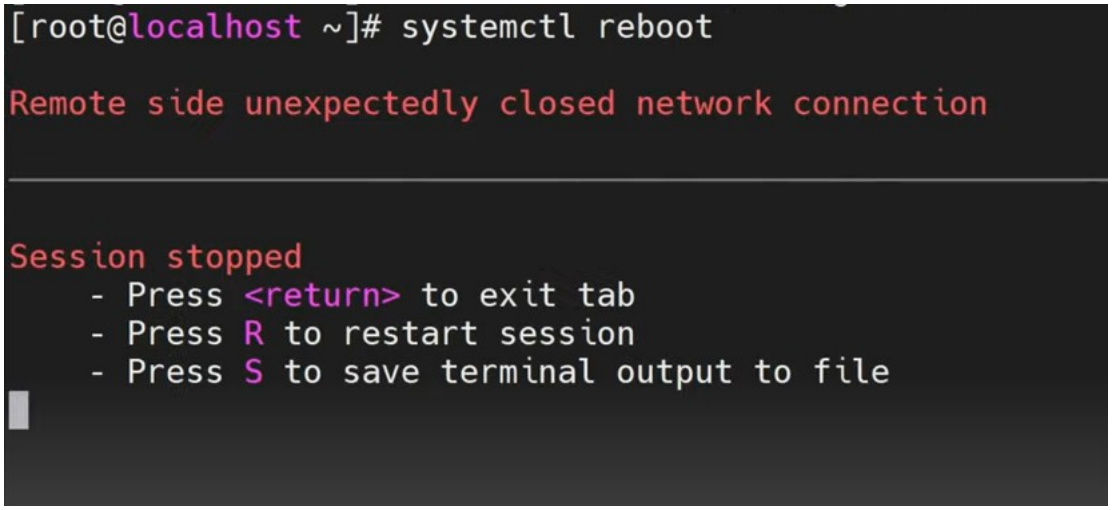
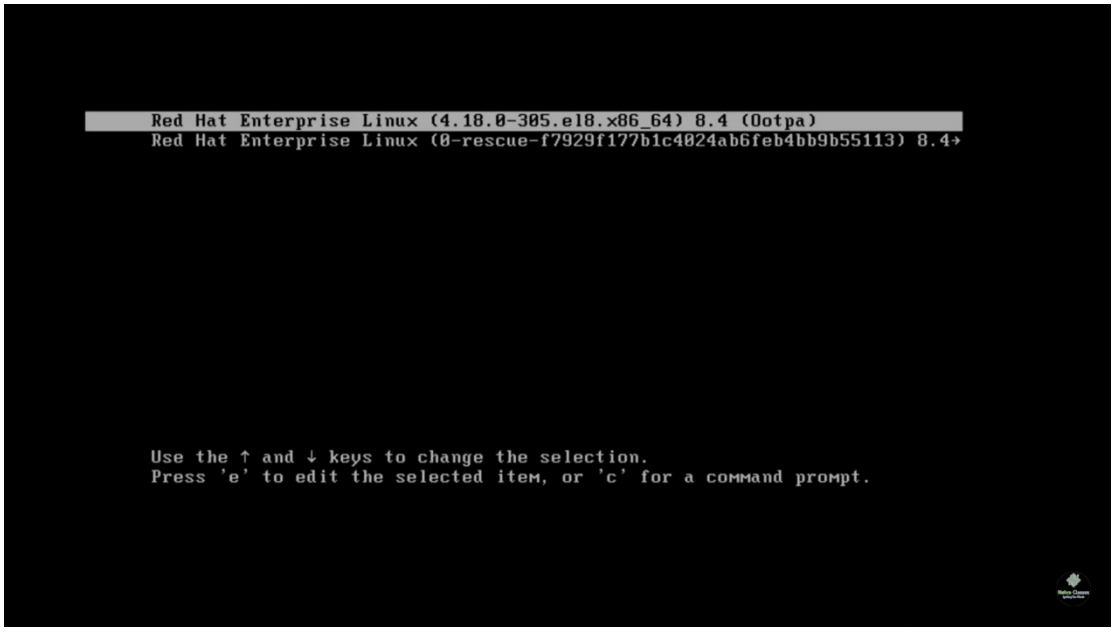
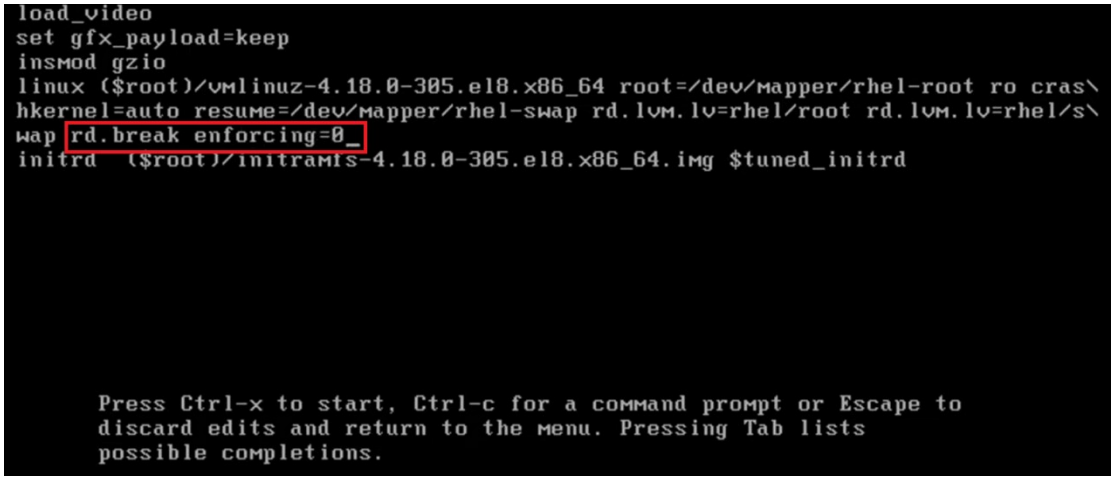
Reset Forgotten Root Password in RHEL SERVER



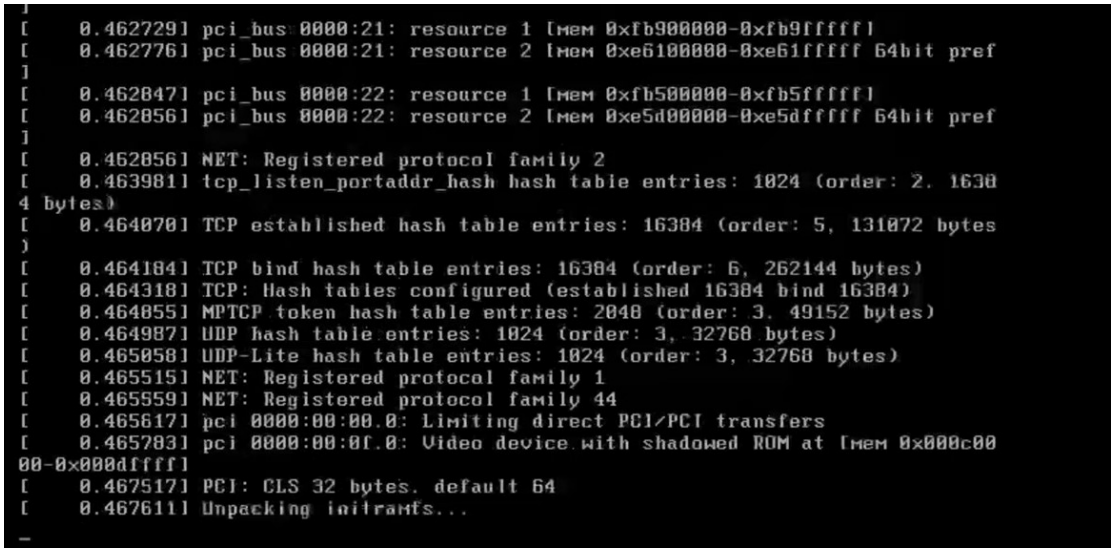
press E on the GRUB Line

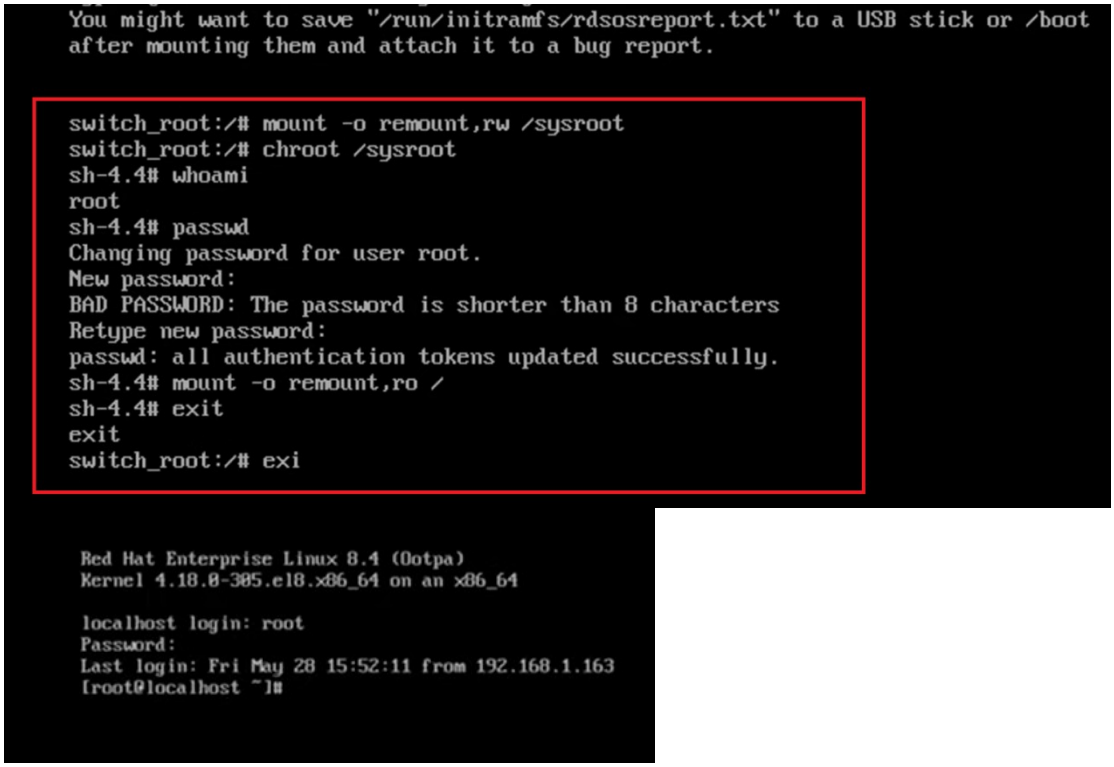

Red Hat Enterprise Linux (4.18.0-305.el8.x86_64) 8.4 (Ootpa)
Red Hat Enterprise Linux (0-rescue-f7929f177b1c4024ab6feb4bb9b55113) 8.4
Use the ↑ and ↓ keys to change the selection.
Press 'e' to edit the selected item, or 'c' for a command prompt.

v

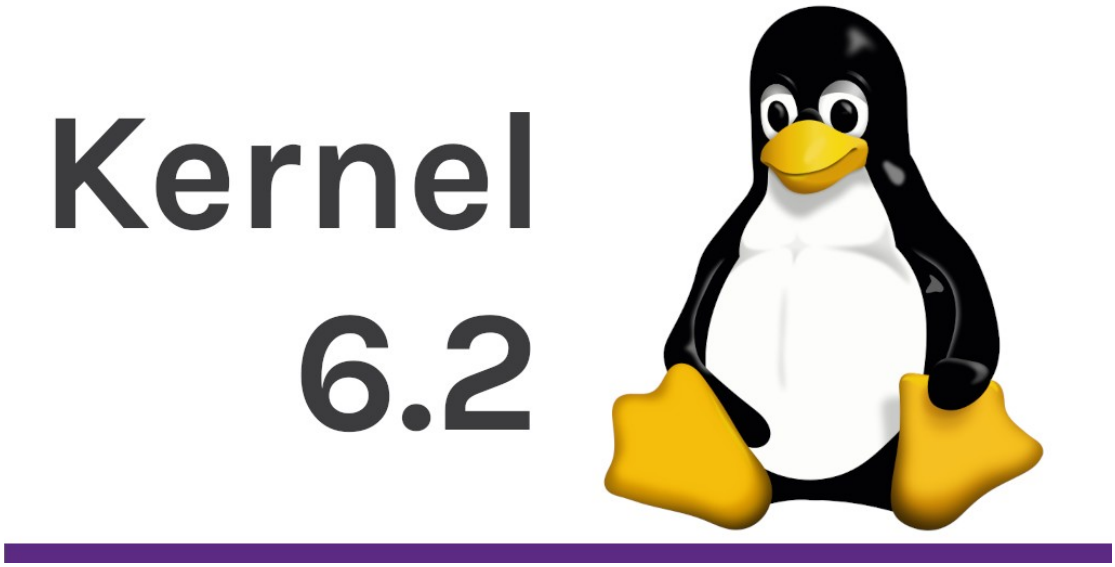

load_video
set gfx_payload=keep
insmod gzio
linux ($root)/vmlinuz-4.18.0-305.el8.x86_64 root=/dev/mapper/rhel-root ro cras\
hkernel=auto resume=/dev/mapper/rhel-swap rd.lvm.lv=rhel/root rd.lvm.lv=rhel/s\
wap rd.break enforcing=0
initrd ($root)/initramfs-4.18.0-305.el8.x86_64.img $tuned_initrd
Press Ctrl-x to start, Ctrl-c for a command prompt or Escape to
discard edits and return to the menu. Pressing Tab lists
possible completions.

 # Ctrl + X


[0.462729] pci_bus 0000:21: resource 1 [mem 0xfb900000-0xfb9fffff]
[0.462776] pci_bus 0000:21: resource 2 [mem 0xe6100000-0xe61fffff 64bit pref
]
[0.462847] pci_bus 0000:22: resource 1 [mem 0xfb500000-0xfb5fffff]
[0.462856] pci_bus 0000:22: resource 2 [mem 0xe5d00000-0xe5dfffff 64bit pref
]
[0.462856] NET: Registered protocol family 2
[0.463981] tcp_listen_portaddr_hash hash table entries: 1024 (order: 2, 1638
4 bytes)
[0.464070] TCP established hash table entries: 16384 (order: 5, 131072 bytes
)
[0.464184] TCP bind hash table entries: 16384 (order: 6, 262144 bytes)
[0.464318] TCP: Hash tables configured (established 16384 bind 16384)
[0.464855] MPTCP token hash table entries: 2048 (order: 3, 49152 bytes)
[0.464987] UDP hash table entries: 1024 (order: 3, 32768 bytes)
[0.465058] UDP-Lite hash table entries: 1024 (order: 3, 32768 bytes)
[0.465515] NET: Registered protocol family 1
[0.465559] NET: Registered protocol family 44
[0.465617] pci 0000:00:00.0: Limiting direct PCI/PCI transfers
[0.465783] pci 0000:00:0f.0: Video device with shadowed ROM at [mem 0x000c00
00-0x000dffff]
[0.467517] PCI: CLS 32 bytes, default 64
[0.467611] Unpacking initramfs...



Regenerate Initramfs File in Linux | Resolve Kernel Panic Error in Redhat Enterprise Linux



Kernel Panic Error Resolution in RHEL 7/8:

1. See the details of Kernel Panic Error (Identify the reason behind it eg. New Kernel, Corrupted ini

2. Login the system with root credentials through rescue mode.

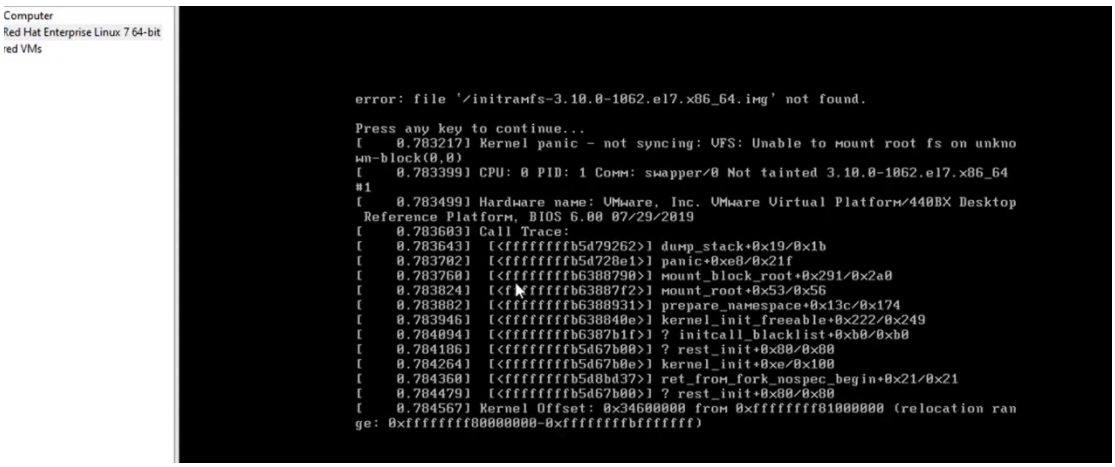
3. Take necesarry action as the reason of getting this error.
If it is due to new kernel, then downgrade it.
If it is due to corrupted or missing initramfs, regenerate it.

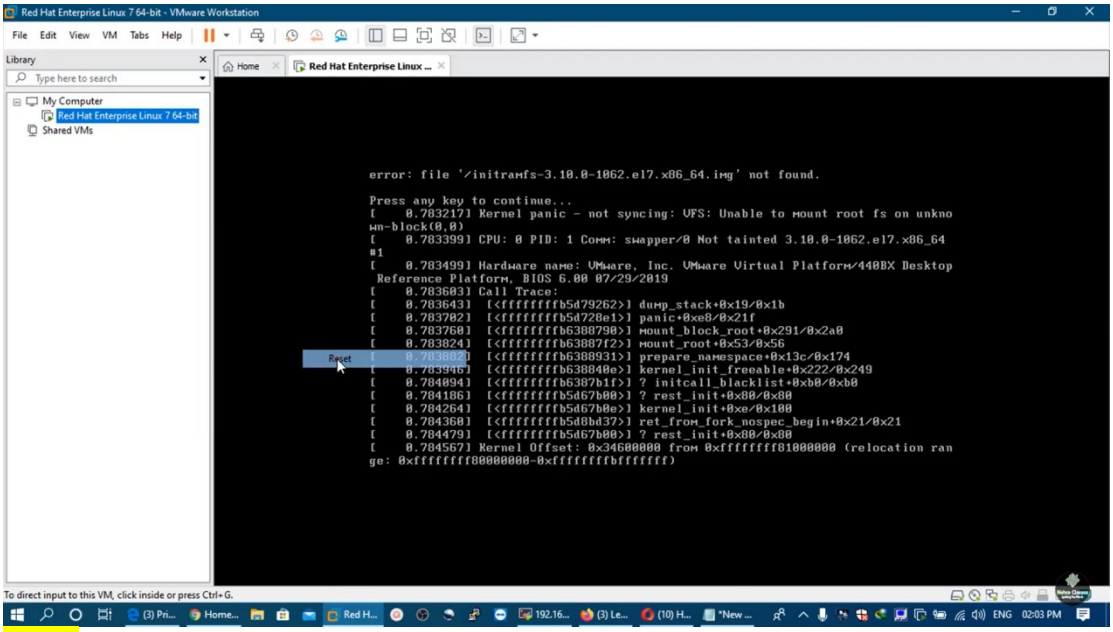
4. In our case it is due to corrupted initramfs. First check your kernel version.
 # uname -r

5. Now regenerate initramfs with below command: (here your kernel version should be same as in
 # mkinitrd --force initramfs-3.10.0-229.el7.x86_64.img 3.10.0-229.el7.x86_64

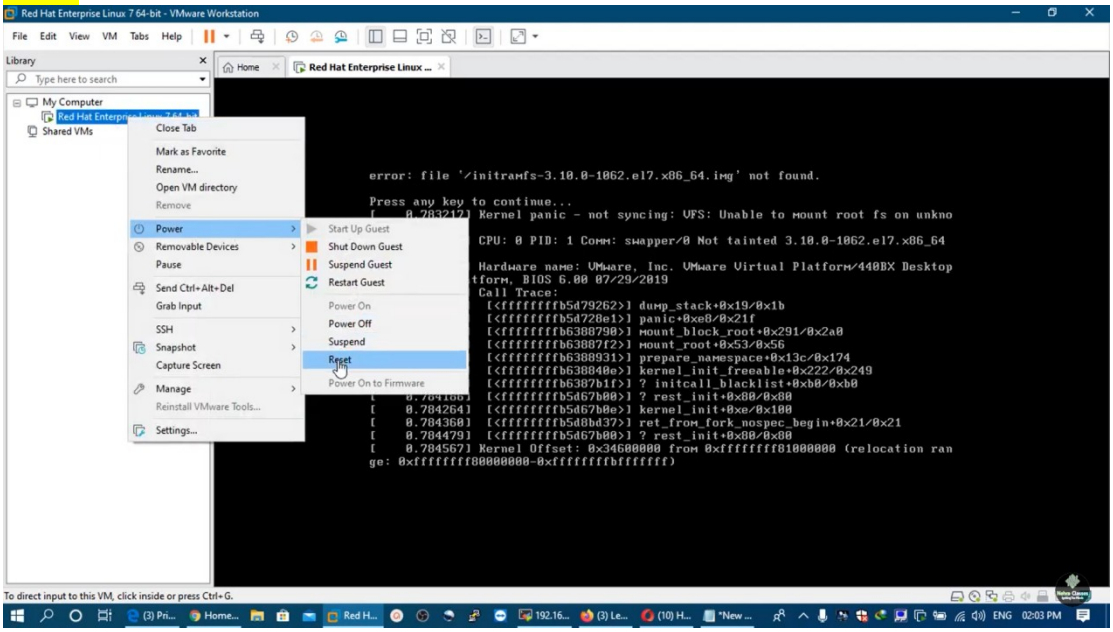
```
[root@localhost boot]# ll
total 138548
-rw-r--r--. 1 root root   152976 Jul 19  2019 config-3.10.0-1062.el7.x86_64
drwx------. 3 root root       17 Jun 28  2018 efi
drwx------. 5 root root       97 Mar  9 17:08 grub2
-rw-------. 1 root root 78650720 Mar  7 17:19 initramfs-0-rescue-3f99e6cfc4644a6f9de829a5588bef33.img
-rw-------. 1 root root 31865678 Mar  7 17:23 initramfs-3.10.0-1062.el7.x86_64.img
-rw-------. 1 root root 13814437 Mar  7 17:26 initramfs-3.10.0-1062.el7.x86_64kdump.img
-rw-r--r--. 1 root root   318717 Jul 19  2019 symvers-3.10.0-1062.el7.x86_64.gz
-rw-------. 1 root root  3594971 Jul 19  2019 System.map-3.10.0-1062.el7.x86_64
-rwxr-xr-x. 1 root root  6730032 Mar  7 17:19 vmlinuz-0-rescue-3f99e6cfc4644a6f9de829a5588bef33
-rwxr-xr-x. 1 root root  6730032 Jul 19  2019 vmlinuz-3.10.0-1062.el7.x86_64
[root@localhost boot]#


[root@localhost boot]# rm initramfs-3.10.0-1062.el7.x86_64.img
rm: remove regular file ‘initramfs-3.10.0-1062.el7.x86_64.img’? y
[root@localhost boot]# ll
total 107428
-rw-r--r--. 1 root root   152976 Jul 19  2019 config-3.10.0-1062.el7.x86_64
drwx------. 3 root root       17 Jun 28  2018 efi
drwx------. 5 root root       97 Mar  9 17:08 grub2
-rw-------. 1 root root 78650720 Mar  7 17:19 initramfs-0-rescue-3f99e6cfc4644a6f9de829a5588bef33.img
-rw-------. 1 root root 13814437 Mar  7 17:26 initramfs-3.10.0-1062.el7.x86_64kdump.img
-rw-r--r--. 1 root root   318717 Jul 19  2019 symvers-3.10.0-1062.el7.x86_64.gz
-rw-------. 1 root root  3594971 Jul 19  2019 System.map-3.10.0-1062.el7.x86_64
-rwxr-xr-x. 1 root root  6730032 Mar  7 17:19 vmlinuz-0-rescue-3f99e6cfc4644a6f9de829a5588bef33
-rwxr-xr-x. 1 root root  6730032 Jul 19  2019 vmlinuz-3.10.0-1062.el7.x86_64
[root@localhost boot]# init 6

Remote side unexpectedly closed network connection


Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```

 # Kernel Panic

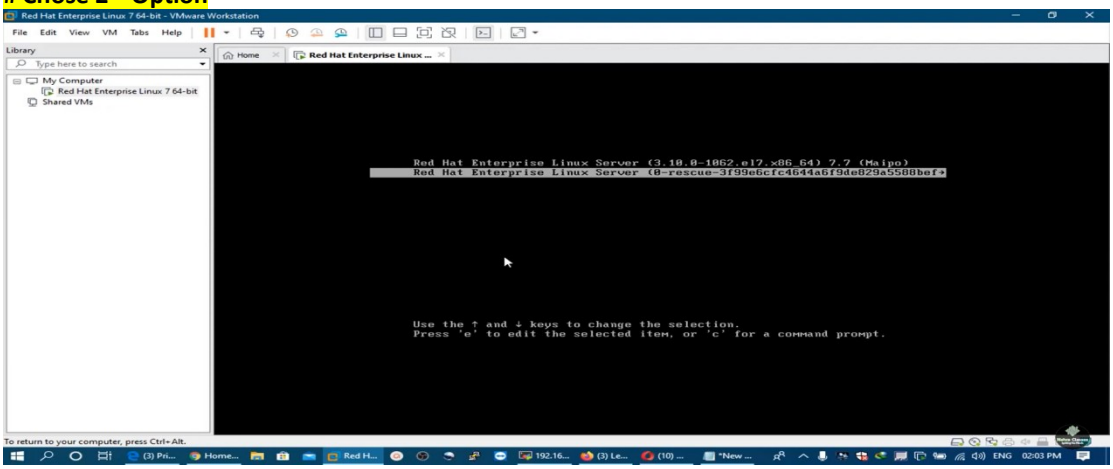




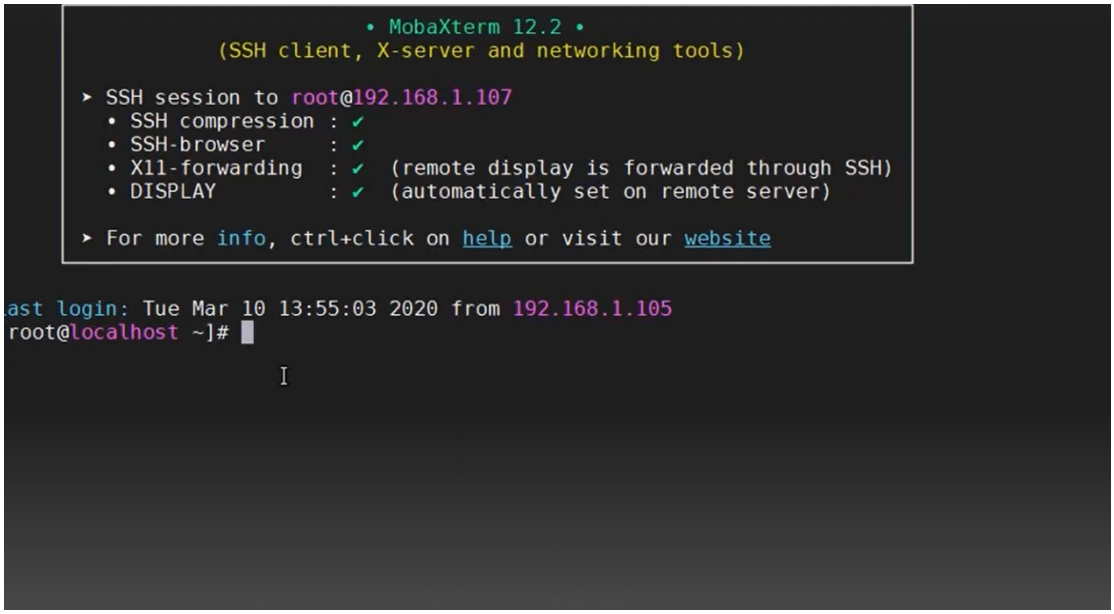
reset



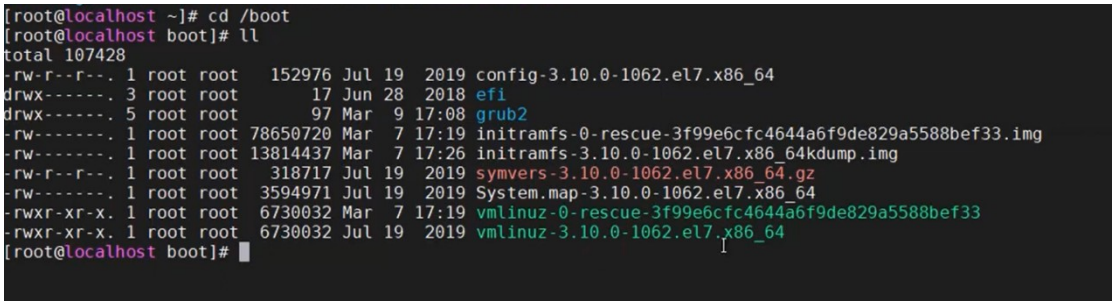
Chose 2nd Option



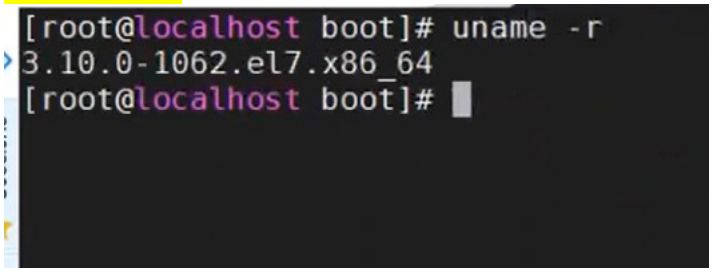
 # Login into root in Rescue mode

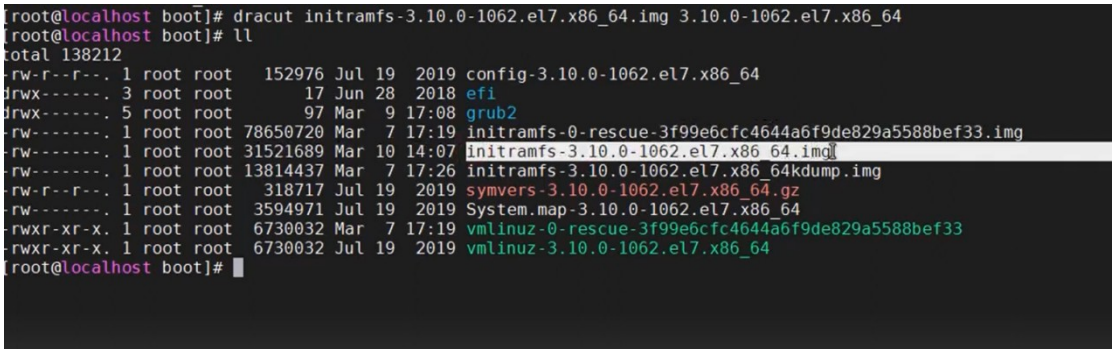


 # We need to create initramfs file



 # Kernel release

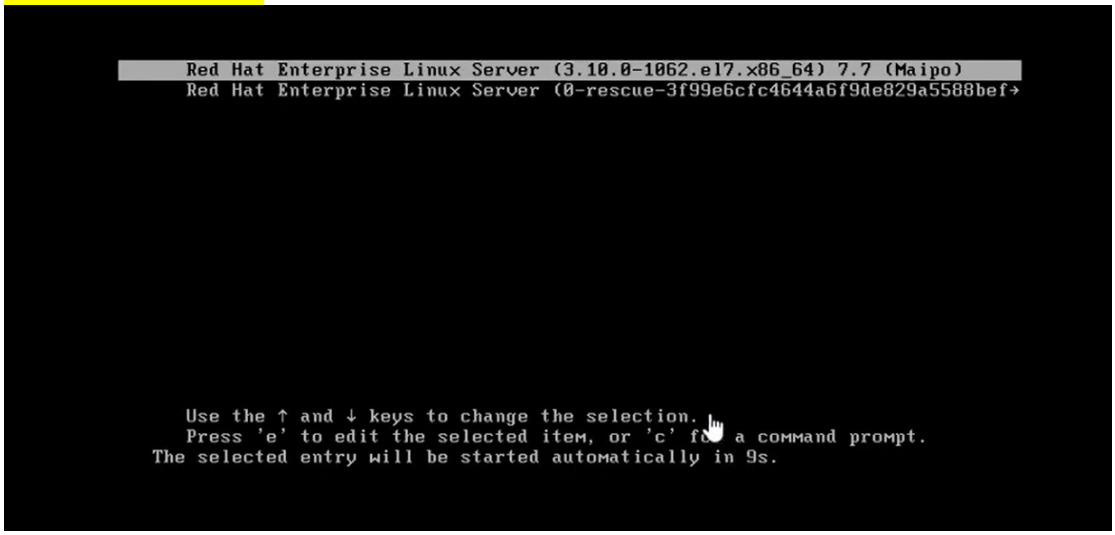




```
[root@localhost boot]# dracut initramfs-3.10.0-1062.el7.x86_64.img 3.10.0-1062.el7.x86_64
Will not override existing initramfs (/boot/initramfs-3.10.0-1062.el7.x86_64.img) without --force

Broadcast message from systemd-journald@localhost.localdomain (Tue 2020-03-10 14:07:47 IST):

dracut[15014]: Will not override existing initramfs (/boot/initramfs-3.10.0-1062.el7.x86_64.img) without --force


Message from syslogd@localhost at Mar 10 14:07:47 ...
 dracut:Will not override existing initramfs (/boot/initramfs-3.10.0-1062.el7.x86_64.img) without --force
[root@localhost boot]# dracut -f initramfs-3.10.0-1062.el7.x86_64.img 3.10.0-1062.el7.x86_64
[root@localhost boot]#
```

```
[root@localhost boot]# ll
total 138212
-rw-r--r--. 1 root root   152976 Jul 19  2019 config-3.10.0-1062.el7.x86_64
drwx------. 3 root root       17 Jun 28  2018 efi
drwx------. 5 root root       97 Mar  9 17:08 grub2
-rw-------. 1 root root 78650720 Mar  7 17:19 initramfs-0-rescue-3f99e6cfc4644a6f9de829a5588bef33.img
-rw-------. 1 root root 31522069 Mar 10 14:09 initramfs-3.10.0-1062.el7.x86_64.img
-rw-------. 1 root root 13814437 Mar  7 17:26 initramfs-3.10.0-1062.el7.x86_64kdump.img
-rw-r--r--. 1 root root   318717 Jul 19  2019 symvers-3.10.0-1062.el7.x86_64.gz
-rw-------. 1 root root  3594971 Jul 19  2019 System.map-3.10.0-1062.el7.x86_64
-rwxr-xr-x. 1 root root  6730032 Mar  7 17:19 vmlinuz-0-rescue-3f99e6cfc4644a6f9de829a5588bef33
-rwxr-xr-x. 1 root root  6730032 Jul 19  2019 vmlinuz-3.10.0-1062.el7.x86_64
[root@localhost boot]#


root@localhost boot]# mkinitrd --force initramfs-3.10.0-1062.el7.x86_64.img 3.10.0-1062.el7.x86_64
root@localhost boot]# init 6

emote side unexpectedly closed network connection
```

 # select normal mode -



Set Default Kernel To Boot Linux Server | Boot Up Linux Server With Old (Previous) Kernel

```
[root@puppet ~]# rpm -qa | grep kernel
kernel-tools-libs-3.10.0-1062.el7.x86_64
kernel-tools-3.10.0-1062.el7.x86_64
kernel-ml-5.5.13-1.el7.elrepo.x86_64
kernel-3.10.0-1062.el7.x86_64
abrt-addon-kerneloops-2.1.11-55.el7.x86_64
[root@puppet ~]# uname -a
Linux puppet 5.5.13-1.el7.elrepo.x86_64 #1 SMP Wed Mar 25 12:42:37 EDT 2020 x86_64 x86_64 x86_64 GNU/Linux
[root@puppet ~]#
```

```
[root@puppet ~]# rpm -qa | grep kernel
kernel-tools-libs-3.10.0-1062.el7.x86_64
kernel-tools-3.10.0-1062.el7.x86_64
kernel-ml-5.5.13-1.el7.elrepo.x86_64
kernel-3.10.0-1062.el7.x86_64
abrt-addon-kerneloops-2.1.11-55.el7.x86_64
[root@puppet ~]# cat /etc/default/grub
GRUB_TIMEOUT=5
GRUB_DISTRIBUTOR="$(sed 's, release .*$,,g' /etc/system-release)"
GRUB_DEFAULT=saved
GRUB_DISABLE_SUBMENU=true
GRUB_TERMINAL_OUTPUT="console"
GRUB_CMDLINE_LINUX="crashkernel=auto rd.lvm.lv=rhel/root rd.lvm.lv=rhel/swap rhgb quiet"
GRUB_DISABLE_RECOVERY="true"
[root@puppet ~]#
```

```
[root@puppet ~]# cat /boot/grub2/grubenv
# GRUB Environment Block
saved_entry=0
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################[root@puppet ~]#
```

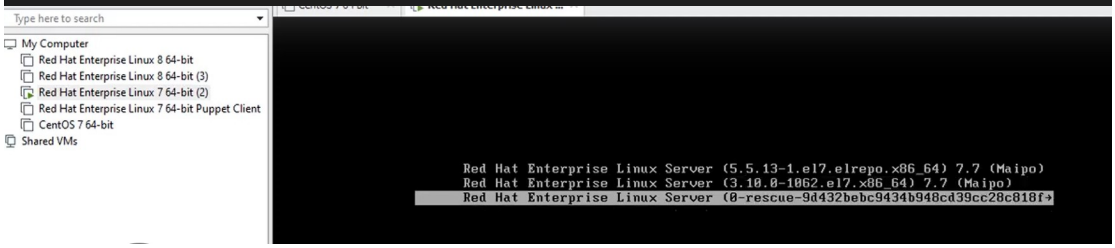
```
[root@puppet ~]# grub2-set-default 1
[root@puppet ~]# cat /boot/grub2/grubenv
# GRUB Environment Block
saved_entry=1
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################################################################################
############################################################[root@puppet ~]#
```

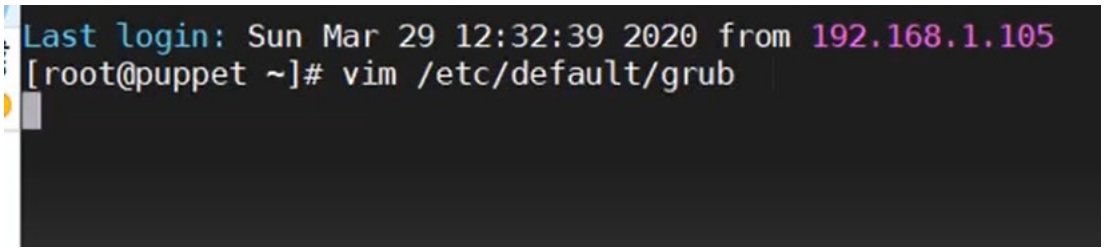
```
[root@puppet ~]# grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-5.5.13-1.el7.elrepo.x86_64
Found initrd image: /boot/initramfs-5.5.13-1.el7.elrepo.x86_64.img
Found linux image: /boot/vmlinuz-3.10.0-1062.el7.x86_64
Found initrd image: /boot/initramfs-3.10.0-1062.el7.x86_64.img
Found linux image: /boot/vmlinuz-0-rescue-9d432bebc9434b948cd39cc28c818f1b
Found initrd image: /boot/initramfs-0-rescue-9d432bebc9434b948cd39cc28c818f1b.img
done
[root@puppet ~]# init 6

Remote side unexpectedly closed network connection


Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```

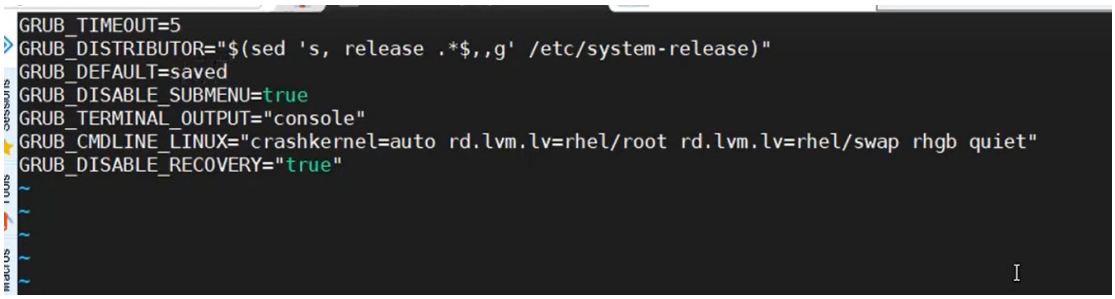
```
rrLast login: Sun Mar 29 11:12:40 2020 from 192.168.1.105
[root@puppet ~]# uname -a
Linux puppet 3.10.0-1062.el7.x86_64 #1 SMP Thu Jul 18 20:25:13 UTC 2019 x86_64 x86_64 x86_64 GNU/Linux
[root@puppet ~]# vim /etc/default/grub
[root@puppet ~]# grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-5.5.13-1.el7.elrepo.x86_64
Found initrd image: /boot/initramfs-5.5.13-1.el7.elrepo.x86_64.img
Found linux image: /boot/vmlinuz-3.10.0-1062.el7.x86_64
Found initrd image: /boot/initramfs-3.10.0-1062.el7.x86_64.img
Found linux image: /boot/vmlinuz-0-rescue-9d432bebc9434b948cd39cc28c818f1b
Found initrd image: /boot/initramfs-0-rescue-9d432bebc9434b948cd39cc28c818f1b.img
done
[root@puppet ~]#
```

 # Reboot

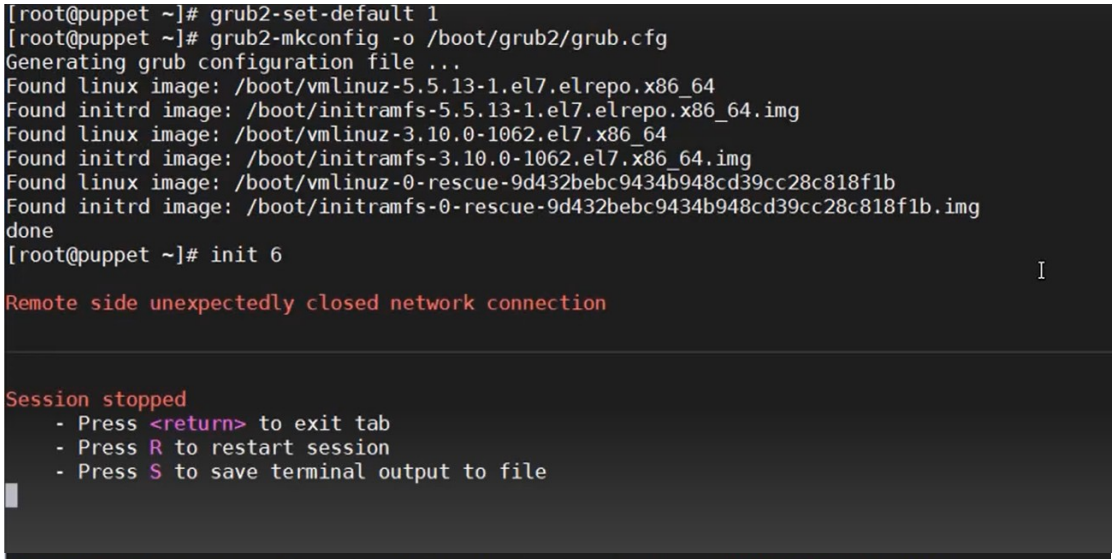
```
Last login: Sun Mar 29 12:30:04 2020 from 192.168.1.105
[root@puppet ~]# uname -a
Linux puppet 5.5.13-1.el7.elrepo.x86_64 #1 SMP Wed Mar 25 12:42:37 EDT 2020 x86_64 x86_64 x86_64 GNU/Linux
[root@puppet ~]# init 6

Remote side unexpectedly closed network connection


Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```

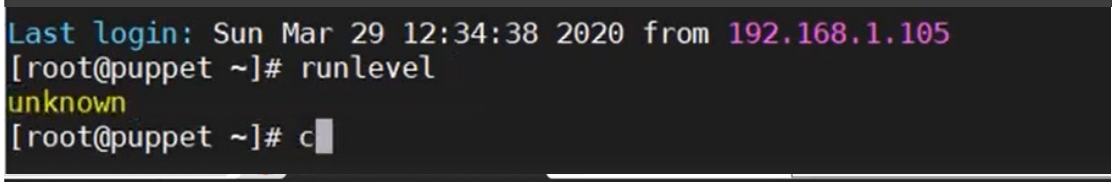


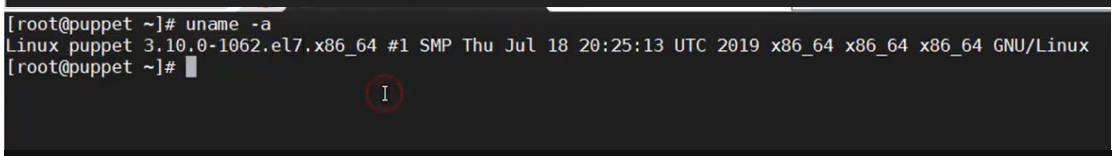





```
root@puppet ~]# vim /etc/default/grub
root@puppet ~]# cat /boot/grub2/grubenv
# GRUB Environment Block
saved_entry=1
################################################################################################################################################################
################################################################################################################################################################
################################################################################################################################################################
################################################################################################################################################################
################################################################################################################################################################
################################################################################################################################################################
################################################################################################################################################################
################grub2-mkconfig -o /boot/grub2/grub.cfg^C
root@puppet ~]#
```







How To Safely Remove Old Kernels From Linux Servers | Clean Up /boot File-System Safely

How to clean /boot in RHEL

1) If /boot is showing low space available check its contents.
2) Sometimes due to patching the older kerneles mighth be consuming space in it.

 # rpm -q kernel (checks which kernels are instaled on your system)
kernel-2.6.32-279.el6.x86_64
kernel-2.6.32-279.2.1.el6.x86_64
kernel-2.6.32-279.5.2.el6.x86_64
kernel-2.6.32-279.9.1.el6.x86_64

3) uname -a

4) yum remove kernel-2.6.32-279.el6.x86_64 (removes the oldest kernel safely)

```
[root@puppet ~]# uname -a
Linux puppet 3.10.0-1062.el7.x86_64 #1 SMP Thu Jul 18 20:25:13 UTC 2019 x86_64 x86_64 x86_64 GNU/Linux
[root@puppet ~]# rpm -qa | grep kernel
kernel-tools-libs-3.10.0-1062.el7.x86_64
kernel-tools-3.10.0-1062.el7.x86_64
kernel-ml-5.5.13-1.el7.elrepo.x86_64
kernel-3.10.0-1062.el7.x86_64
abrt-addon-kerneloops-2.1.11-55.el7.x86_64
[root@puppet ~]#
```

```
[root@puppet ~]# grub2-set-default 0
[root@puppet ~]# grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-5.5.13-1.el7.elrepo.x86_64
Found initrd image: /boot/initramfs-5.5.13-1.el7.elrepo.x86_64.img
Found linux image: /boot/vmlinuz-3.10.0-1062.el7.x86_64
Found initrd image: /boot/initramfs-3.10.0-1062.el7.x86_64.img
Found linux image: /boot/vmlinuz-0-rescue-9d432bebc9434b948cd39cc28c818f1b
Found initrd image: /boot/initramfs-0-rescue-9d432bebc9434b948cd39cc28c818f1b.img
done
[root@puppet ~]# init 6

Remote side unexpectedly closed network connection


Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```

```
rLast login: Sun Mar 29 19:13:01 2020 from 192.168.1.105
[root@puppet ~]# uname -a
Linux puppet 5.5.13-1.el7.elrepo.x86_64 #1 SMP Wed Mar 25 12:42:37 EDT 2020 x86_64 x86_64 x86_64 GNU/Linux
[root@puppet ~]# rpm -q kernel
kernel-3.10.0-1062.el7.x86_64
[root@puppet ~]# yum remove kernel-3.10.0-1062.el7.x86_64
Loaded plugins: langpacks, product-id, search-disabled-repos, subscription-manager
This system is not registered with an entitlement server. You can use subscription-manager to register.
Resolving Dependencies
--> Running transaction check
---> Package kernel.x86_64 0:3.10.0-1062.el7 will be erased
--> Processing Dependency: kernel(seq_read) = 0x9c3df9b4 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(seq_write) = 0x97544bdc for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(single_open) = 0x16a5a12f for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(single_release) = 0x2296f507 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(sme_me_mask) = 0x17fbce60 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(snprintf) = 0x28318305 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(sprintf) = 0x91715312 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(sscanf) = 0x20c55ae0 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(submit_bio) = 0xc4076f47 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(usecs_to_jiffies) = 0xb54533f7 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(vmalloc_base) = 0x9cb986f2 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(vmalloc_to_page) = 0x18e6b5cd for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(vmemmap_base) = 0x97651e6c for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(vprintk) = 0xbf8ba54a for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(vsnprintf) = 0x99195078 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(wait_for_completion) = 0x6d0aba34 for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(wait_for_completion_interruptible) = 0x015ddbdc for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Processing Dependency: kernel(wake_up_process) = 0xe65cdceb for package: kmod-kvdo-6.1.2.41-5.el7.x86_64
--> Running transaction check
---> Package kmod-kvdo.x86_64 0:6.1.2.41-5.el7 will be erased
--> Processing Dependency: kmod-kvdo >= 6.1 for package: vdo-6.1.2.41-4.el7.x86_64
--> Running transaction check
---> Package vdo.x86_64 0:6.1.2.41-4.el7 will be erased
--> Finished Dependency Resolution
```

```
puppetlabs-pc1/x86_64                                                                  | 2.5 kB  00:00:00

Dependencies Resolved

================================================================================================================================
 Package                    Arch                    Version                         Repository                          Size
================================================================================================================================
Removing:
 kernel                     x86_64                  3.10.0-1062.el7                 @anaconda/7.7                       64 M
Removing for dependencies:
 kmod-kvdo                  x86_64                  6.1.2.41-5.el7                  @anaconda/7.7                      1.2 M
 vdo                        x86_64                  6.1.2.41-4.el7                  @anaconda/7.7                      3.3 M

Transaction Summary
================================================================================================================================
Remove  1 Package (+2 Dependent packages)

Installed size: 69 M
Is this ok [y/N]: n
Exiting on user command
Your transaction was saved, rerun it with:
 yum load-transaction /tmp/yum_save_tx.2020-03-29.19-21.0oa7B7.yumtx
[root@puppet ~]# c
```

```
[root@puppet ~]# df -hT
Filesystem              Type      Size  Used Avail Use% Mounted on
devtmpfs                devtmpfs  459M     0  459M   0% /dev
tmpfs                   tmpfs     478M     0  478M   0% /dev/shm
tmpfs                   tmpfs     478M  7.5M  471M   2% /run
tmpfs                   tmpfs     478M     0  478M   0% /sys/fs/cgroup
/dev/mapper/rhel-root   xfs        17G  4.2G   13G  25% /
/dev/sda1               xfs      1014M  213M  802M  21% /boot
tmpfs                   tmpfs     96M     0   96M   0% /run/user/0
tmpfs                   tmpfs     96M  8.0K   96M   1% /run/user/42
[root@puppet ~]#
```

```
[root@puppet ~]# yum remove kernel-3.10.0-1062.el7.x86_64 -y
Loaded plugins: langpacks, product-id, search-disabled-repos, subscription-manager
This system is not registered with an entitlement server. You can use subscription-manager to register.
Resolving Dependencies
--> Running transaction check
---> Package kernel.x86_64 0:3.10.0-1062.el7 will be erased

--> Running transaction check
---> Package vdo.x86_64 0:6.1.2.41-4.el7 will be erased
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package            Arch            Version                 Repository    Size
================================================================================
Removing:
 kernel             x86_64          3.10.0-1062.el7         @anaconda/7.7  64 M
Removing for dependencies:
 kmod-kvdo          x86_64          6.1.2.41-5.el7          @anaconda/7.7 1.2 M
 vdo                x86_64          6.1.2.41-4.el7          @anaconda/7.7 3.3 M

Transaction Summary
================================================================================
Remove  1 Package (+2 Dependent packages)

Installed size: 69 M
Downloading packages:
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction

Remove  1 Package (+2 Dependent packages)

Installed size: 69 M
Downloading packages:
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Erasing    : vdo-6.1.2.41-4.el7.x86_64                                   1/3
  Erasing    : kmod-kvdo-6.1.2.41-5.el7.x86_64                             2/3
  Erasing    : kernel-3.10.0-1062.el7.x86_64                               3/3
  Verifying  : vdo-6.1.2.41-4.el7.x86_64                                   1/3
  Verifying  : kmod-kvdo-6.1.2.41-5.el7.x86_64                             2/3
  Verifying  : kernel-3.10.0-1062.el7.x86_64                               3/3

Removed:
  kernel.x86_64 0:3.10.0-1062.el7

Dependency Removed:
  kmod-kvdo.x86_64 0:6.1.2.41-5.el7          vdo.x86_64 0:6.1.2.41-4.el7

Complete!
[root@puppet ~]#
```

Customize, Repair & Change GRUB in Linux | Fix GRUB2 Errors

Customise/Repair or Change GRUB2 in Redhat Enterprise Linux 7/8

/boot/grub2/grub.cfg ====) Auto generated GRUB Configuration File

/etc/grub.d ===) GRUB Template Directory which contains other grub template files.

/etc/default/grub ===) GRUB Settings File

To regenerate GRUB Configruation File with changed settings from /etc/default/grub use below c

grub2-mkconfig -o /boot/grub2/grub.cfg

/boot/grub2/grub.cfg ====) Auto generated GRUB Configuration File

/etc/grub.d ===) GRUB Template Directory which contains other grub template files.

/etc/default/grub ===) GRUB Settings File

To regenerate GRUB Configruation File with changed settings from /etc/default/grub use below command

grub2-mkconfig -o /boot/grub2/grub.cfg

```
[root@localhost ~]# cd /boot
[root@localhost boot]# ll
total 138548
-rw-r--r--. 1 root root   152976 Jul 19  2019 config-3.10.0-1062.el7.x86_64
drwx------. 3 root root       17 Jun 28  2018 efi
drwx------. 5 root root       97 Mar  9 16:54 grub2
-rw-------. 1 root root 78650720 Mar  7 17:19 initramfs-0-rescue-3f99e6cfc4644a6f9de829a5588bef33.img
-rw-------. 1 root root 31865678 Mar  7 17:23 initramfs-3.10.0-1062.el7.x86_64.img
-rw-------. 1 root root 13814437 Mar  7 17:26 initramfs-3.10.0-1062.el7.x86_64kdump.img
-rw-r--r--. 1 root root   318717 Jul 19  2019 symvers-3.10.0-1062.el7.x86_64.gz
-rw-------. 1 root root  3594971 Jul 19  2019 System.map-3.10.0-1062.el7.x86_64
-rwxr-xr-x. 1 root root  6730032 Mar  7 17:19 vmlinuz-0-rescue-3f99e6cfc4644a6f9de829a5588bef33
-rwxr-xr-x. 1 root root  6730032 Jul 19  2019 vmlinuz-3.10.0-1062.el7.x86_64
[root@localhost boot]#
```

```
[root@localhost boot]# cd grub2
[root@localhost grub2]# ll
total 32
-rw-r--r--. 1 root root   84 Mar  7 17:22 device.map
drwxr-xr-x. 2 root root   25 Mar  7 17:22 fonts
-rw-r--r--. 1 root root 4302 Mar  9 16:54 grub.cfg
-rw-r--r--. 1 root root 1024 Mar  7 17:23 grubenv
drwxr-xr-x. 2 root root 8192 Mar  7 17:22 i386-pc
drwxr-xr-x. 2 root root 4096 Mar  7 17:22 locale
[root@localhost grub2]#
```

```
[root@localhost grub2]# cat grub.cfg

#
# DO NOT EDIT THIS FILE
#
# It is automatically generated by grub2-mkconfig using templates
# from /etc/grub.d and settings from /etc/default/grub
#

### BEGIN /etc/grub.d/00_header ###
set pager=1

if [ -s $prefix/grubenv ]; then
  load_env
fi
if [ "${next_entry}" ] ; then
   set default="${next_entry}"
   set next_entry=
   save_env next_entry
   set boot_once=true
else
   set default="${saved_entry}"
fi

if [ x"${feature_menuentry_id}" = xy ]; then
  menuentry_id_option="--id"
else
  menuentry_id_option=""
```

```
### END /etc/grub.d/10_linux ###

### BEGIN /etc/grub.d/20_linux_xen ###
### END /etc/grub.d/20_linux_xen ###

### BEGIN /etc/grub.d/20_ppc_terminfo ###
### END /etc/grub.d/20_ppc_terminfo ###

### BEGIN /etc/grub.d/30_os-prober ###
### END /etc/grub.d/30_os-prober ###

### BEGIN /etc/grub.d/40_custom ###
# This file provides an easy way to add custom menu entries.  Simply type the
# menu entries you want to add after this comment.  Be careful not to change
# the 'exec tail' line above.
### END /etc/grub.d/40_custom ###

### BEGIN /etc/grub.d/41_custom ###
if [ -f  ${config_directory}/custom.cfg ]; then
  source ${config_directory}/custom.cfg
elif [ -z "${config_directory}" -a -f  $prefix/custom.cfg ]; then
  source $prefix/custom.cfg;
fi
### END /etc/grub.d/41_custom ###
[root@localhost grub2]#
```

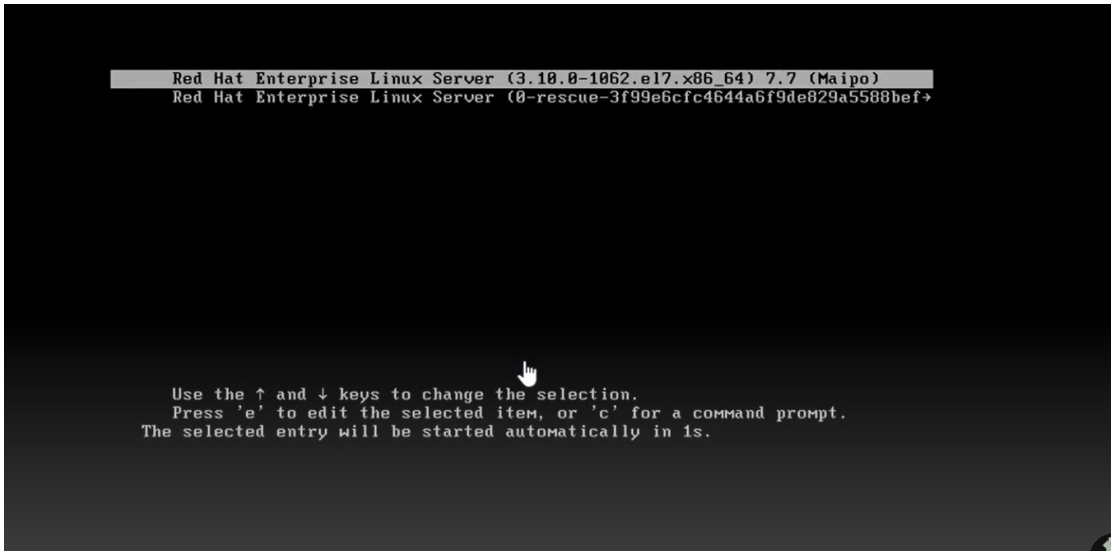


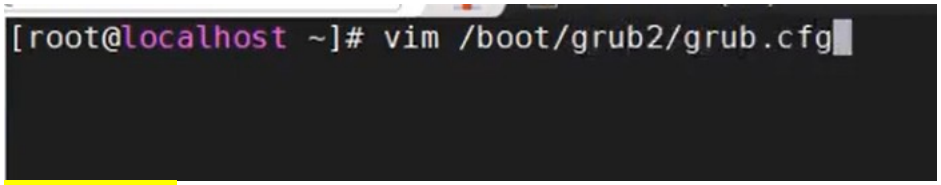
```
root@localhost grub2]# vim /etc/default/grub
```

```
GRUB_TIMEOUT=10
GRUB_DISTRIBUTOR="$(sed 's, release .*$,,g' /etc/system-release)"
GRUB_DEFAULT=saved
GRUB_DISABLE_SUBMENU=true
GRUB_TERMINAL_OUTPUT="console"
GRUB_CMDLINE_LINUX="crashkernel=auto rd.lvm.lv=rhel/root rd.lvm.lv=rhel/swap rhgb quiet"
GRUB_DISABLE_RECOVERY="true"
~
~
~
```

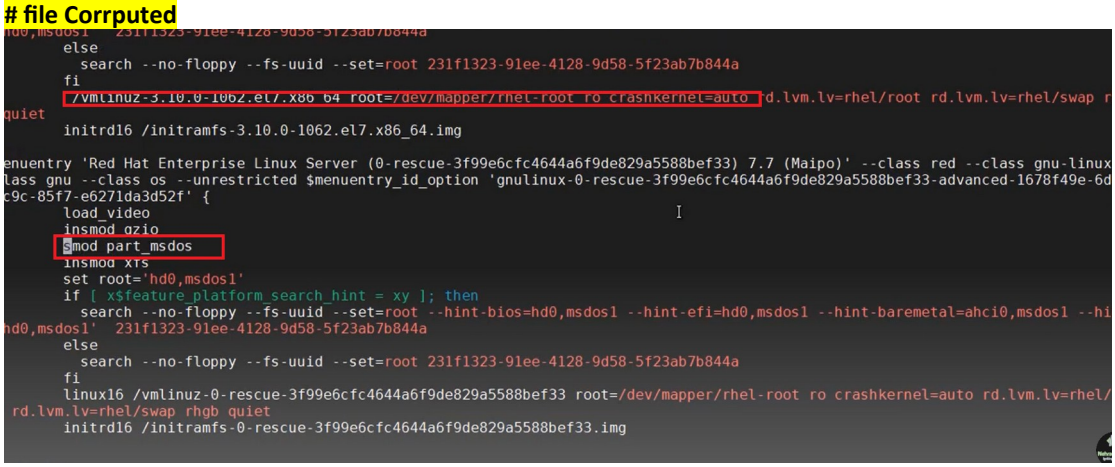
```
[root@localhost grub2]# grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-3.10.0-1062.el7.x86_64
Found initrd image: /boot/initramfs-3.10.0-1062.el7.x86_64.img
Found linux image: /boot/vmlinuz-0-rescue-3f99e6cfc4644a6f9de829a5588bef33
Found initrd image: /boot/initramfs-0-rescue-3f99e6cfc4644a6f9de829a5588bef33.img
done
[root@localhost grub2]#
```

```
[root@localhost grub2]# init 6

Remote side unexpectedly closed network connection


Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```



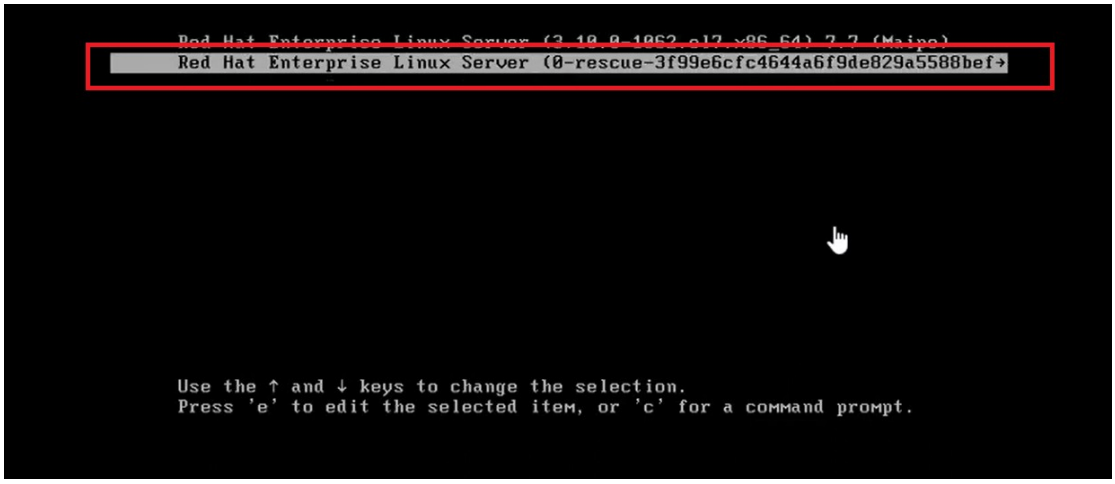


 # file Corrputed



Reboot

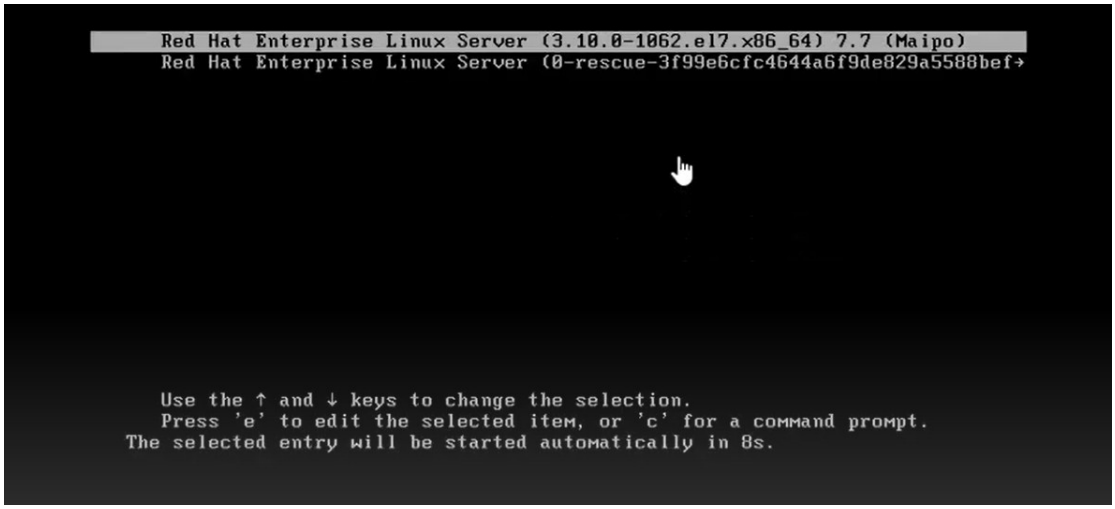
 # Choose



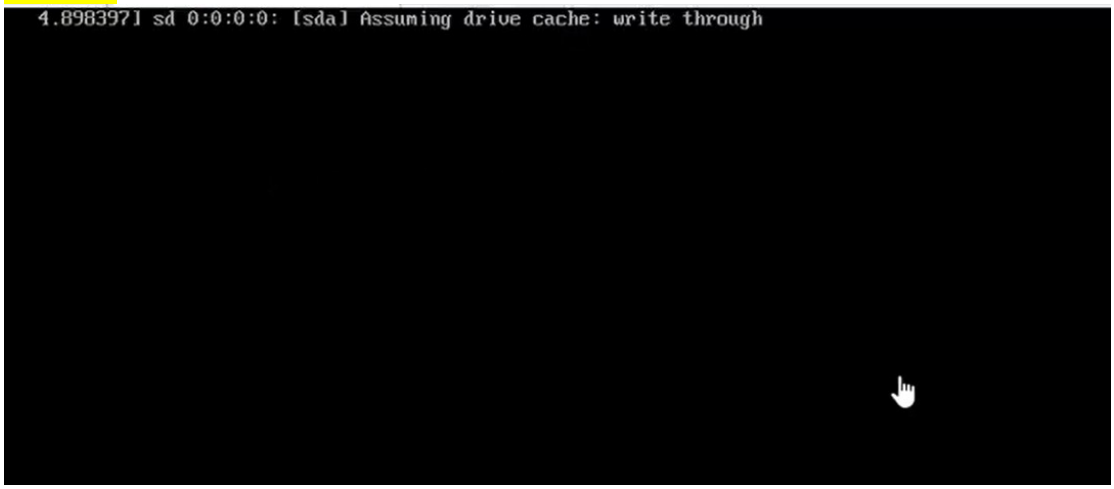
 # Rescue Kernel Img

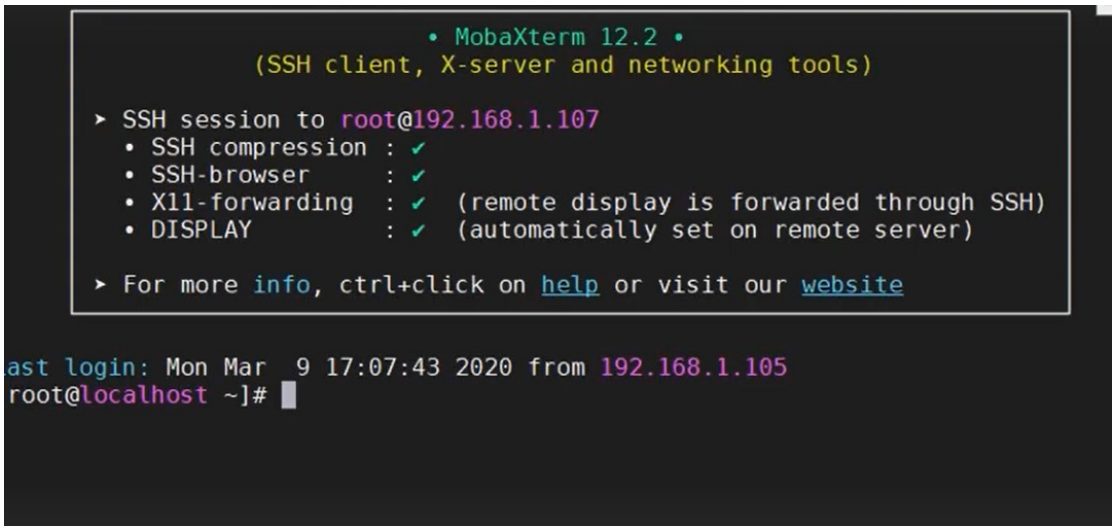
 # Regenerate img file on rescue mode & then reboot the system in normal Mode

```
[root@localhost ~]# grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-3.10.0-1062.el7.x86_64
Found initrd image: /boot/initramfs-3.10.0-1062.el7.x86_64.img
Found linux image: /boot/vmlinuz-0-rescue-3f99e6cfc4644a6f9de829a5588bef33
Found initrd image: /boot/initramfs-0-rescue-3f99e6cfc4644a6f9de829a5588bef33.img
done
[root@localhost ~]# init 6

Remote side unexpectedly closed network connection


Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```



 # No Error





Set & Remove GRUB Password in RHEL Or CentOS | Break GRUB Password without Root Password

Why should a Linux boot loader have password protection?

The following are the primary reasons for password protecting a Linux boot loader:
1. Preventing Access to Single User Mode – If an attacker can boot into single user mode, he becomes the root user.
2. Preventing Access to the GRUB Console – If the machine uses GRUB as its boot loader, an attacker can use the GRUB editor interface to change its configuration or to gather information using the cat command.
3. Preventing Access to Non-Secure Operating Systems – If it is a dual-boot system, an attacker can select at boot time an operating system, such as DOS, which ignores access controls and file permissions.

Password protecting GRUB2:

Follow the steps below to password protect GRUB2 in RHEL 7.
1. Remove –unrestricted from the main CLASS= declaration in /etc/grub.d/10_linux file.
This can be done by using sed to replace the

```
sed -i "/^CLASS=/s/ --unrestricted//" /etc/grub.d/10_linux
```

2. If a user hasn't already been configured, use grub2-setpassword to set a password for the root user :

```
grub2-setpassword
```

This creates a file /boot/grub2/user.cfg if not already present, which contains the hashed GRUB bootloader password. This utility only supports configurations where there is a single root user.
Example /boot/grub2/user.cfg file :

```
cat /boot/grub2/user.cfg
```

3. Recreate the grub config with grub2-mkconfig :

```
grub2-mkconfig -o /boot/grub2/grub.cfg
```

```
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-3.10.0-327.el7.x86_64
Found initrd image: /boot/initramfs-3.10.0-327.el7.x86_64.img
Found linux image: /boot/vmlinuz-0-rescue-f9725b0c842348ce9e0bc81968cf7181
Found initrd image: /boot/initramfs-0-rescue-f9725b0c842348ce9e0bc81968cf7181.img
done
```

4. Reboot the server and verify.

shutdown -r now

Note that all defined grub menu entries will now require entering user & password each time at boot; henceforth, the system will not boot any kernel without direct user intervention from the console. When prompted for user, enter "root". When prompted for password, enter whatever was passed to the grub2-setpassword command :

==========

Remove password protection

To remove the password protection we can add the –unrestricted text in the main CLASS= declaration in /etc/grub.d/10_linux file again. Another way is to remove the /boot/grub2/user.cfg file which stores the hashed GRUB bootloader password.

rm -f /boot/grub2/user.cfg

(Credits: https://www.thegeekdiary.com/centos-r...)

==========

Break/Remove the forgotten GRUB2 Password: (in case you don't know the root password)

—

If you don't know the GRUB password you can't easily reset the forgotten root password. So to reset the root password or remove the GRUB password in such scenario you need to boot up your server with iso image.

1. Boot with ISO image.

2. Select troubleshooting option.

3. From Troubleshooting options select Rescue a CentOS/RedHat Linux system option.

4. Now select the first option which mounts the installed Linux in /mnt/sysimage directory.

5. Now run following commands

#chroot /mnt/sysimage
#ls

6. Open /etc/grub2.cfg file in vi editor and comment user credential lines (username, export & password lines as shown in video):

vim /etc/grub2.cfg

Exit and Reboot again with HDD.

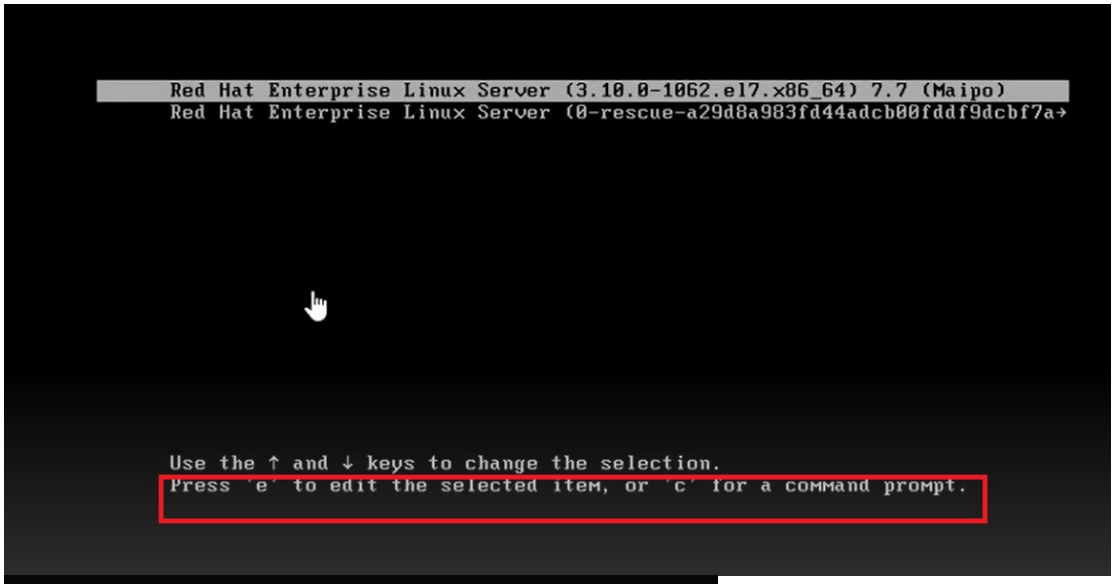
#1st Method

```
root@localhost ~]# sed -i "/^CLASS=/s/ --unrestricted//" /etc/grub.d/10_linux
root@localhost ~]# grub2-setpassword
nter password:
onfirm password:
root@localhost ~]#
```

```
[root@localhost ~]# sed -i "/^CLASS=/s/ --unrestricted//" /etc/grub.d/10_linux
[root@localhost ~]# grub2-setpassword
Enter password:
Confirm password:
[root@localhost ~]# cd /boot/grub2
[root@localhost grub2]# ll
total 36
-rw-r--r--. 1 root root   84 Mar 12  2020 device.map
drwxr-xr-x. 2 root root   25 Mar 12  2020 fonts
-rw-r--r--. 1 root root 4317 Mar 12  2020 grub.cfg
-rw-r--r--. 1 root root 1024 Mar 12  2020 grubenv
drwxr-xr-x. 2 root root 8192 Mar 12  2020 i386-pc
drwxr-xr-x. 2 root root 4096 Mar 12  2020 locale
-rw-------. 1 root root  298 Mar 12 00:32 user.cfg

[root@localhost grub2]# cat user.cfg
GRUB2_PASSWORD=grub.pbkdf2.sha512.10000.44EF19C131C3D3B7D993C83B0AB8FC25A9B95B543130BB47BEA93E7DA3D563DF8BCF538862D2BE4D721561A674A5
CBF204A1EE9779DF16941C822F3663C38948.9856EE5FC7C37B0D43F07A1C3FC8FEE50EC037245348F4F794A3E6AFDE80ABBB555CE2FB90359F8427C55CD4D1601BB
342B814700F2E1CB95D9B45040269BC1C
[root@localhost grub2]#
```

 # access t the GRUB console with the credentials .. set or not

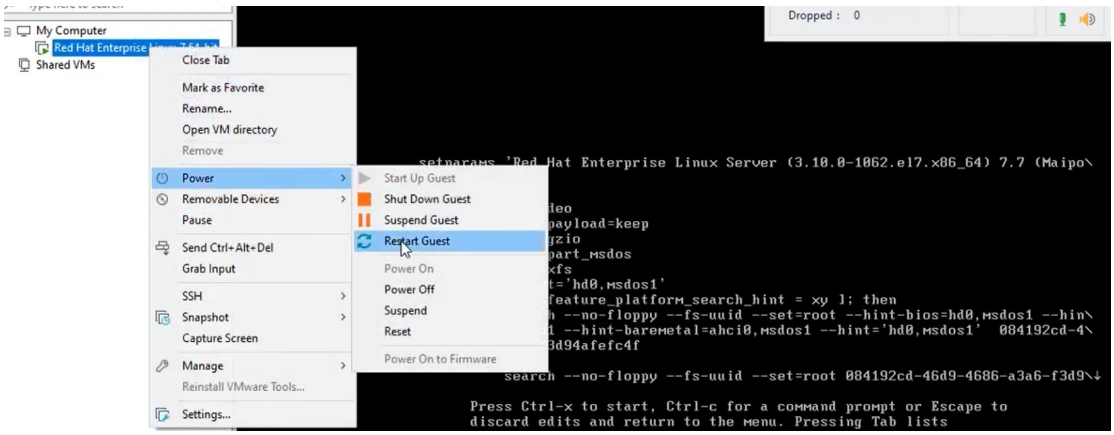
```
[root@localhost grub2]# grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-3.10.0-1062.el7.x86_64
Found initrd image: /boot/initramfs-3.10.0-1062.el7.x86_64.img
Found linux image: /boot/vmlinuz-0-rescue-a29d8a983fd44adcb00fddf9dcbf7abd
Found initrd image: /boot/initramfs-0-rescue-a29d8a983fd44adcb00fddf9dcbf7abd.img
done
[root@localhost grub2]# init 6

Remote side unexpectedly closed network connection


Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```



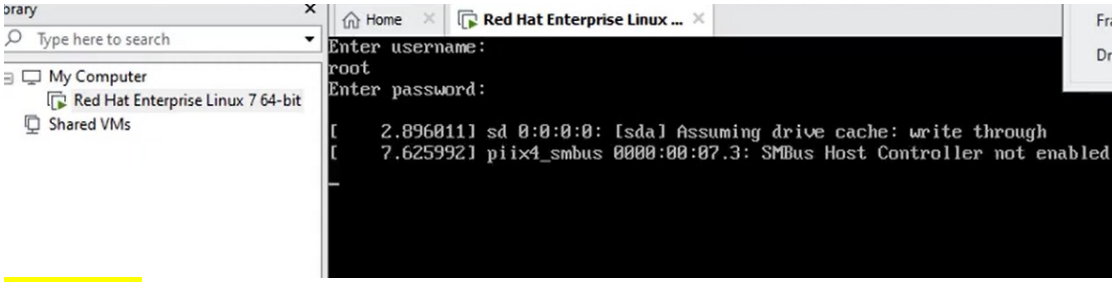
 # GRUB Console

```
setparams 'Red Hat Enterprise Linux Server (3.10.0-1062.el7.x86_64) 7.7 (Maipo\
)'

        load_video
        set gfxpayload=keep
        insmod gzio
        insmod part_msdos
        insmod xfs
        set root='hd0,msdos1'
        if [ x$feature_platform_search_hint = xy ]; then
          search --no-floppy --fs-uuid --set=root --hint-bios=hd0,msdos1 --hin\
t-efi=hd0,msdos1 --hint-baremetal=ahci0,msdos1 --hint='hd0,msdos1'  084192cd-4\
6d9-4686-a3a6-f3d94afefc4f
        else
          search --no-floppy --fs-uuid --set=root 084192cd-46d9-4686-a3a6-f3d9\↓

      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.
```

 # now how to Remove the pasword -- restart Again



 # incase remove the password from the GRUB if we know the root password

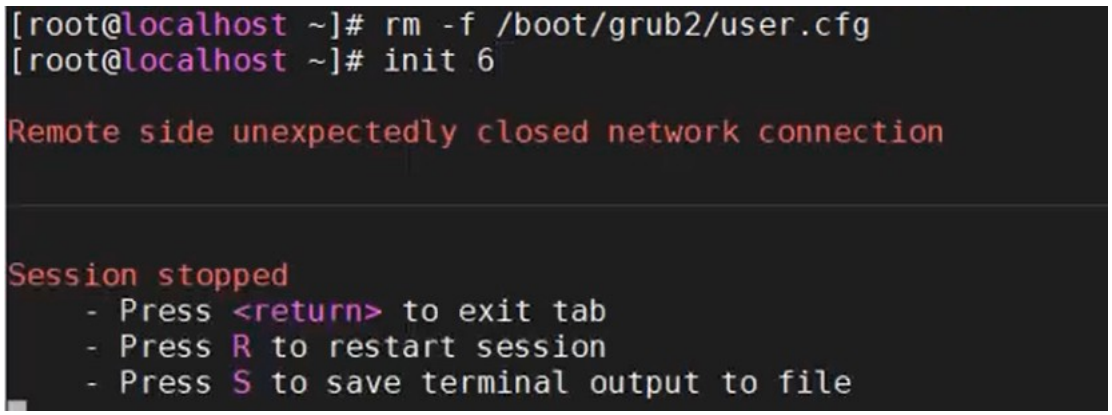


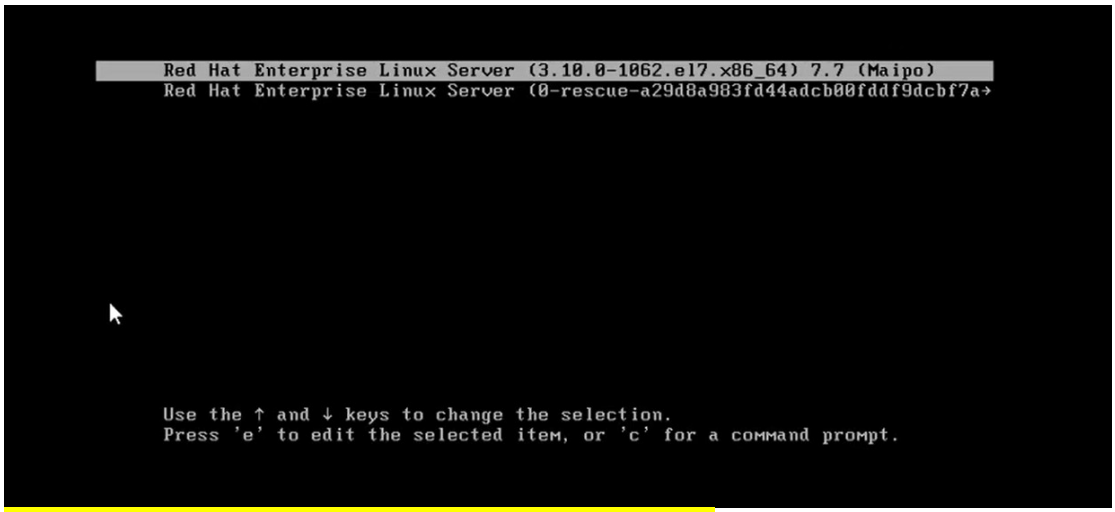
#2nd Method

Remove password protection

To remove the password protection we can add the –unrestricted text in the main CLASS= declaration in /etc/grub.d/10_linux file again. Another way is to remove the /boot/grub2/user.cfg file which stores the hashed GRUB bootloader password.

rm -f /boot/grub2/user.cfg





 # now not asking me username / passwd from the boot console

```
setparams 'Red Hat Enterprise Linux Server (3.10.0-1062.el7.x86_64) 7.7 (Maipo\
)'

        load_video
        set gfxpayload=keep
        insmod gzio
        insmod part_msdos
        insmod xfs
        set root='hd0,msdos1'
        if [ x$feature_platform_search_hint = xy ]; then
          search --no-floppy --fs-uuid --set=root --hint-bios=hd0,msdos1 --hin\
t-efi=hd0,msdos1 --hint-baremetal=ahci0,msdos1 --hint='hd0,msdos1'  084192cd-4\
6d9-4686-a3a6-f3d94afefc4f
        else
          search --no-floppy --fs-uuid --set=root 084192cd-46d9-4686-a3a6-f3d9\

      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.
```

3rd Method

Break/Remove the forgotten GRUB2 Password: (in case you don't know the root password)

If you don't know the GRUB password you can't easily reset the forgotten root password. So to res

1. Boot with ISO image.

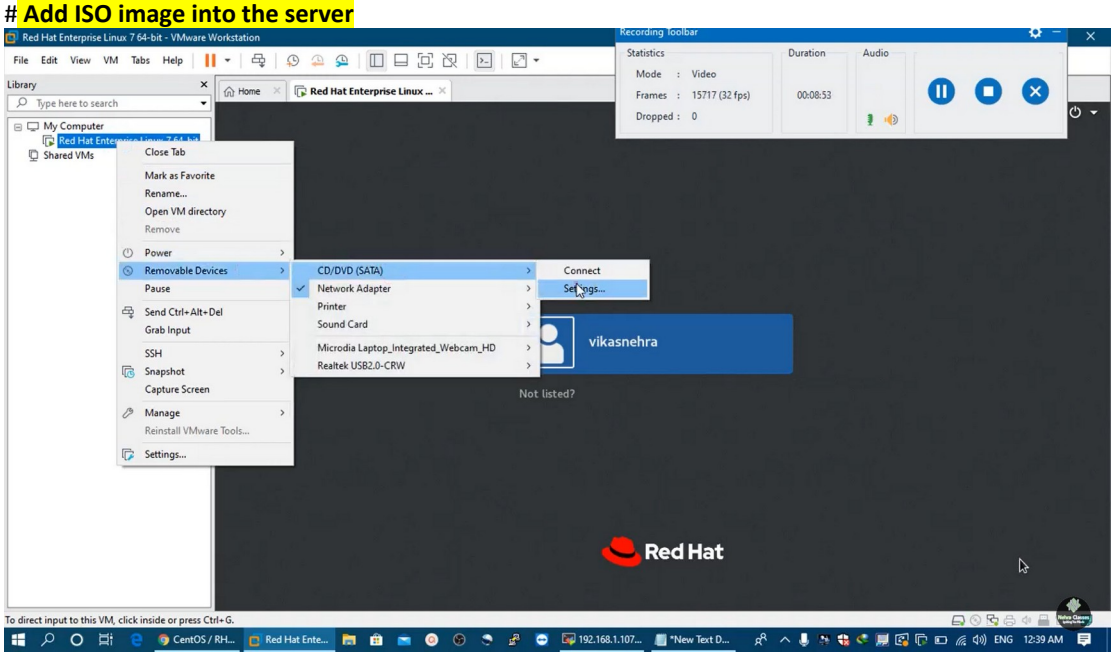
2. Select troubleshooting option.

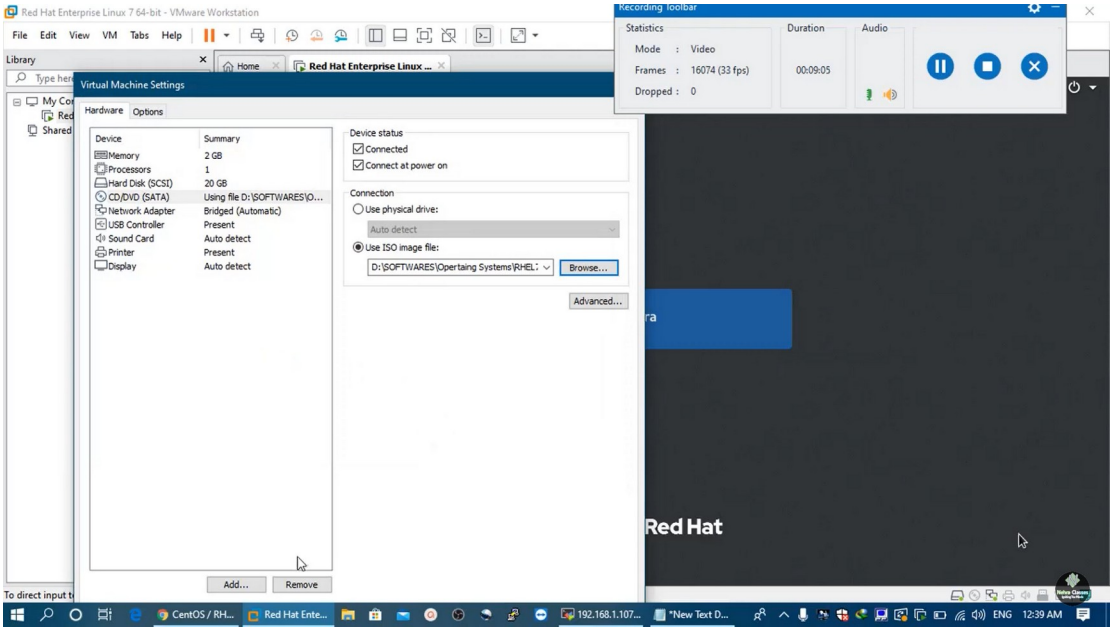
3. From Troubleshooting options select Rescue a CentOS/RedHat Linux system option.

4. Now select the first option which mounts the installed Linux in /mnt/sysimage directory.

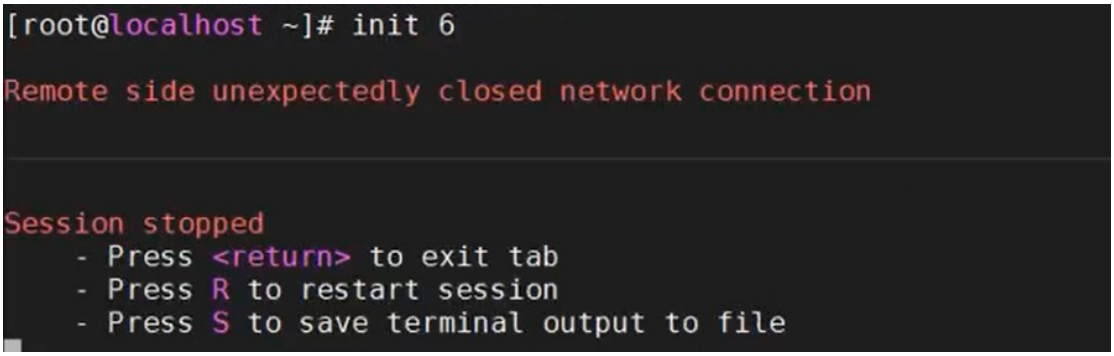
```
rrLast login: Thu Mar 12 00:35:43 2020 from 192.168.1.105
[root@localhost ~]# grub2-setpassword
Enter password:
Confirm password:
[root@localhost ~]# cat /boot/grub2/user.cfg
GRUB2_PASSWORD=grub.pbkdf2.sha512.10000.725686675CCE0ADC237D48E920E5188B8E9938BE29882D9E8FA9821C3F4638D4251C4A7DD4D7A3ABB8B8E0C391CA
40BCACA8A721858077106C98AB4F56EA0BAD.1ADC6E04B0BA412B6986C74FF8E4A8FBC8DE9736F412DD8EAE2AC2CEC4533A8CA561950E02CB1029F016C6F6DCA20E5
DC28696651C299AE3F8C4007AB9CB7826
[root@localhost ~]#
```

Add ISO image into the server

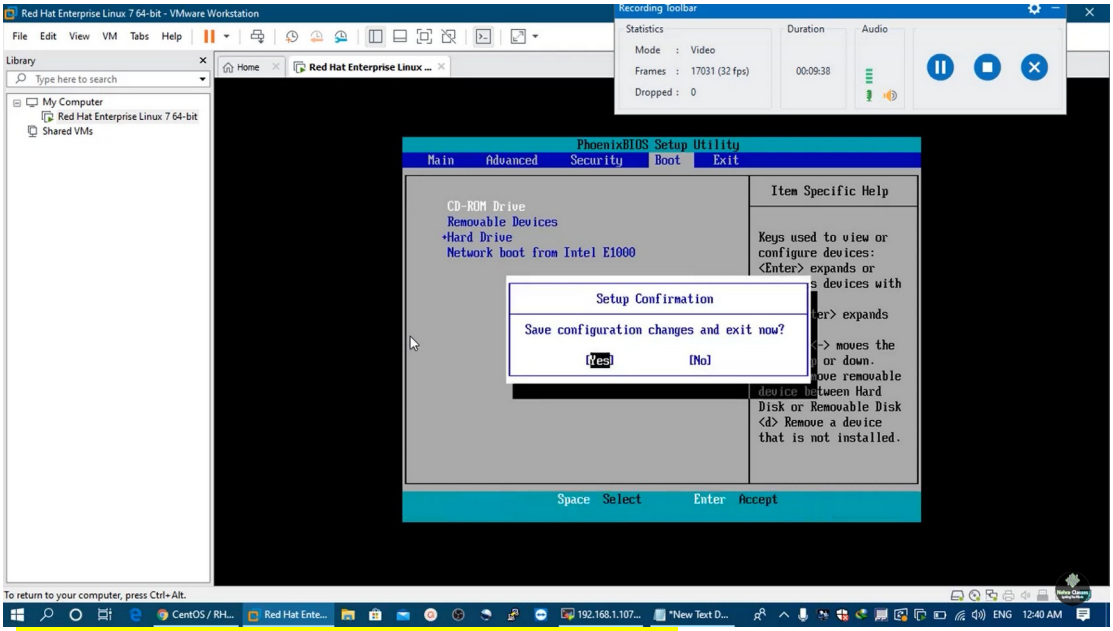




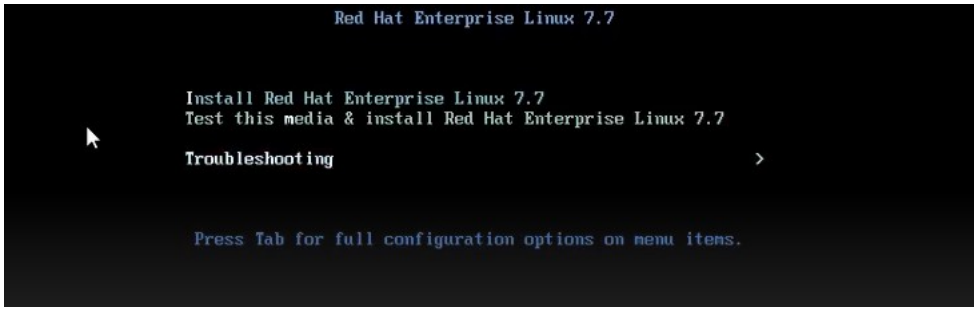
 # Reboot

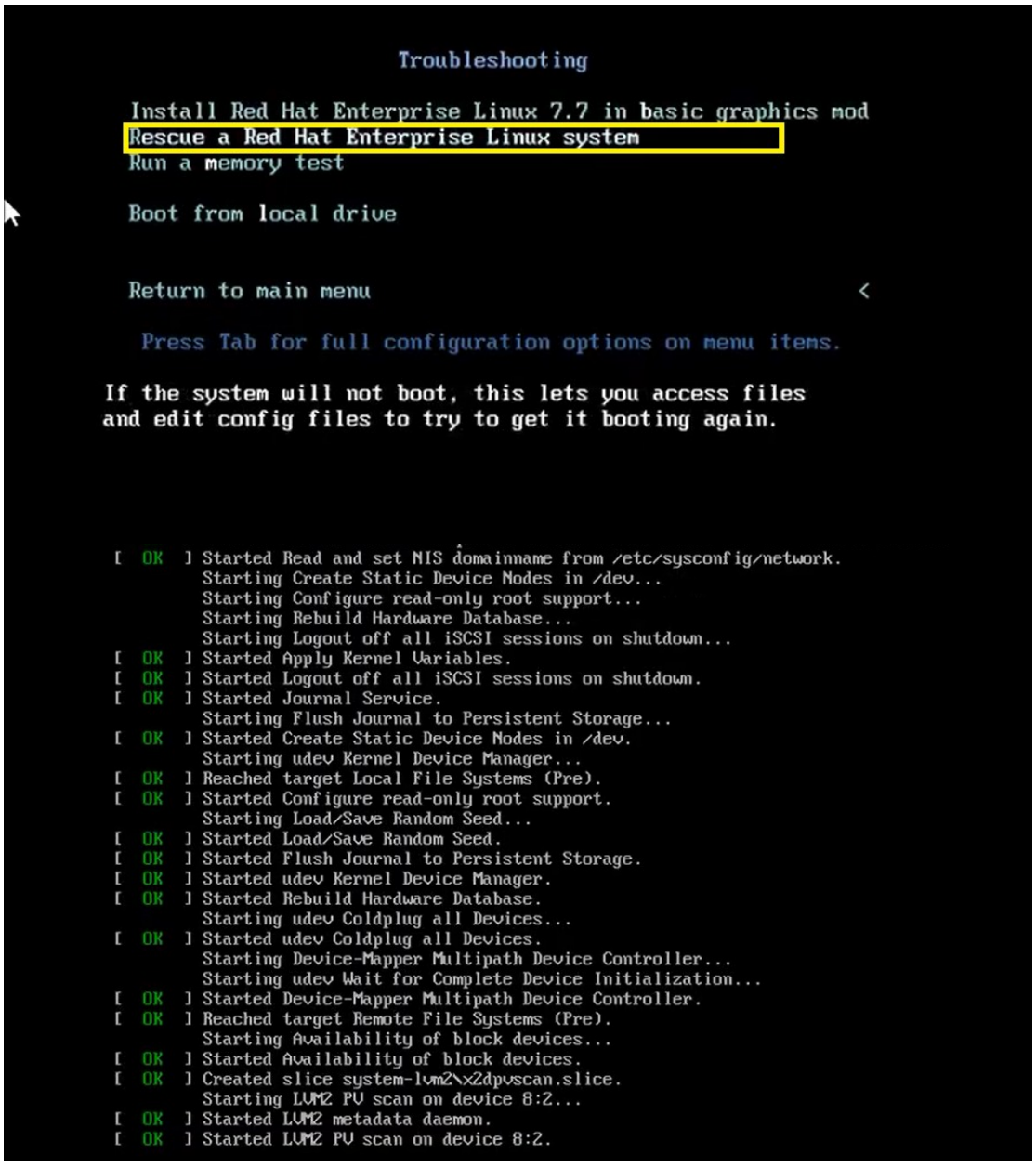


#+ Press F2 ASAP .. while Server is rebooting



 # CD ROM bring it up using + Keyboard + save setting F10 key


Red Hat Enterprise Linux 7.7
Install Red Hat Enterprise Linux 7.7
Test this media & install Red Hat Enterprise Linux 7.7
Troubleshooting
Press Tab for full configuration options on menu items.

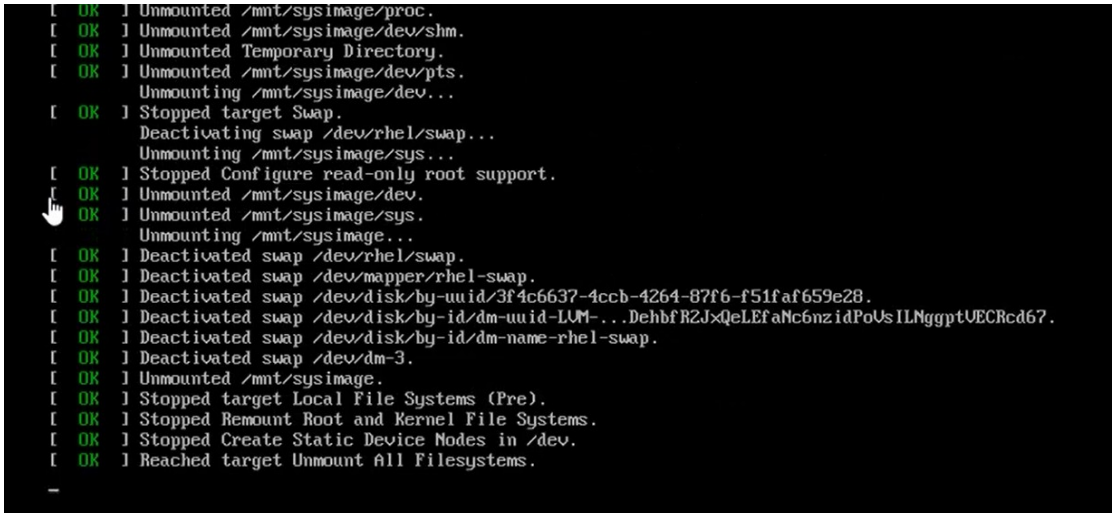

Troubleshooting
Install Red Hat Enterprise Linux 7.7 in basic graphics mod
Rescue a Red Hat Enterprise Linux system
Run a memory test
Boot from local drive
Return to main menu
Press Tab for full configuration options on menu items.
If the system will not boot, this lets you access files
and edit config files to try to get it booting again.
[OK] Started Read and set NIS domainname from /etc/sysconfig/network.
Starting Create Static Device Nodes in /dev...
Starting Configure read-only root support...
Starting Rebuild Hardware Database...
Starting Logout off all iSCSI sessions on shutdown...
[OK] Started Apply Kernel Variables.
[OK] Started Logout off all iSCSI sessions on shutdown.
[OK] Started Journal Service.
Starting Flush Journal to Persistent Storage...
[OK] Started Create Static Device Nodes in /dev.
Starting udev Kernel Device Manager...
[OK] Reached target Local File Systems (Pre).
[OK] Started Configure read-only root support.
Starting Load/Save Random Seed...
[OK] Started Load/Save Random Seed.
[OK] Started Flush Journal to Persistent Storage.
[OK] Started udev Kernel Device Manager.
[OK] Started Rebuild Hardware Database.
Starting udev Coldplug all Devices...
[OK] Started udev Coldplug all Devices.
Starting Device-Mapper Multipath Device Controller...
Starting udev Wait for Complete Device Initialization...
[OK] Started Device-Mapper Multipath Device Controller.
[OK] Reached target Remote File Systems (Pre).
Starting Availability of block devices...
[OK] Started Availability of block devices.
[OK] Created slice system-lvm2\x2dpvscan.slice.
Starting LVM2 PV scan on device 8:2...
[OK] Started LVM2 metadata daemon.
[OK] Started LVM2 PV scan on device 8:2.

```
Rescue

The rescue environment will now attempt to find your Linux installation and
mount it under the directory : /mnt/sysimage.  You can then make any changes
required to your system.  Choose '1' to proceed with this step.
You can choose to mount your file systems read-only instead of read-write by
choosing '2'.
If for some reason this process does not work choose '3' to skip directly to a
shell.

 1) Continue

 2) Read-only mount

 3) Skip to shell

 4) Quit (Reboot)

Please make a selection from the above:  1
================================================================================
--------------------------------------------------------------------------------
Rescue Mount

Your system has been mounted under /mnt/sysimage.

If you would like to make your system the root environment, run the command:

        chroot /mnt/sysimage
Please press <return> to get a shell.
When finished, please exit from the shell and your system will reboot.
sh-4.2# chroot /mnt/sysimage
bash-4.2# _
bash-4.2# vim /etc/grub2.cfg
[anaconda] 1:main* 2:shell  3:log  4:stor
```

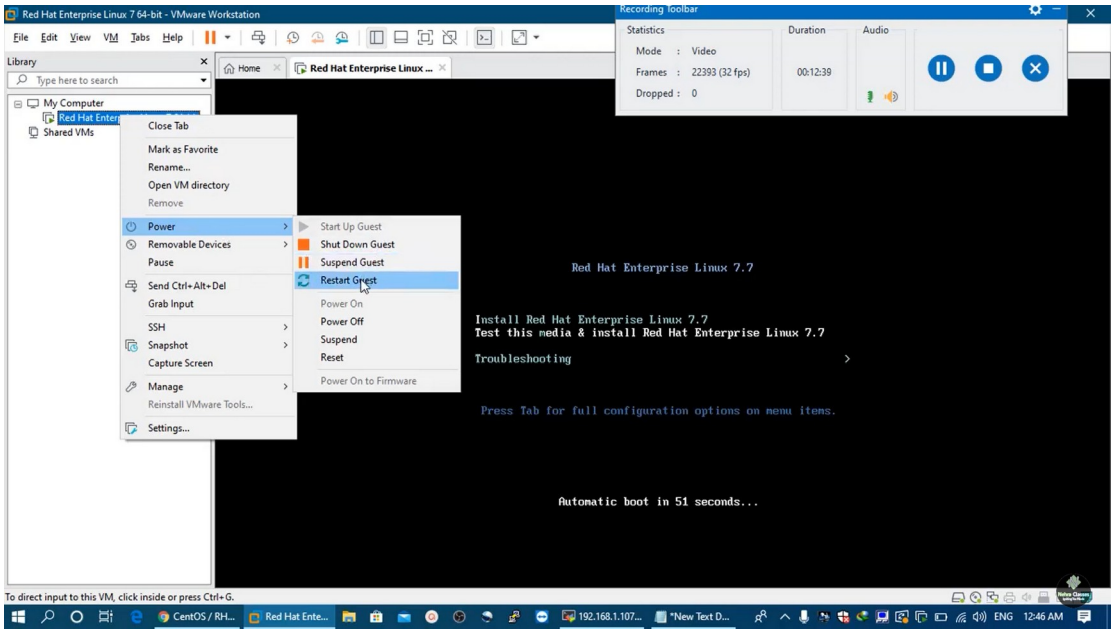
 # go to user Credentials - comment the below higlighted + save+ exit- wq!

```
  set timeout=5
# fallback normal timeout code in case the timeout_style feature is
# unavailable.
else
  set timeout=5
fi
### END /etc/grub.d/00_header ###

### BEGIN /etc/grub.d/00_tuned ###
set tuned_params=""
set tuned_initrd=""
### END /etc/grub.d/00_tuned ###

### BEGIN /etc/grub.d/01_users ###
if [ -f ${prefix}/user.cfg ]; then
  source ${prefix}/user.cfg
  if [ -n "${GRUB2_PASSWORD}" ]; then
    set superusers="root"
    export superusers
    password_pbkdf2 root ${GRUB2_PASSWORD}
  fi
fi
### END /etc/grub.d/01_users ###

### BEGIN /etc/grub.d/10_linux ###
menuentry 'Red Hat Enterprise Linux Server (3.10.0-1062.el7.x86_64) 7.7 (Maipo)' --class red --class
 gnu-linux --class gnu --class os $menuentry_id_option 'gnulinux-3.10.0-1062.el7.x86_64-advanced-877
23b77-4d04-420e-a421-ae3a01298a6f' {
        load_video
        set gfxpayload=keep
        insmod gzio
```

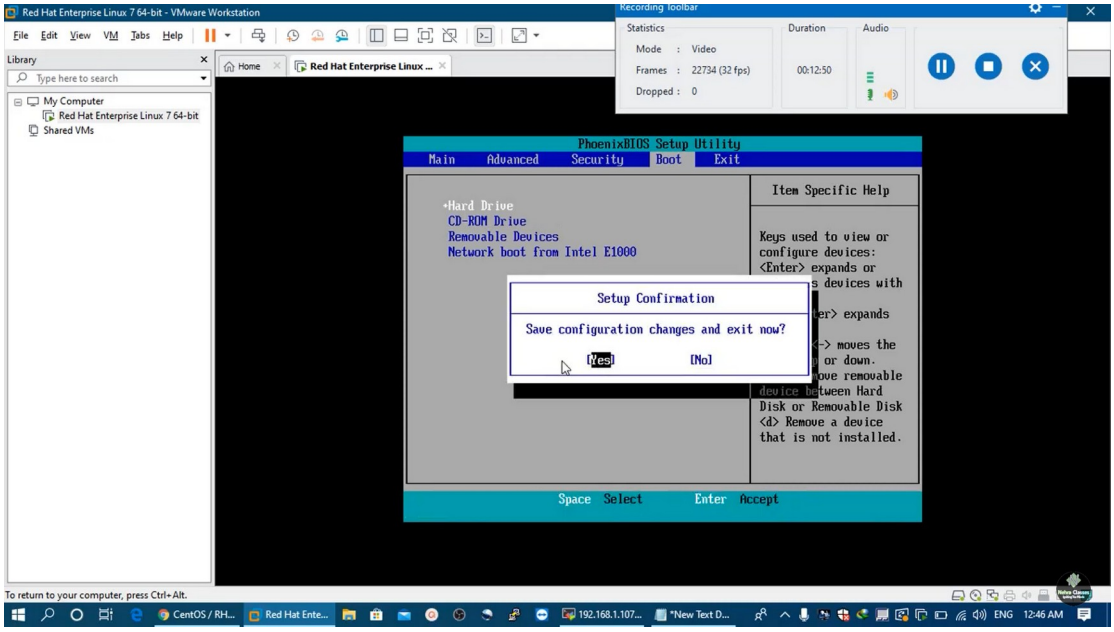
```
bash-4.2# vim /etc/grub2.cfg
bash-4.2# exit
exit
sh-4.2# exit_
[anaconda] 1:main* 2:shell  3:log  4:storage-log  5:program-log
```



 # now Boot Your machine from HD not from CD ROM



 # F2 .. booting



 # press “e” , now I will not ask for username + passwd