

# CentOS Not Booting

Apr 2021

**aka Centos Emergency Mode.**

---

## Introduction

This has been listed under IPHE, not because it is specific to IPHE (because it is not) but because it was on an IPHE system that I first observed this phenomenon.

After a server was rebooted (and I cannot say whether this was a reboot from a command line, a server crash, someone pulling out the power cables, a power cut etc) the end result is that the server will not fully boot up, instead we end up in '**emergency mode**'.

When logging in to the server from command KVM or from BMC (or whatever remote management is present) we can see the following tale screen:

```
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):
Login incorrect

Give root password for maintenance
(or press Control-D to continue): _
```

---

## The Cause

To move past this page you have to enter **Control-D** to get to the login prompt and complete the boot up process. This is a hassle to do every time there is a reboot. A clue of what to look at is in the text, the command **journalctl -xb** can be executed once you have logged in.

On my system this file was 30,888 lines long, so hundreds of pages long. After searching through it though I did find this section:

```
-- The start-up result is done.
Apr 20 17:04:10 k8master1 kernel: power_meter ACPI000D:00: Found ACPI power meter.
Apr 20 17:04:10 k8master1 systemd-fsck[19721]: /dev/mapper/vg_main-lv_var: Inodes that were part of a
corrupted orphan linked list found.
Apr 20 17:04:10 k8master1 systemd-fsck[19721]: /dev/mapper/vg_main-lv_var: UNEXPECTED INCONSISTENCY; RUN
fsck MANUALLY.
Apr 20 17:04:10 k8master1 systemd-fsck[19721]: (i.e., without -a or -p options)
Apr 20 17:04:10 k8master1 systemd-fsck[19721]: fsck failed with error code 4.
Apr 20 17:04:10 k8master1 systemd-fsck[19721]: Running request emergency.target/start/replace
```

```
Apr 20 17:04:10 k8master1 systemd[1]: Started File System Check on /dev/mapper/vg_main-lv_var.  
-- Subject: Unit systemd-fsck@dev-mapper-vg_main\x2dlv_var.service has finished start-up
```

The important parts are:

```
Apr 20 17:04:10 k8master1 systemd-fsck[19721]: /dev/mapper/vg_main-lv_var: UNEXPECTED INCONSISTENCY; RUN fsck MANUALLY.
```

The partition **vg\_main-lv\_var** has an issue, and Linux wants us to run **fsck**. **fsck** is a file check tool, however it will not run on mounted file systems, and the only way to unmount them is if you boot from say a USB stick.

The other important part is:

```
Apr 20 17:04:10 k8master1 systemd-fsck[19721]: /dev/mapper/vg_main-lv_var: Inodes that were part of a corrupted orphan linked list found.
```

So **/dev/mapper/vg\_main-lv\_var** has an **Inode** issue. An **Inode** is a reference that points to each file on the disk, there is an **Inode** for each file, and for empty space also. The **Inodes** should all line up nicely, but in the case of a server crash or sudden power loss, the process writing to the disk may not have time to update all the **Inodes**, and so a discrepancy occurs on the disk that the system notices.

Each time the server boots, this discrepancy causes the server to go in to **Emergency Mode**. On a disk that is being written to a lot, this is not an uncommon occurrence, there are two choices, run the **fsck**, which may not be possible (especially remotely) or tell the system to not perform the check at boot, thus avoiding going in to **Emergency Mode** while rebooting.

---

## The Remedy

We need to tell the system to not perform the **fsck** at boot, and to do this we need to edit the file **fstab** in the etc directory (this is for CentOS).

From:

<http://cameraangle.co.uk/> - WalkerWiki - [wiki.alanwalker.uk](http://wiki.alanwalker.uk)

Permanent link:

[http://cameraangle.co.uk/doku.php?id=centos\\_not\\_booting&rev=1619025963](http://cameraangle.co.uk/doku.php?id=centos_not_booting&rev=1619025963)

Last update: **2023/03/09 22:35**

