Backing Up with dd

LPIC-2: Linux Engineer (201-450)

Objectives:

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

1. Describe scenarios where the dd utility can be used for backups.
2. Use dd to backup a disk, partition, and MBR.
3. Restore data using dd.

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

- Introduction to *dd*
  - Very old tool
  - Originally designed to convert files from one format to another
  - Now used to clone disks and partitions
  - Built in to almost all distros
  - Useful when a full disk image is required
    - Includes boot record and other data
- Clone a disk
  - `sudo dd if=/dev/sda of=/dev/sdb`
- Source disks
  - Can be online
  - You should minimize writes during the operation
- Display status
  - `status=progress`
- *dd* Command Line Options
  - Ignore errors
    - `conv=noerror`
  - Increase block size
    - 512 is default
    - `bs=64K`
    - `bs=1M`
  - Ensure perfect copy
    - `conv=sync`
    - Very slow
    - Check all writes before progressing
- Backup a partition
  - `dd if=/dev/sda1 of=~/part1.img`
- Backup just the MBR
  - `dd if=/dev/sda of=~/sda0.img count=1 bs=512`

- Compressing the backup
  - Not natively supported
  - Pipe the backup through gzip
  - `sudo dd if=/dev/sdd bs=1M | gzip -c > ~/sdd.img.gz`
- Restoring a disk
  - `dd if=./sda.img of=/dev/sdc`
  - `gunzip -c ~/sdd.img.gz | dd of=/dev/sdd bs=1M`