



11-22-2020

https://youtu.be/bs0FE_VAUvs

Emergency Mode

```
PRACTICE [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

[DEPEND] Dependency failed for Migrate local SELinux p... old store structure to the new structure.
[DEPEND] Dependency failed for Relabel all filesystems, if necessary.
[DEPEND] Dependency failed for Mark the need to relabel after reboot.
[ TIME ] Timed out waiting for device dev-mapper-zmpt1xx2dHR.device.
[DEPEND] Dependency failed for /hr.
[ TIME ] Timed out waiting for device dev-mapper-zmpt1xx2dRecruiting.device.
[DEPEND] Dependency failed for /recruiting.
[ TIME ] Timed out waiting for device dev-mapper-zmpt1xx2dFinance.device.
[DEPEND] Dependency failed for /finance.
[ OK ] Reached target Timers.
[ OK ] Reached target Login Prompts.
[ OK ] Reached target Network (Pre).
[ OK ] Reached target Network.
[ OK ] Reached target Network is Online.
Starting Crash recovery kernel arming...
[ OK ] Reached target Sockets.
Starting Import network configuration from initramfs...
Starting Tell Plymouth To Write Out Runtime Data...
[ OK ] Started Tell Plymouth To Write Out Runtime Data.
[FAILED] Failed to start Crash recovery kernel arming.
See 'systemctl status kdump.service' for details.
[ OK ] Started Import network configuration from initramfs.
[ OK ] Started Emergency Shell.
Starting Create Volatile Files and Directories...
[ OK ] Reached target Emergency Mode.
[ OK ] Started Create Volatile Files and Directories.
Starting Security Auditing Service...
[ OK ] Started Security Auditing Service.
Starting Update UTMP about System Boot/Shutdown...
[ OK ] Started Update UTMP about System Boot/Shutdown.
Starting Update UTMP about System Runlevel Changes...
[ OK ] Started Update UTMP about System Runlevel Changes.
Welcome to emergency mode! After logging in, type "journalctl -xb" to view
system logs, "systemctl reboot" to reboot, "systemctl default" or ^D to
try again to boot into default mode.
Give root password for maintenance
(or press Control-D to continue):
```

- The system boot to emergency mode. But why?
 - a. Missing drives
 - b. The file system is corrupted
 - c. The file system is unmountable
- During boot process /etc/fstab read by system
- This will halt the system going into default mode

- Enter password
- Edit /etc/fstab



- Comment out the missing disks

```
#
# /etc/fstab
# Created by anaconda on Sun Oct  4 15:44:22 2020
#
# 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
#
/dev/mapper/centos-root / xfs defaults 0 0
UUID=160e6caa-b0a9-468b-9de1-04189acc84ce /boot xfs defaults 0 0
/dev/mapper/centos-swap swap swap defaults 0 0

#/dev/mapper/zmpt1-Accounting /accounting xfs defaults 0 0
#/dev/mapper/zmpt1-Finance /finance xfs defaults 0 0
#/dev/mapper/zmpt1-HR /hr xfs defaults 0 0
#/dev/mapper/zmpt1-Recruiting /recruiting xfs defaults 0 0
```

Filesystem	Mount point	Filesystem type	OS handles this	Priority – 0 1 or 2
/dev/sdb1	/DATA	ext4	defaults	0 0

File System Check	
0	skip
1	1 higher priority
2	2 lesser priority

For demo purpose tests corrupt file system – triggering

[root@zmpt01 ~]# dd if=/dev/zero of=/dev/sdd1 bs=1k count=1024 < ---corrupted on block size
1024+0 records in
1024+0 records out
1048576 bytes (1.0 MB) copied, 0.00584049 s, 180 MB/s

System will halt and goes into emergency mode

Emergency mode is in Read Only mode

mount -o remount, rw / #< --- Command to load system in read/ write mode, so you can edit
/etc/fstab



Putty is disabled – because Emergency mode is without network

Run mount -a

```
[ 427.696087] ffff94c0bb1f9000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.698386] ffff94c0bb1f9010: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.700591] ffff94c0bb1f9020: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.702751] ffff94c0bb1f9030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.704921] XFS (sdd1): Metadata corruption detected at xfs_inode_buf_verify+0x79/0x100 [xfs], xfs_
inode block 0x40
[ 427.709164] XFS (sdd1): Unmount and run xfs_repair
[ 427.711379] XFS (sdd1): First 64 bytes of corrupted metadata buffer:
[ 427.713652] ffff94c0bb1f9000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.715948] ffff94c0bb1f9010: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.718156] ffff94c0bb1f9020: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.720287] ffff94c0bb1f9030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
[ 427.722976] XFS (sdd1): metadata I/O error: block 0x40 ("xfs_trans_read_buf_map") error 117 numb
s 32
mount: mount /dev/sdd1 on /mnt failed: Structure needs cleaning
[root@zmp101 ~]# _
```

xfs_repair /dev/sdd1 #< ----run this command to repair in real world scenerio

90% successful – Quarantine the bad sectors

For ext4

fsck /dev/sdd1

fsck – file system check



```
PRACTICE [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
cleared inode 125
bad CRC for inode 126, will rewrite
bad magic number 0x0 on inode 126, resetting magic number
bad version number 0x0 on inode 126, resetting version number
inode identifier 0 mismatch on inode 126
cleared inode 126
bad CRC for inode 127, will rewrite
bad magic number 0x0 on inode 127, resetting magic number
bad version number 0x0 on inode 127, resetting version number
inode identifier 0 mismatch on inode 127
cleared inode 127
- agno = 1
- agno = 2
- agno = 3
- process newly discovered inodes...
Phase 4 - check for duplicate blocks...
- setting up duplicate extent list...
root inode lost
- check for inodes claiming duplicate blocks...
- agno = 0
- agno = 1
- agno = 2
- agno = 3
Phase 5 - rebuild AG headers and trees...
- reset superblock...
Phase 6 - check inode connectivity...
reinitializing root directory
reinitializing realtime bitmap inode
reinitializing realtime summary inode
- resetting contents of realtime bitmap and summary inodes
- traversing filesystem ...
- traversal finished ...
- moving disconnected inodes to lost+found ...
Phase 7 - verify and correct link counts...
resetting inode 64 nlinks from 1 to 2
done
[root@zmp01 ~]# _
```