Safely Mounting iSCSI Targets Using /etc/fstab

iSCSI (Internet Small Computer Systems Interface) allows block-level access to storage devices over a network. When integrating iSCSI targets into your Linux system, you may want to configure them to mount automatically at boot using /etc/fstab. However, improper configuration can lead to boot delays or failures. This document explores the safest way to set up iSCSI mounts in fstab, with a focus on using \_netdev instead of nofail.

# Understanding the Problem

When a system boots, it processes /etc/fstab entries in order. If the network is not up and an iSCSI target is listed in fstab, the mount attempt may fail, potentially stalling the boot process or causing system errors.

## The Key Difference

- nofail: Prevents boot failure but doesn't ensure the mount will be retried after the network comes up.

- \_netdev: Defers the mount until after the network is online.

**Therefore, \_netdev is the safer and more reliable choice for network-based mounts like iSCSI.**

# Steps to Safely Mount iSCSI Targets in /etc/fstab

## 1. Discover and Log In to the iSCSI Target

Use the iscsiadm command:

sudo iscsiadm --mode discovery --type sendtargets --portal <target-ip>

sudo iscsiadm --mode node --targetname <target-name> --login

Ensure the target logs in correctly and persists across reboots:

sudo iscsiadm --mode node --targetname <target-name> --op update --name node.startup --value automatic

## 2. Identify the Device

After login, find the device path:

lsblk

Or use dmesg to check the new block device name (e.g., /dev/sdb):

dmesg | grep sd

## 3. Create a Filesystem and Mount Point

sudo mkfs.ext4 /dev/sdb

sudo mkdir /mnt/iscsi

## 4. Add Entry to /etc/fstab

Use the device’s UUID for stability:

sudo blkid /dev/sdb

Sample /etc/fstab entry:

UUID=xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx /mnt/iscsi ext4 \_netdev,x-systemd.automount,x-systemd.device-timeout=60,noatime 0 2

### Explanation:

- \_netdev: Waits for network before mounting.

- x-systemd.automount: Enables on-demand mounting to avoid delays during boot.

- x-systemd.device-timeout=60: Waits up to 60 seconds for the device to appear.

- noatime: Improves performance (optional).

- 0 2: Standard dump/pass values.

# Bonus: Use systemd Units for Better Control

Systemd has native support for iSCSI and can manage dependencies. You can create a mount unit that depends on network-online.target or iscsid.service to enforce correct ordering.

[Unit]  
Description=Mount iSCSI Target  
After=network-online.target  
Requires=network-online.target  
  
[Mount]  
What=/dev/disk/by-uuid/xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx  
Where=/mnt/iscsi  
Type=ext4  
Options=\_netdev,x-systemd.device-timeout=60  
  
[Install]  
WantedBy=multi-user.target

# Summary: Best Practices

- Use UUID instead of /dev/sdX for mount type.

- Use \_netdev, not nofail.

- Add x-systemd.automount for better boot performance.

- Enable persistent iSCSI sessions with node.startup=automatic.

- Use systemd units for more control.

# Final Thoughts

While nofail might look like a convenient fix, it’s more of a band-aid than a solution. The \_netdev option, combined with systemd directives like x-systemd.device-timeout, provides a robust and safe method for integrating iSCSI storage into your boot process. This ensures reliable mounts without compromising boot stability or data integrity.