/rc.d/rc.sysinit

/etc/rc.d/rc.local

gdm

/etc/rc.d/rc <INITDEFAULT>

getty

1

N

/etc/rc.d/rc<INITDEFAULT>.d/s01<SERVICE\_NAME> start

<DAEMON>

/etc/rc.d/rc<INITDEFAULT>.d/s99<SERVICE\_NAME> start

<DAEMON>

BIOS/EFI

BOOTLOADER

Initramfs

systemd-journal

.../sy

U

.../local-fs.target

UNIT

# systemd

