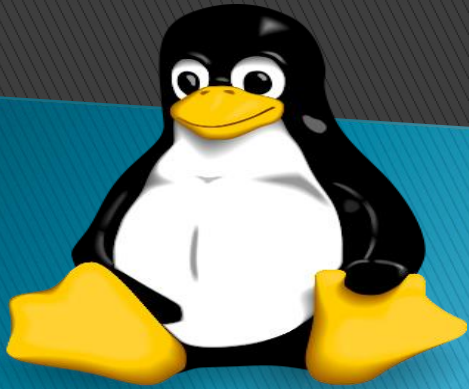


# Linux Boot Process

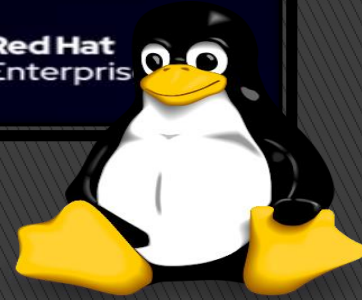


# RHEL9 Boot Process



**Booting Process of**  
**RHEL 9**

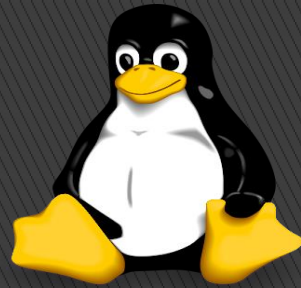
 Red Hat  
Enterprise



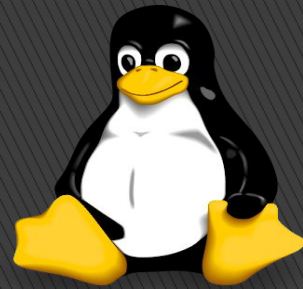
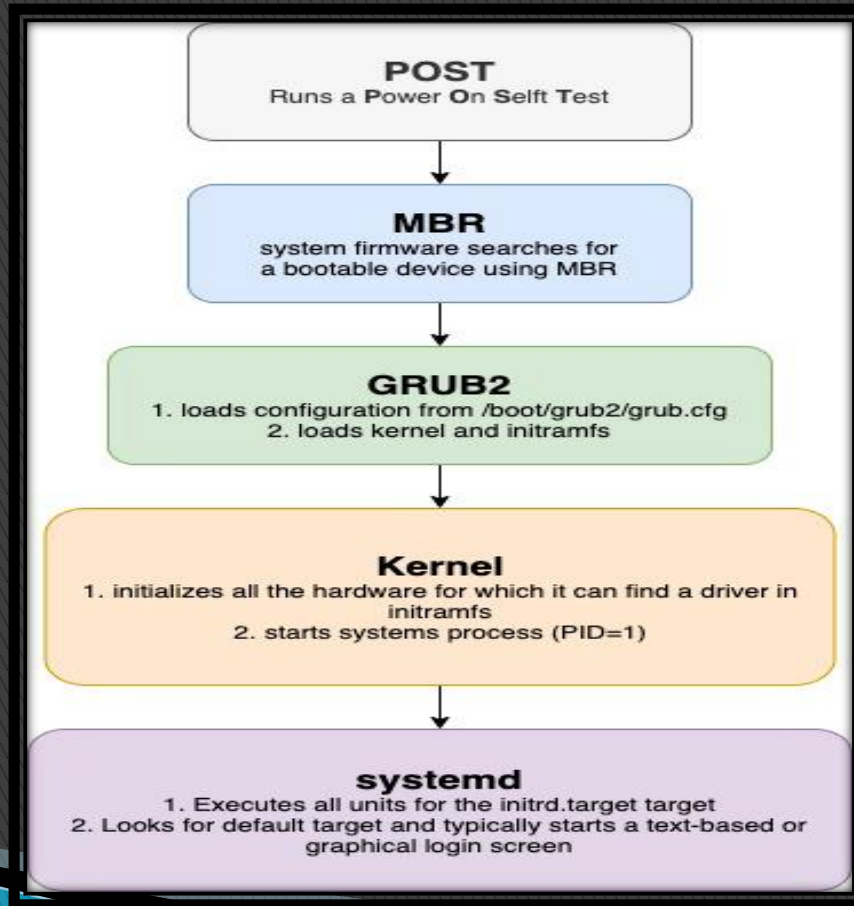
# What is boot process

Booting a computer refers to the process of powering on the computer and starting the operating system.

The boot process loads the operating system into main memory or the random access memory (RAM) installed on your computer



# RHEL9 Boot Process

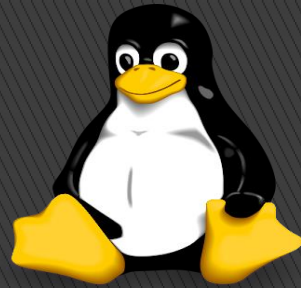


# Run Level

Runlevel is a state of a machine that defines how a machine should be login, what services and scripts should run when a machine starts.

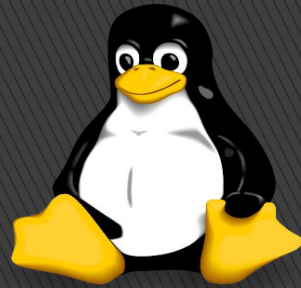
Runlevel are defined from 0 – 6.

Once the real file system is mounted, then kernel runs the first process i.e init (Systemd)



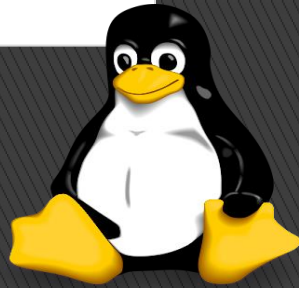
# There are 7 runlevel

1. Runlevel 0 – shut down the system
2. Runlevel 1 – single user mode
3. Runlevel 2 – multiuser mode without networking
4. Runlevel 3 – multiuser with text login screen
5. Runlevel 4– customized runlevel (not in use)
6. Runlevel 5 – System provide login prompt (GUI)
7. Runlevel 6 – Reboot System



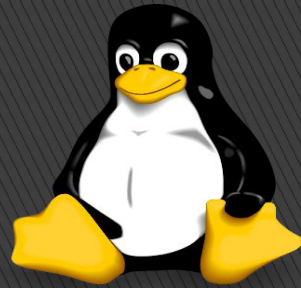
# There are 7 runlevel

Run Level	Target Units	Description
0	runlevel0.target, poweroff.target	Shut down and power off
1	runlevel1.target, rescue.target	Set up a rescue shell
2,3,4	runlevel[234].target, multi- user.target	Set up a nongraphical multi- user shell
5	runlevel5.target, graphical.target	Set up a graphical multi-user shell
6	runlevel6.target, reboot.target	Shut down and reboot the system



# For Check current (default) runlevel

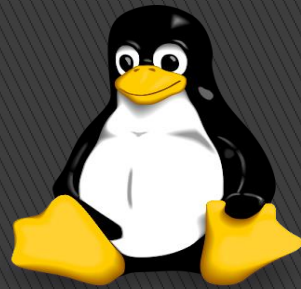
```
#systemctl get-default
```





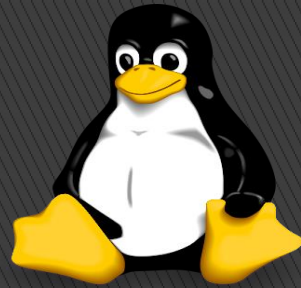
# For Set runlevel 3(Permanent)

```
#systemctl set-default multi-user.target
```



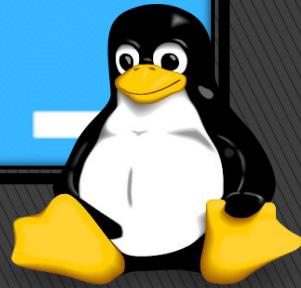
# For Set runlevel 5(Permanent)

```
#systemctl set-default graphical.target
```

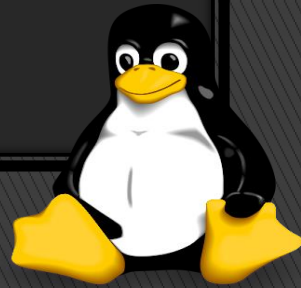
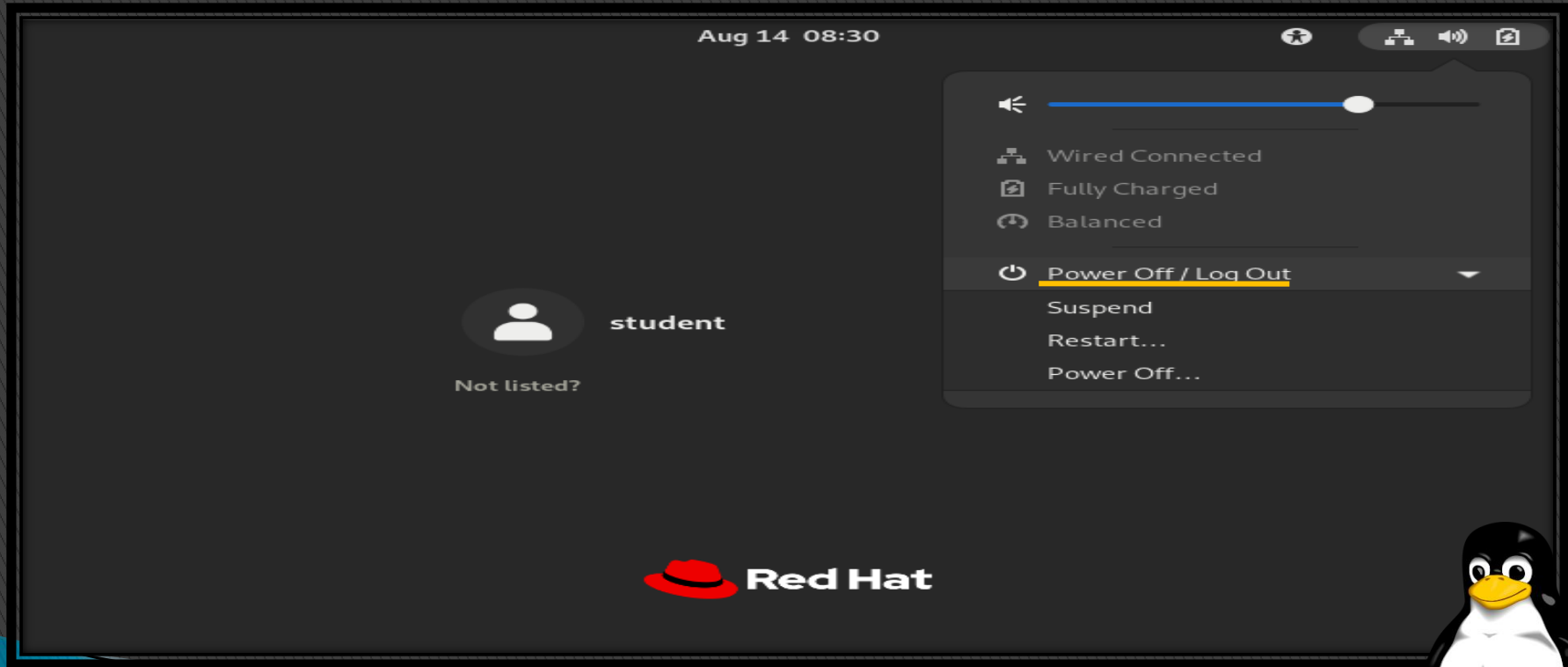


# Reset RHEL 9 root password

How to Restart or Change  
Root Password in Linux



# Step1: Restart System (alt+ctrl+del)



## Step2:

Reboot computer and press "Esc" key when show kernel line

```
Red Hat Enterprise Linux (5.14.0-70.13.1.el9_0.x86_64) 9.0 (Plow)  
Red Hat Enterprise Linux (0-rescue-05a0108f4c934bba8be800e49cb3c8c9) 9.0→
```

```
Use the ↑ and ↓ keys to change the selection.  
Press 'e' to edit the selected item, or 'c' for a command prompt.
```

Activat



## Step3: Select kernel line and press the 'e' key to edit

```
Red Hat Enterprise Linux (5.14.0-70.13.1.el9_0.x86_64) 9.0 (Plow)  
Red Hat Enterprise Linux (0-rescue-05a0108f4c934bba8be800e49cb3c8c9) 9.0→
```

Use the ↑ and ↓ keys to change the selection.  
Press 'e' to edit the selected item, or 'c' for a command prompt.

Activat

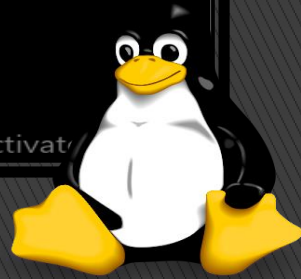


Step4: Go to end of the line which start from linux then type `rd.break` and press `ctrl+x` key

```
load_video
set gfxpayload=keep
insmod gzio
linux ($root)/vmlinuz-0-rescue-05a0108f4c934bba8be800e49cb3c8c9 root=/dev/mapp\
er/rhel_10-root ro crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M resume=/dev/ma\
pper/rhel_10-swap rd.lvm.lv=rhel_10/root rd.lvm.lv=rhel_10/swap rhgb quiet rd.\
break
initrd ($root)/initramfs-0-rescue-05a0108f4c934bba8be800e49cb3c8c9.img
```

Press Ctrl-x to start, Ctrl-c for a command prompt or Escape to discard edits and return to the menu. Pressing Tab lists possible completions.

Activat



## Step5: Press Enter Key, type following command `#mount -o remount,rw /sysroot`

```
[ 5.738301] Warning: Unmaintained hardware is detected: e1000:100E:8086 @ 00:00:00:03.0  
[ 6.113450] [drm:umw_host_printf [vmwgfx]] *ERROR* Failed to send host log message.
```

```
Generating "/run/initramfs/rdsosreport.txt"
```

```
Entering emergency mode. Exit the shell to continue.
```

```
Type "journalctl" to view system logs.
```

```
You might want to save "/run/initramfs/rdsosreport.txt" to a USB stick or /boot after mounting them and attach it to a bug report.
```

```
Press Enter for maintenance
```

```
(or press Control-D to continue):
```

```
sh-5.1# mount -o remount,rw /sysroot
```

Activate Windows  
Go to Settings to activate Windows.





## Step6: type command `#chroot /sysroot`

```
[ 5.738301] Warning: Unmaintained hardware is detected: e1000:100E:8086 @ 00
00:00:03.0
[ 6.113450] [drm:umw_host_printf [umwgfx]] *ERROR* Failed to send host log me
ssage.
```

```
Generating "/run/initramfs/rdsosreport.txt"
```

```
Entering emergency mode. Exit the shell to continue.
```

```
Type "journalctl" to view system logs.
```

```
You might want to save "/run/initramfs/rdsosreport.txt" to a USB stick or /boot
after mounting them and attach it to a bug report.
```

```
Press Enter for maintenance
```

```
(or press Control-D to continue):
```

```
sh-5.1# mount -o remount,rw /sysroot
```

```
sh-5.1# chroot /sysroot/
```

Activate Windows  
Go to Settings to activate Windows.



## Step7: set new root password

### #passwd root

```
[ 5.738301] Warning: Unmaintained hardware is detected: e1000:100E:8086 @ 00
00:00:03.0
[ 6.113450] [drm:umw_host_printf [umwgfx]] *ERROR* Failed to send host log me
ssage.
```

Generating "/run/initramfs/rdsosreport.txt"

Entering emergency mode. Exit the shell to continue.

Type "journalctl" to view system logs.

You might want to save "/run/initramfs/rdsosreport.txt" to a USB stick or /boot  
after mounting them and attach it to a bug report.

Press Enter for maintenance

(or press Control-D to continue):

```
sh-5.1# mount -o remount,rw /sysroot
```

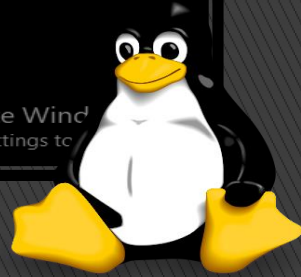
```
sh-5.1# chroot /sysroot/
```

```
sh-5.1# passwd root
```

Changing password for user root.

New password: \_

Activate Windows  
Go to Settings to activate Windows.



## Step8: type command `#touch /.autorelabel`

```
[ 6.782615] Warning: Unmaintained hardware is detected: e1000:100E:8086 @ 00
00:00:03.0
[ 7.370040] [drm:umw_host_printf [umwgfx]] *ERROR* Failed to send host log me
ssage.

Generating "/run/initramfs/rdsosreport.txt"

Entering emergency mode. Exit the shell to continue.
Type "journalctl" to view system logs.
You might want to save "/run/initramfs/rdsosreport.txt" to a USB stick or /boot
after mounting them and attach it to a bug report.

Press Enter for maintenance
(or press Control-D to continue):
sh-5.1# mount -o remount,rw /sysroot
sh-5.1# chroot /sysroot/
sh-5.1# passwd root
Changing password for user root.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
sh-5.1# touch /.autorelabel
```



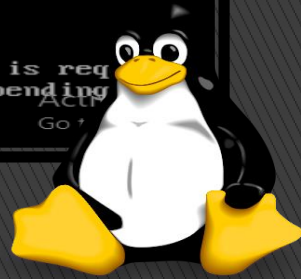
## Step9: Enter the 'exit' command twice

```
[ 6.782615] Warning: Unmaintained hardware is detected: e1000:100E:8086 @ 00
00:00:03.0
[ 7.370040] [drm:vmw_host_printf [vmwgfx]] *ERROR* Failed to send host log me
ssage.

Generating "/run/initramfs/rdsosreport.txt"

Entering emergency mode. Exit the shell to continue.
Type "journalctl" to view system logs.
You might want to save "/run/initramfs/rdsosreport.txt" to a USB stick or /boot
after mounting them and attach it to a bug report.

Press Enter for maintenance
(or press Control-D to continue):
sh-5.1# mount -o remount,rw /sysroot
sh-5.1# chroot /sysroot/
sh-5.1# passwd root
Changing password for user root.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
sh-5.1# touch /.autorelabel
sh-5.1# exit
exit
sh-5.1# exit
exit
[ 189.202669] selinux-autorelabel[930]: *** Warning -- SELinux targeted policy relabel is req
[ 189.203350] selinux-autorelabel[930]: *** Relabeling could take a very long time, depending
le
[ 189.203722] selinux-autorelabel[930]: *** system size and speed of hard drives.
```



## Step10 : After reboot system show Login prompt now login with new password

Once the reboot has completed you will be able to use the root account with your newly set password.

