Supporting Solid State Disks

LPIC-2: Linux Engineer (201-450)

Objectives:

At the end of this episode, I will be able to:

1. Differentiate between traditional and solid-state disks.
2. Verify TRIM and manually trigger TRIM operations.
3. Describe the differences between SSD and NVMe disks.

> Additional resources used during the episode can be obtained using the download link on the overview episode.

- Solid-state Disks (SSD)
  - Most are like SATA disks
  - Heavy fragmentation
  - Write amplification
  - TRIM
- TRIM
  - View whether TRIM is supported
    - `sudo hdparm -I /dev/sda | grep TRIM`
  - Manually trim a disk
    - `sudo fstrim -v <mountpoint>`
- NVMe Disks
  - Non-volatile Memory Express
  - Namespaces
  - No AHCI interface, so normal tools don't work
  - Implements DSM Deallocate instead of TRIM
    - Data Set Management (DSM)
- Working with NVMe disks
  - `sudo apt install nvme-cli`
  - List commands
    - `nvme help`
  - Check SMART status
    - `sudo nvme smart-log /dev/nvme0n1`