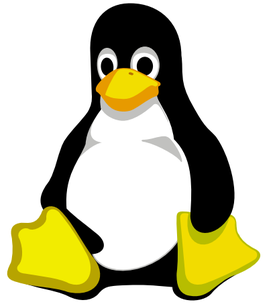
LINUX PRO
PART-1

iNeuron

Basic of Linux

About Linux OS

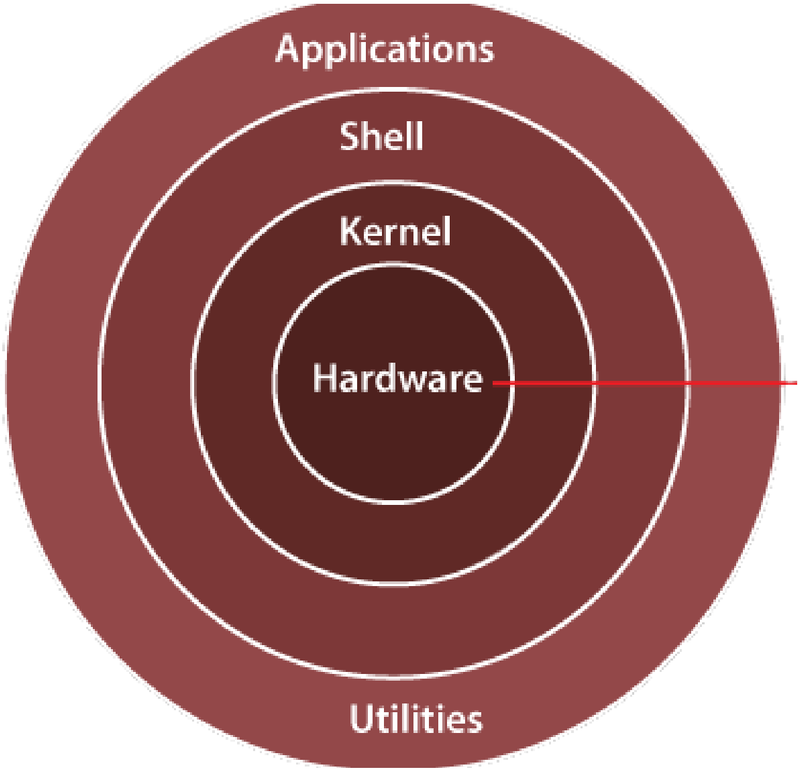
- Linux is an open-source operating system. The source code of Linux is easily available for everyone.
- Linux provides security.
- Older computer systems can be revived using Linux.
- Software can be updated using Linux.
- Customization can be done using Linux.
- Various distributions can be done using Linux.
- Linux is free to use.
- The cost of Linux is low.
- Linux has large community support.



Flavour of Linux OS

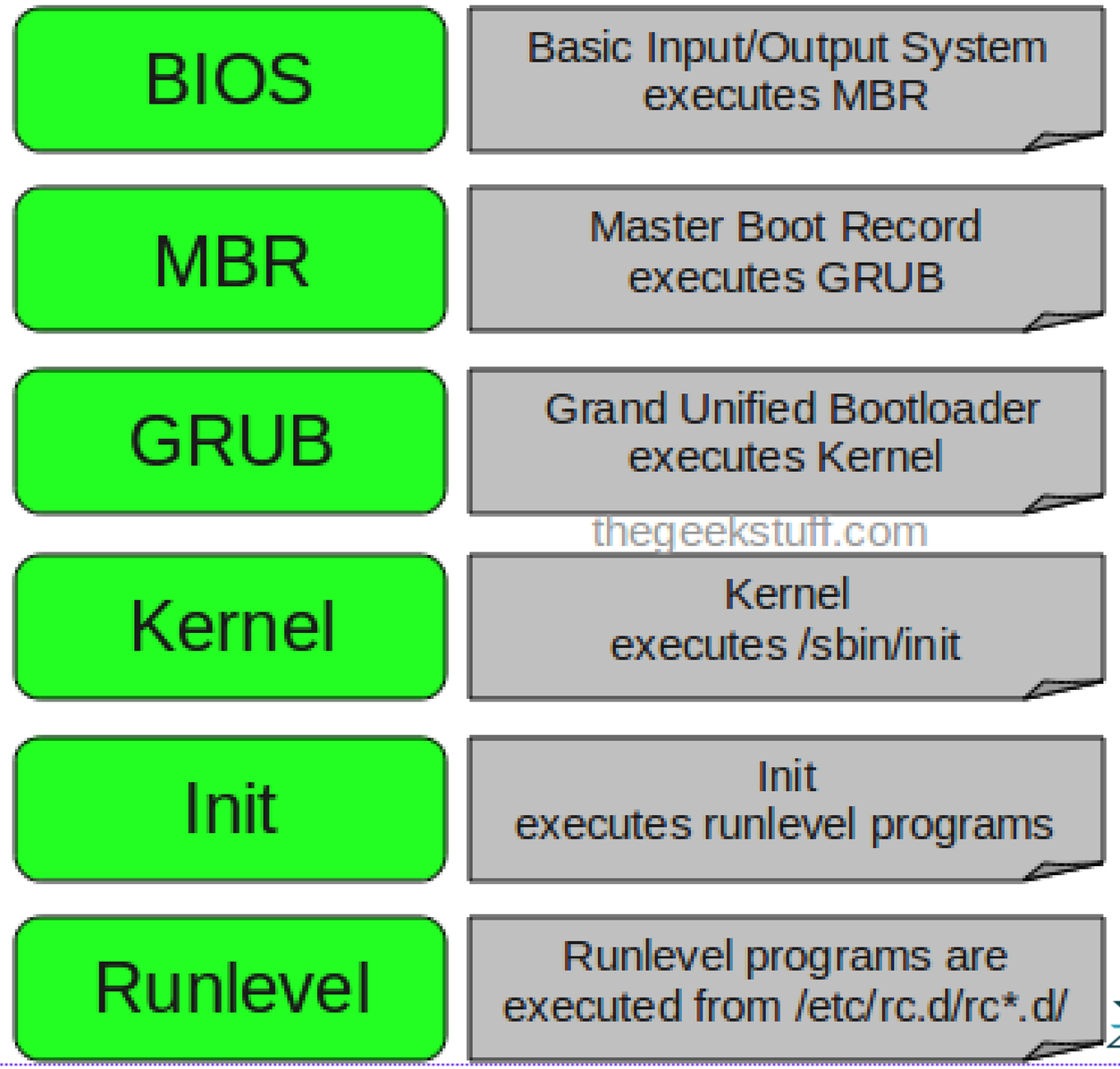
Wikipedia

Architecture of Linux

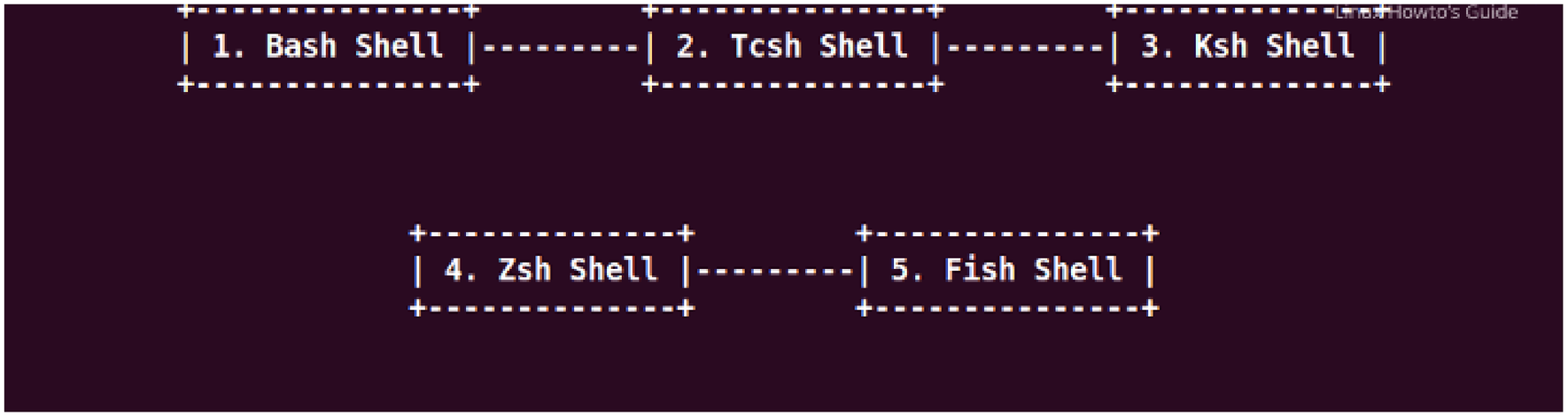


Boot Processing

- The Bootloader
- The Kernel
- Daemons
- Graphical Server
- Desktop Environment
- Applications



Different shells we used in Linux



Basic Terminal Commands

Echo	if	until	trap
read	else	case	wait
set	fi	esac	eval
unset	while	break	exec
read-only	do	continue	ulmit
shift	Done	exit	umask
export	For	return	

Linux Emulator

GNOME Terminal
Guake
Konsole
Terminate
MATE Emulator
Xterm

Linux Uptime

- Display all the information about uptime without formatting
  - o #Uptime
- Display the statistics of uptime in a pretty format
  - o #Uptime -p or --pretty
- Display up since time
  - o #Uptime -s or –since
- Listing the information on the output version
  - o --version

```
root@tryit-helping:~# uptime
 12:09:51 up 1 min,  0 users,  load average: 0.03, 0.09, 0.08
```

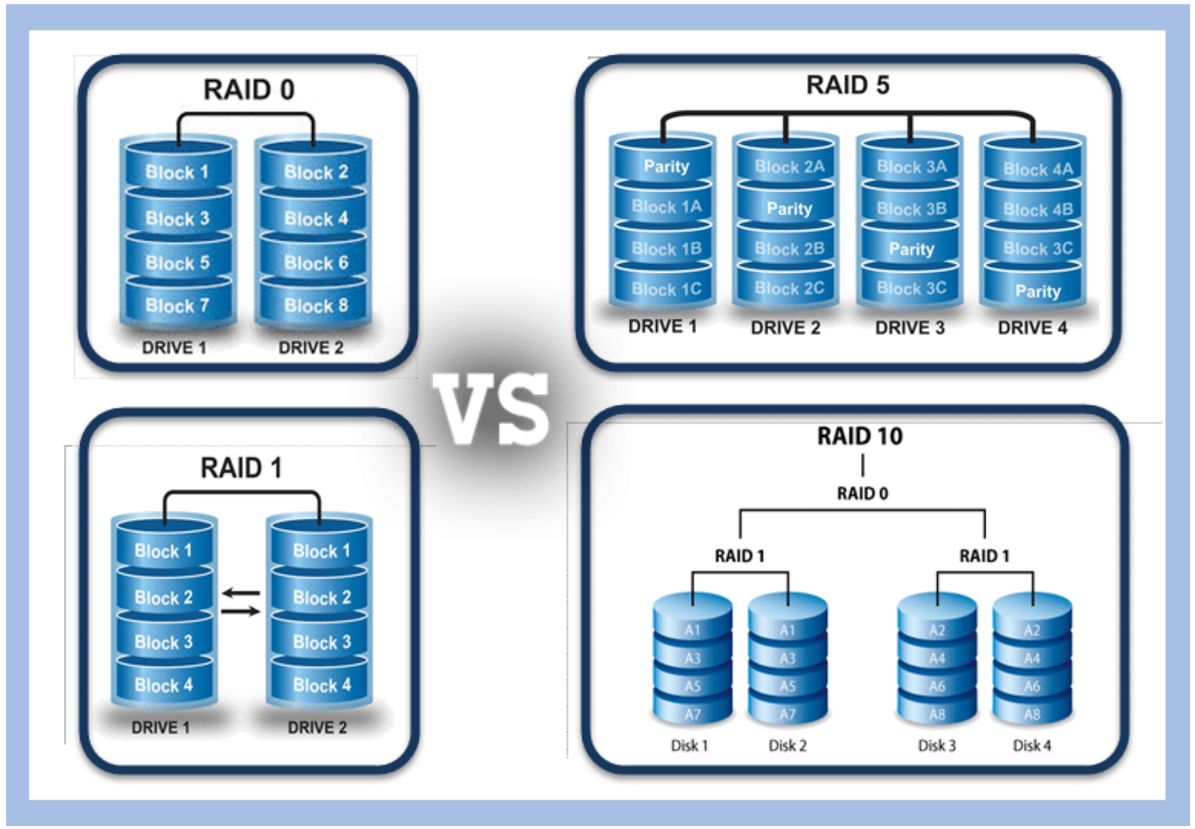
Linux Crontab

Cron is a software utility or in other words system process which allows users to schedule time-based schedulers to perform repetitive tasks at fixed intervals of time. These intervals can be a specific time of the day or even like a regular schedule with a fixed days gap.

```
crontab [-u user] [-l | -r | -e] [-i] [-s]
```

RAID Storage

This technology works to improve data storage performances and reliability. A RAID storage system has a combination of multiple drives that work together. The RAID storage technology considers the available multiple drives as a single continuous drive with the help of hardware and/or software. One crucial behaviour of RAID storage is its availability in multiple RAID levels which have a specific purpose to serve like.



iNeuron

Virtualization

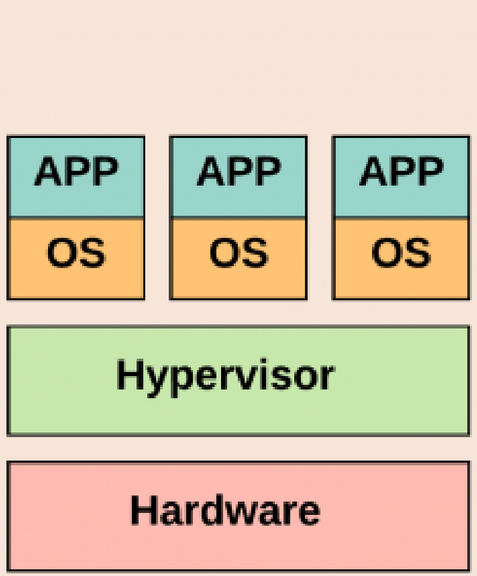
Virtualization is a process where a software-based representation of something rather than a physical one. Virtualization that is managed by a program is called a Hypervisor. A hypervisor is a software that helps in creating and running virtual machines. There are two types in this which are as follows:

Type-1 native or bare-metal Hypervisors
Type-2 or hosted Hypervisors

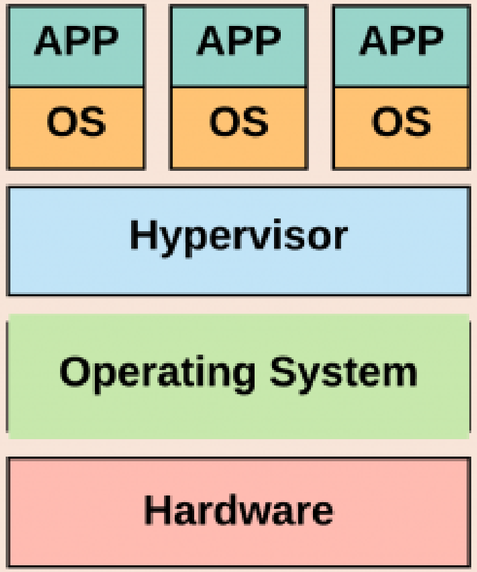
Type 1 provides direct interaction to the hardware, and it can run directly on the host’s hardware and control it.

In type 2, an operating system is needed to interact with the hardware. The Hypervisor is installed along with the operating system.

Types of Hypervisor



Type1 Hypervisor



Type2 Hypervisor

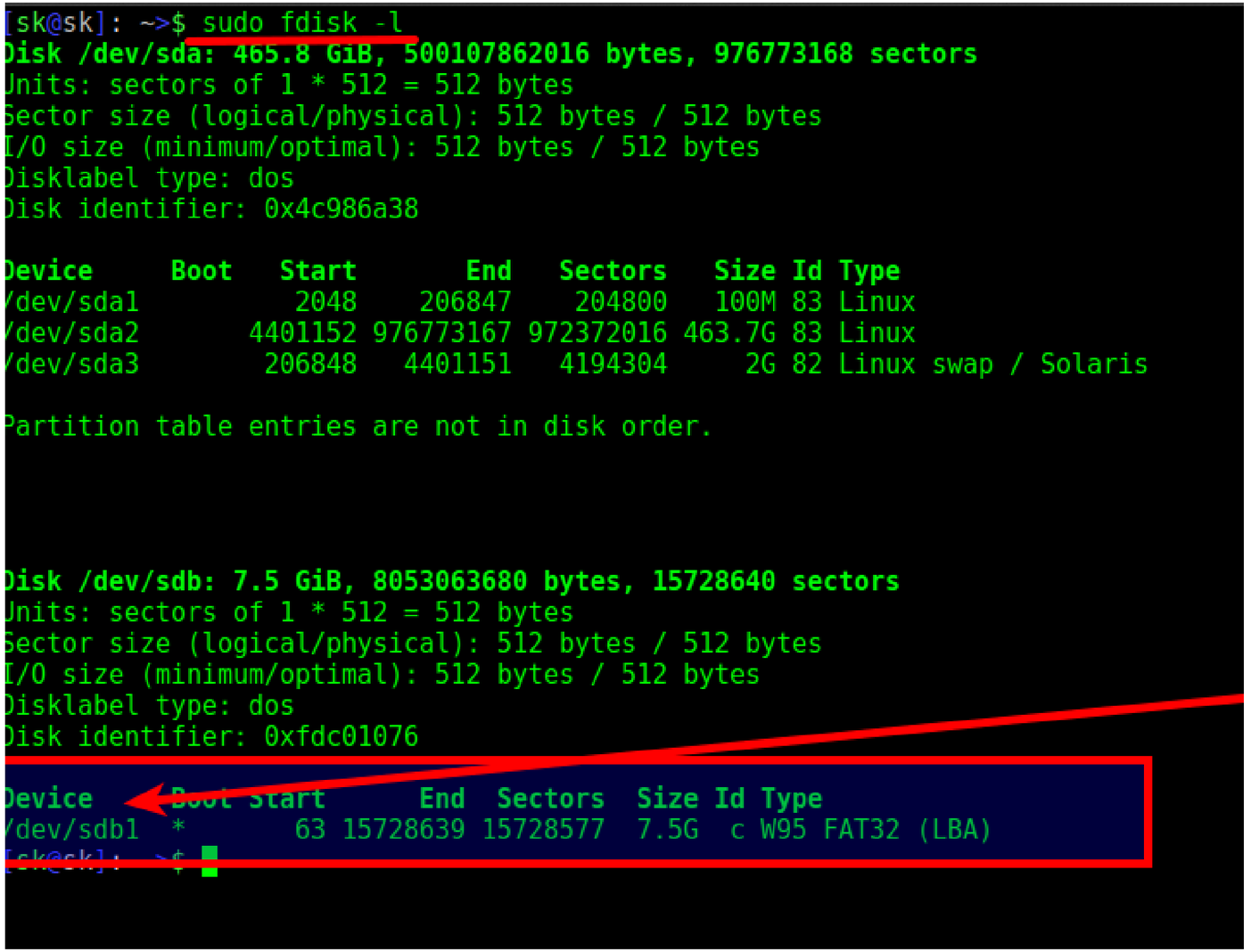
Linux Format

There are different types of Linux formats like btrfs, ext2, ext4, xfs, cramfs, ext3, minix. This format is compatible with the Linux operating system.

As per the compatibility in terms of the application or the job status, we can choose the respective Linux format. Majorly the Linux format is mainly used to format the external block storage.

```
fdisk [-uc] [-b sectorsize] [-C cyls] [-H heads] [-S sects] device
```

More Info


[sk@sk]: ~>$ sudo fdisk -l
Disk /dev/sda: 465.8 GiB, 500107862016 bytes, 976773168 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x4c986a38
Device Boot Start End Sectors Size Id Type
/dev/sda1 2048 206847 204800 100M 83 Linux
/dev/sda2 4401152 976773167 972372016 463.7G 83 Linux
/dev/sda3 206848 4401151 4194304 2G 82 Linux swap / Solaris
Partition table entries are not in disk order.
Disk /dev/sdb: 7.5 GiB, 8053063680 bytes, 15728640 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xfdc01076
Device Boot Start End Sectors Size Id Type
/dev/sdb1 * 63 15728639 15728577 7.5G c W95 FAT32 (LBA)

Linux Unzip Zip File

- The zip utility is majorly used in the windows operating system.
- But we can use the same zip utility in the Linux platform also.
- Similarly, like zip utility, we are having different utility to compress or zip the data like .tar, .tar.gz and tar.bz2, etc.
- Under the zip family, there are multiple utilities that come like zipdetails, zipsplit, zipcloak, zipinfo etc.

```
zip [ OPTIONS ] [ ADD ZIP FILE NAME ] [ LIST OF FILES ] unzip [ ZIP FILE
NAME ]
```


```
[root@localhost data]# ls
file1
[root@localhost data]# pwd
/root/data
[root@localhost data]# zip com.zip file1
  adding: file1 (stored 0%)
[root@localhost data]# ls
com.zip  file1
[root@localhost data]#
```

```
[root@localhost data]# ls
com.zip  file1  file2  file3  file4  file5  file6
[root@localhost data]# pwd
/root/data
[root@localhost data]# zip -u com.zip file6
  adding: file6 (stored 0%)
[root@localhost data]# ls
com.zip  file1  file2  file3  file4  file5  file6
[root@localhost data]#
```

Linux Disk Space

df => checking the disk space usage

df -h => output in human-readable format

df -hT <mount location> => do mount on particular location

df -i => display the inodes of the file system

df -T => display the type of file system

```
root@tryit-humorous:~# df
Filesystem     1K-blocks    Used Available Use% Mounted on
/dev/sdb        31457280 1308848  28482512   5% /
none                492       4       488   1% /dev
udev             2007452       0   2007452   0% /dev/tty
tmpfs                100       0       100   0% /dev/lxd
tmpfs                100       0       100   0% /dev/.lxd-mounts
tmpfs            2017152       0   2017152   0% /dev/shm
tmpfs             403432       4    403428   1% /run
tmpfs               5120       0      5120   0% /run/lock
tmpfs            2017152       0   2017152   0% /sys/fs/cgroup
tmpfs                100       0       100   0% /var/lib/lxd/shmounts
tmpfs                100       0       100   0% /var/lib/lxd/devlxd
/dev/sdb        31457280 1308848  28482512   5% /var/lib/lxd/storage-pools/default
```

See you Next Part