Mounting

Mount	Show all the current mounts
findmnt	Show all the current mounts with its relations
Df -Th	Show all available disk space with the system mounts (including the filesystem)

Creating a user / group

/etc/login.defs	Config file that has been used to store default variables for users etc.
Useradd \<username>	Adding a user
Passwd \<username>	Changing the password of the user
Usermod -aG \<groupname> \<username>	Append a user to a group
Usermod \<username]> -d \<newhomedirectory>	Changing the default homedirectors for a user **excluding** copying the old homefolder data!
Usermod \<username> -m -d <newhomedirectory>	Changing the default homedirectors for a user **including** copying the old homefolder data!
groupmems -g \<groupname> -l	Showing which users a member of a group

ACL Linux

Getfacl /	Get the directory ACL on that folder
Setfacl \<directory>	

SUID	Runned file is runned on the SUID bit user (4000) chmod +4000 / chmod u+s
SGID	Automatically new files created in this folder get the group of the GUID Bit (2000) chmod +2000 / chmod g+s
Sticky bit	Removing files is not allowed by others in this folder (1000) chmod +1000 / chmod +t

File management

Ls -R	Show all files in a directory including subdirectories
Cp -R /etc /home/dir	Copies all the files including the subdirectories

Key-Based Authentication SSH

Ssh-keygen -t rsa -b 4096	Creating a key pair (private and public) in the root folder ~/.ssh
Ssh folder 700	
Contents in ssh folder 600	
Ssh-copy-id root@192.168.82.128	Copy the public key to a different host

Networking

Ip link show	Show the link stat of all the interfaces
Ip -s link show	Show the current link statistics (packets sent, received etc.)
Ip route show	Show the default route on the machine

Ss -lt	Showing all the listening ports on the current system
Nmcli dev status	Show al the status of all the network interfaces on the host
Nmcli dev show \<NICname>	Show status of a interface
Dhclient	Refresh the dhcp client to get a new ipaddress

Packages

Yum info nmap	Show info about a package
Yum list | less	Show all the installed packages
Yum groups list	Show all the groups that are available te install
Yum groups info “Basis Web Server”	Show which packages are in the group basic web server

Yum history	Show which packages you installed en when
Yum history undo \<number>	Undo the action that take place (show info through yum history)

Mounting NFS Share

Show mount -e \	Showing witch directories are available to make a connection to
mount 192.168.82.132:/var/share /var/share	Mounting the share
192.168.82.132:/var/share /var/share/ nfs defaults 0 0	Add this row to the /etc/fstab/
Umount /var/share	Unmount the share on the client
mount	Show all the current mounts

AutoFS NFS Share

Yum install autofs	
Systemctl enable —now autofs	
	Vi /etc/auto.master

Mounting NFS Share

```
[linda@server1 testfolder]$ cat /etc/auto.master
#
# Sample auto.master file
# This is a 'master' automounter map and it has the following format
# mount-point [map-type[,format]:]map [options]
# For details of the format look at auto.master(5).
#
/misc   /etc/auto.misc
/home   /etc/auto.home
#
```

```
[linda@server1 testfolder]$ cat /etc/auto.home
*       -fstype=nfs4    192.168.55.151:/home/&
```

Vi /etc/auto.home

Journald Log persistant

Mkdir -p /var/log/journal

vi /etc/systemd/journald.conf Edit the journald config file

#Storage=auto -> Storage=persistent

systemctl restart systemd-journald Restart the journald config

Executing scripts

Source myscript.sh	Runs the script in the current shell (environment variable will be available in the shell)
./myscripts.sh	Runs the script in a different shell, after the script is done the environment variables aren't available anymore
$0	Name of the script itself when executed in a script
$1, $2 etc.	Arguments that you can pass into a script
$?	Display the error level
$#	the number of parameters with which the script has been called
$$	The PID number of the current running shell

Operator	Description	Example
-eq	Checks if the value of two operands are equal or not; if yes, then the condition becomes true.	[$a -eq $b] is not true.
-ne	Checks if the value of two operands are equal or not; if values are not equal, then the condition becomes true.	[$a -ne $b] is true.
-gt	Checks if the value of left operand is greater than the value of right operand; if yes, then the condition becomes true.	[$a -gt $b] is not true.
-lt	Checks if the value of left operand is less than the value of right operand; if yes, then the condition becomes true.	[$a -lt $b] is true.
-ge	Checks if the value of left operand is greater than or equal to the value of right operand; if yes, then the condition becomes true.	[$a -ge $b] is not true.
-le	Checks if the value of left operand is less than or equal to the value of right operand; if yes, then the condition becomes true.	[$a -le $b] is true.

Operator	Description	Example
-b file	Checks if file is a block special file; if yes, then the condition becomes true.	[-b $file] is false.
-c file	Checks if file is a character special file; if yes, then the condition becomes true.	[-c $file] is false.
-d file	Checks if file is a directory; if yes, then the condition becomes true.	[-d $file] is not true.
-f file	Checks if file is an ordinary file as opposed to a directory or special file; if yes, then the condition becomes true.	[-f $file] is true.
-g file	Checks if file has its set group ID (SGID) bit set; if yes, then the condition becomes true.	[-g $file] is false.
-k file	Checks if file has its sticky bit set; if yes, then the condition becomes true.	[-k $file] is false.
-p file	Checks if file is a named pipe; if yes, then the condition becomes true.	[-p $file] is false.
-t file	Checks if file descriptor is open and associated with a terminal; if yes, then the condition becomes true.	[-t $file] is false.
-u file	Checks if file has its Set User ID (SUID) bit set; if yes, then the condition becomes true.	[-u $file] is false.
-r file	Checks if file is readable; if yes, then the condition becomes true.	[-r $file] is true.
-w file	Checks if file is writable; if yes, then the condition becomes true.	[-w $file] is true.
-x file	Checks if file is executable; if yes, then the condition becomes true.	[-x $file] is true.
-s file	Checks if file has size greater than 0; if yes, then condition becomes true.	[-s $file] is true.
-e file	Checks if file exists; is true even if file is a directory but exists.	[-e $file] is true.

Selinux

sestatus	Show the status of selinux
Setenforce 0	Set selinux to permissive
Setenforce 1	Set selinux to enforced

FACL

setfacl -m u:\<username>:\<rights> \<filename> setfacl -m u:jan:rwx test.txt	Set rights for a user and group
setfacl -m g:\<groupname>:\<rights> \<filename> setfacl -m g:users:rwx test.txt	

Modules

lsmod	Show all the modules currently running
modinfo \	Show info about a module
/etc/modprobe.d/	Directory for the config files of the modules

Modules

Custom Repo

Yum repolist	Update the repositories
Yum clean all	Reload the cache

Firewalld

Firewall-cmd —add-service=http —permanent	Add a service
firewall-cmd —add-port=80/tcp —permanent	Add a port
firewall-cmd —reload	Reload the firewall
firewall-cmd —list-services	Show witch services are allowed throughout the firewall
firewall-cmd —list-ports	Show all the ports that are been enabled
Systemctl status firewalld.service	Show the status of the firewall Deamon

Yum install crony

Chronyc tracking
Chronyc sources -v
/etc/chrony.conf
Systemctl status chronyd **Chronyd With a d!**

Selinux

Semanage port -l	List of all the ports
semanage port -a -t http_port_t -p tcp 90	Change the default http port to port 90

Getsebool -a
Setsebool -P \ (from getsebool) on/of
yum install selinux-policy-doc

Podman enabling auto start container

podman run -d –name web -p 8888:8080 -v /home/containerdata:/var/www/html:Z -e HTTPD_MPM=event registry.redhat.io/rhel8/httpd-24:1-112.1599745027	Creating a container
Cd /etc/systemd/system	Changing the directory to the right location
Sudo podman generate systemd —name \<container> –files	
Login as the user and then -> ~/.config/systemd/user	Location where the service must be

Systemctl —user daemon-reload **(with ae)**
Systemctl —user enable container-web.service
setsebool -P container_manage_cgroup on

Loginctl enable-linger \<username>	Enable this so that the container can start automatically as the system boots

Copy logs to directory

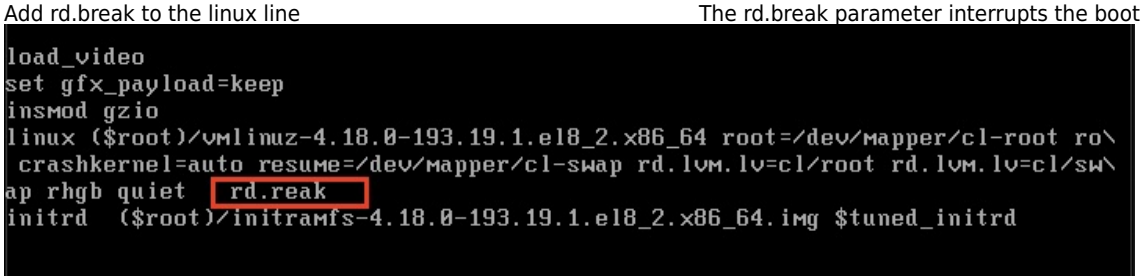
cp -R /var/log/journal/* /home/ldapuser1/log

Powersaving profiles

tuned-adm active	Show the current active tuned profile
tuned-adm list	Show all the tuning profiles
tuned-adm profile	Setting the default tuning profile
Systemctl enable —now tuned	Enable tuned

Root password reset:

Press “e” on boot menu
Add rd.break to the linux line — The rd.break parameter interrupts the boot process before the



Cntrl x

Root password reset:

```
switch_root:/# mount -o remount,rw /sysroot
switch_root:/# chroot /sysroot
sh-4.4# passwd root
Changing password for user root.
New password:
BAD PASSWORD: The password fails the dictionary check - it is based on a dictionary word
Retype new password:
passwd: all authentication tokens updated successfully.
sh-4.4# touch /.autorelabel
sh-4.4#
```

Grub Changing default target

Press “e” on boot menu

```
          search --no-floppy --fs-uuid --set=root a04121ba-4376-47e0-82bf-b4f2\
b5405047
        fi
        linux16 /vmlinuz-3.10.0-957.el7.x86_64 root=UUID=a4af586c-b121-4105-84\
29-b61cc95d6536 ro crashkernel=auto rhgb quiet LANG=en_US.UTF-8
        initrd16 /initramfs-3.10.0-957.el7.x86_64.img
```

To

```
          search --no-floppy --fs-uuid --set=root a04121ba-4376-47e0-82bf-b4f2\
b5405047
        fi
        linux16 /vmlinuz-3.10.0-957.el7.x86_64 root=UUID=a4af586c-b121-4105-84\
29-b61cc95d6536 rw init=/sysroot/bin/sh crashkernel=auto rhgb quiet LANG=en_US\
.UTF-8
        initrd16 /initramfs-3.10.0-957.el7.x86_64.img
```

Cntrl x

Grub changing config

Vi /etc/default/grub — Changing some settings within the grub config

grub2-mkconfig -o /boot/grub2/grub.cfg — Writing the config file to the boot config file.

```
# vi /etc/default/grub
# grub2-mkconfig -o /boot/grub2/grub.cfg
```

Volumes

Lsblk	List all the block devices
Pvcreate	Creating a physical volume
Vgcreate /dev/sdb	Creating a volume group
lvcreate -L 500mb -n lvprac vgprac	Creating a logical volume
Mkfs.xfs /dev/sdb	Creating a filesystem
Df /mnt/lvdrive	Show disk usage of that folder **including** the mount paths of those folder

Extend filesystem

Lvextend -L +1GB /dev/vg_disk/lv_disk3	Extend the filesystem with 1GB
resize2fs /dev/vg_disk/lv_disk	Resize the filesystem

Volumes Show

Pvscan	Scan physical volumes
Vgscan	Scan volume groups
Lvscan	Scan ogical volumes
Pvdisplay	List physical volumes
Vgdisplay	List volume groups
Lvdisplay	List logical volumes

Find

find / -user jan -exec tar -cvzf file.tar.gz {} +

find / -user peter -exec cp {} /root/backup \;

Swap

First create a LV disk that you want to enable for swap with Lvcreate !

Parted /dev/vg_disk/lv_disk2

```
(parted) mkpart
File system type?  [ext2]? linux-swap
Start? 0
End? 500M
(parted)
```

Mkswap /dev/vdb1	Makeswap partition
Free -m	Showing how many swap space there is before
Swapon /dev/vdb1	Enable the swap partition
Free -m	Showing how many swap space there is now
/etc/fstab	Enable to the /etc/fstab

```
#LABEL=extradisk2 /extradisk2 ext4 defaults 0 0
/dev/vg_disk/lv_disk2 swap      swap    defaults        0       0
~
```

Mount -a

Ls -l /dev/mapper	Dm-0 etc. should be the names corresponding to the output of swapon -s

Stratis

Dnf install stratisd stratis-cli straits

Systemctl enable —now stratisd — Enable stratis deamon

Check if the devices don't have a partition table

Blkid -p /dev/sdb	Should be a empty string
wipefs -a /dev/sdb	Wipe filesystem if that exists

Stratis pool create \<name> \ Eq. Stratis pool create stratis_pool /dev/sdb /dev/sdc	Creating a pool
stratis pool add-data stratis_pool /dev/sdd	Adding a drive to the pool
stratis fs create \ \	Creating a filesystem

Mount /stratis/stratis_pool/xfs /mnt/xfs_stratis	Mounting the filesystem
Blkid -p /stratis/stratis_pool/xfs	Getting the block id of the drive

Write the mount to the /etc/fstab file for mounting when booting

```
[root@server1 ~]# cat /etc/fstab

#
# /etc/fstab
# Created by anaconda on Thu Sep 19 05:45:14 2019
#
# Accessible filesystems, by reference, are maintained under '/dev/disk/'.
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.
#
# After editing this file, run 'systemctl daemon-reload' to update systemd
# units generated from this file.
#
/dev/mapper/rhel_rhel8-root /                       xfs     defaults        0 0
UUID=4dd44b69-0feb-4b10-9b16-758d1b8c37c7 /boot                   xfs     defaults        0 0
/dev/mapper/rhel_rhel8-swap swap                    swap    defaults        0 0
#VAGRANT-BEGIN
# The contents below are automatically generated by Vagrant. Do not modify.
#VAGRANT-END
#/stratis/stratis_pool/xfs /mnt/stratis_mount   xfs     defaults        0 0
UUID=eeae3b5c-59b5-4796-802f-38c2240e6486 /mnt/stratis_mount xfs defaults       0       0
[root@server1 ~]#
```

VDO

Yum install vdo kmod-vdo

Systemctl enable –now vdo

Vdo create —name=vdo1 –device=/dev/sdb –vdoLogicalSize=100G

VDO

Vdostats –human-readable
Pvcreate /dev/mapper/vdo1
Vgcreate vg_vdo1 /dev/mapper/vdo1
Lvcreate -L 50G —name=lv_vdo1 vg_vdo1 Lvcreate -L 50G —name=lv_vdo2 vg_vdo1
Mkfs.xfs -K /dev/mapper/vg_vdo1-lv_vdo1 Mkfs.xfs -K /dev/mapper/vg_vdo1-lv_vdo2
Mount in the fstab

```
#VAGRANT-END
/dev/mapper/vg_vdo_disk-lv_vdo1 /mnt/xfs_mnt1   xfs     defaults,x-systemd.requires=vdo.service 0       0
/dev/mapper/vg_vdo_disk-lv_vdo2 /mnt/xfs_mnt2   xfs     defaults,x-systemd.requires=vdo.service 0       0
~
```

Df -hT	Show human readable and filesystem types

TAR

-t	Shows the full archive

ZIP

Zip test.zip file1.txt	Zipping a file
Gzip	Open source zip file format
Tar -czvf \<files> \<filename>.gz	-c = create -z = gzip -v = verbose (display each file name) -f = file
Tar -xzvf \<filename>.gz	-x = extract -z = gzip -v = verbose (display each file name) -f = file
Bzip2	Higher compression then Gzip
Tar -cjvf \<files> \<filename>.bz2	-c = create -j = bzip2 -v = verbose (display each file name) -f = file
Tar -xjvf \<filename>.bz2	-x = extract -j = bzip2 -v = verbose (display each file name) -f = file
Xz	Highest compression but slower
tar -cJvf	-c = create -J = XZ -v = verbose (display each file name) -f = file
Tar -xJvf	-x = extract -J = XZ -v = verbose (display each file name) -f = file