Troubleshooting Boot Issues & System Recovery

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System boot logs

The below log files are most relevant to viewing boot logs and errors

`dmesg` - Contains all boot data

`syslog/journal/messges` - Logging post boot

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Recovery Options

Alternative Kernel

Firstly, it's worth ruling out a bad kernel file. When attempting to boot the system, enter grub and set an old kernel version to be booted from.

Live CD Boot

Booting from a live CD essentially means that an external device is connected to the server containing a live CD image. This can be used to launch the operating system (from the external device) with a fresh (temporary) Linux installation.

The process for attaching the live CD varies depending on the tools available. If you're dealing with a physical server that you have physical access to, we can connect a USB drive or CD containing

the live CD image.

Since we have access to DRAC, we can actually attach the image from there:

DRAC > Attach Media

Once attached, you'll need to boot the system an

Once you're booted into the OS (live CD), we'll be able to mount the original server disks (still containing the old OS) within the new OS. From here we can troubleshoot the issues we're seeing.

Example Scenario; GRUB Broken

In this scenario, there's a problem with GRUB (boot loader) on the server OS. One way we could look to resolve this is by reconfiguring/reinstalling GRUB.

Luckily, our live CD will contain a fully working version of GRUB that we can use to fix our broken system.

In this scenario, I've attached and booted from a live CD. I've then mounted the original server disks (/dev/sdb1 mounted to /mnt/sdb1).

```
sudo grub-install --root-directory=/mnt/sdb1 /dev/sdb
```

Once done, reboot into the original OS and see if it's fixed.

Example scenario; Slow Boot

For troubleshooting slow server boots, we can use the below command:

```
systemd-analyze blame
```

This command will list the amount of time that each service has taken to start at boot.

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