ROOT PASSWORD RESET · do it first

```
# GRUB menu: press e, end of the linux line,
   add:
  rd.break
```
Then Ctrl+X. On RHEL 10, press Enter for maintenance.

```
mount -o remount,rw /sysroot
chroot /sysroot
```
The real system, now writable

```
passwd root
```
Type the new password twice

```
touch /.autorelabel
```
Forget this and root can't log in

```
exit
exit
```
It relabels, then reboots

SELINUX AND FIREWALL · stay enforcing

```
journalctl -u httpd | grep -i denied
ls -Z /var/www/html
```
Find the reason first

```
semanage fcontext -a -t httpd_sys_content_t
   '/srv/web(/.*)?'
restorecon -Rv /srv/web
```
Rule first, then apply it

```
semanage port -a -t http_port_t -p tcp 8090
```
A web server on a new port

```
setsebool -P httpd_can_network_connect on
```
-P makes it survive a reboot

```
firewall-cmd --permanent --add-port=8090/tcp
firewall-cmd --reload
```
Permanent, then reload

NETWORK · node1, first

```
nmcli con show
```
Find the connection name

```
nmcli con mod NAME ipv4.method manual
   ipv4.addresses 192.168.50.11/24 \
   ipv4.gateway 192.168.50.1 ipv4.dns
   192.168.50.1
```
Method and address in one command

```
nmcli con up NAME
```
A changed profile applies only after up

```
hostnamectl set-hostname node1.lab.example
```
Persistent hostname

```
echo '192.168.50.1 repo.lab.example' >>
   /etc/hosts
```
Name resolution without DNS

PERMISSIONS AND SUDO

```
chgrp sysmgrs /common/admin
chmod 2770 /common/admin
```
2 = setgid: new files inherit the group

```
setfacl -m u:natasha:rw /var/tmp/fstab
setfacl -m u:harry:- /var/tmp/fstab
getfacl /var/tmp/fstab
```
ACLs: rw for one user, nothing for another

```
echo '%sysmgrs ALL=(ALL) NOPASSWD: ALL' >
   /etc/sudoers.d/sysmgrs
chmod 440 /etc/sudoers.d/sysmgrs
visudo -c
```
% means a group. 440, then check the syntax

REPOSITORIES · every node

```
# /etc/yum.repos.d/rhcsa.repo
  [BaseOS]
  baseurl=http://repo.lab.example/BaseOS
  gpgcheck=0
```
One section per repo; add [AppStream] the same way

```
dnf repolist
```
Both must show

```
dnf provides '*bin/setfacl'
```
Command missing? Find its package

USERS AND PASSWORDS

```
useradd -G sysmgrs natasha
useradd -s /sbin/nologin sarah
useradd -u 3456 alex
```
-G supplementary group, -s shell, -u UID

```
echo 'Pass1' | passwd --stdin natasha
```
Set a password in one line

```
usermod -aG wheel natasha
```
-a appends. Without it, other groups are removed

```
chage -M 60 -W 7 ben
chage -l ben
```
Aging for one existing user

```
# /etc/login.defs
  PASS_MAX_DAYS   30
```
New users only

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STORAGE · node2

```
lsblk
parted /dev/vdb print free
```
See the disk and its free space

```
parted -s /dev/vdb mkpart part2 1025MiB
   1537MiB
udevadm settle
```
New partition, wait for its device

```
vgcreate -s 16M qagroup /dev/vdb3
lvcreate -l 24 -n qa qagroup
```
-s extent size, lower -l counts extents

```
mkfs.xfs /dev/qagroup/qa
```
RHEL 10: XFS needs at least 300 MB

```
lvextend -r -L 460M /dev/vgreports/vo
```
-r grows the file system too. XFS never shrinks

```
mkswap /dev/vdb2
blkid /dev/vdb2
```
Format swap, read its UUID

MOUNTS AT BOOT

```
# /etc/fstab
  UUID=...  /mnt/qa  xfs   defaults  0 0
  UUID=...  none     swap  defaults  0 0
```
By UUID or device path

```
systemctl daemon-reload
mount -a
swapon -a
```
Test every line now, not at boot

```
# /etc/auto.master.d/rhome.autofs
  /rhome  /etc/auto.rhome
# /etc/auto.rhome
  remoteuser1  -rw,sync
   repo.lab.example:/rhome/remoteuser1
```
autofs: master entry, then map

```
systemctl enable --now autofs
```
Enable it, or it's gone after reboot

FILES, TEXT AND SCRIPTS

```
find / -user jacques -type f -exec cp -a {}
   /root/findfiles/ \;
```
Find by owner, copy keeping attributes

```
find /usr/share -type f -size +30k -size -50k
```
+ bigger than, - smaller than

```
grep ACTIVE /opt/inventory.txt >
   /root/active.txt
```
Case matters: -i adds lines you didn't ask for

```
tar -czf backup.tar.gz /usr/local
tar -cjf backup.tar.bz2 /etc
```
z gzip, j bzip2, J xz

```
# in the script:
  #!/bin/bash
  [ -z "$1" ] && { echo "Usage: tool DIR";
   exit 1; }
```
Argument check, then chmod 755

```
flatpak remote-add --system labhub URL
flatpak install -y --system labhub
   org.lab.Notes
```
System-wide Flatpak

SERVICES, TIME AND TUNING

```
systemctl enable --now httpd
systemctl set-default multi-user.target
```
Running now, and at every boot

```
# /etc/chrony.conf: add
  server repo.lab.example iburst
systemctl restart chronyd
chronyc sources
```
^* means synchronized

```
tuned-adm recommend
tuned-adm profile virtual-guest
```
Use what recommend says

```
mkdir -p /var/log/journal
systemctl restart systemd-journald
```
Persistent journal

```
crontab -e -u natasha
  */3 * * * * logger "EX200 in progress"
```
minute hour day month weekday

THE 10 TRAPS

```
x Forgot touch /.autorelabel
```
Root can't log in after the reboot

```
x setsebool without -P
```
The boolean is gone after a reboot

```
x firewall-cmd --permanent without --reload
```
The port stays closed now

```
x usermod -G without -a
```
The user loses every other group

```
x lvextend without -r
```
The file system stays the old size

```
x Editing fstab without mount -a
```
A typo stops the machine from booting

```
x chcon instead of semanage fcontext
```
The label resets on the next relabel

```
x setenforce 0 to make it work
```
SELinux must stay enforcing: zero points

```
x login.defs after creating users
```
Existing users keep the old value

```
x Starting a service without enable
```
Gone after the reboot

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