**Born2beroot notes**

**Virtual Machine**

Is the process of emulation a physical computer that uses software instead of hardware to run. It allows the running of multiple machines virtually on a single device.

**Partition**

Is a storage region that is typically the 1st step in preparing a new disk, before any filesystem is created. A disk can have up to 4 primary partitions, but it can have more if one of them is a extended partition that allows to have multiple logical partition within eg:

/dev/sda1 ->1st primary

/dev/sda2 ->2nd primary

/dev/sda3 ->3rd primary

/dev/sda4 ->Extended

/dev/sda5 ->1st logical

/dev/sda6 ->2nd logical

The extended partition ends up just being a container for the logical partitions and can be mounted at different points (like they were folders)

**Mount points**

Following FHS (filesystem hierarchy standard) these are some conventions linux distros should follow in their mount points

/ -> the root directory of the file system hierarchy

/boot -> contains home directories for users

/temp -> contains temporary files

/srv -> contains data for services for HTTP email etc

/home -> contains users home directories, and their files

/var -> variable files files that can change during normal operation of the system

/var/log -> stores log files

/swap -> used when RAM is full, to temporarily store more inactive or less frequently used memory in RAM for the designated area on the hard drive

These are some examples but depending on what you are configuring you can have more

<https://en.wikipedia.org/wiki/Filesystem_Hierarchy_Standard>

<https://phoenixnap.com/kb/swap-space>

**LVM**

Stands for logical volume manager it allows the allocation of space on mass storage devices more flexible than conventional partitioning since you can span across multiple disks

**Apt and aptitude**

Apt (Advanced packaging tool) is a low level package manager that can be used by other higher level package managers, while aptitude is high level. Aptitude handles a lot more than apt, including the functionalities of apt mark (marking a package as manually or automatically installed allowing it or not for manual removal) and apt-cache (that does the query and display info about packages)

**Sudo**

Allows users to execute commands as another user, (it can be super user or not).

Its a good safeguard to have so you dont execute commands that may break the system by mistake. Also by running a program in root it would make it also have root privileges and that would make it easier for malicious programs to ruin the system.

Commands:

->

**Systemctl**

Allows to control of systemd system and service manager. Allows the management of what programs are running and check theirs status

commands :

-> sudo service **[SERVICE]** restart -> restarts service

-> sudo systemctl status **[SERVICE]** -> prints info about the service

**UFW**

Uncomplicated firewall wall

Commands:

->sudo ufw status -> to check open ports

->sudo ufw allow **[PORT]** -> to allow a port use

->sudo ufw delete allow **[PORT]** ->to close port

Ports need to be opened on the VM in Settings -> Network -> Advanced -> Port Forwarding and then added host port and guest port number

**SSH Protocol**

Secure shell protocol is a way to remotely access a machine. It encrypts the connection between two computers and allows the communication between them. To connect to the VM through the pc terminal the network adapter should be set to Bridged Adapter in the VM Settings.

Commands:

->sudo systemctl status sshd -> checks ssh server status

->sudo service sshd restart -> restarts the ssh server

->sudo vim /etc/ssh/sshd\_config -> file with ssh configs allowing to change the port that ssh server uses, if we can control through ssh as root and others

To connect to the VM server you need to

->hostname -> Get the System DNS name

->hostname -I -> Shows all the network addresses of the host

->use ssh **[HOSTNAME]**@**[ADRESS]** -p **[PORT]**  -> where the port is one of the allowed ones through the firewall

**Was at setting up password policy**

**Need to check more important ssh and ufw commands**

**Check how to startup and reset os in command line**

**Check lvm commands**

**Check system services**