Measuring Disk Activity

LPIC-2: Linux Engineer (201-450)

Objectives:

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

1. Describe the metrics used to measure disk activity.
2. Use iostat, iotop, and lsof to monitor disk activity.

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

- At a glance disk I/O
  - `iotop`
  - Lists total disk reads, writes, and swap
  - Listed by process
  - `iotop -a` will show accumulated data
- Examining a process
  - We must determine the files it is reading/writing to
  - `lsof -p <PID>`
  - `lsof -c <process_name>`
- Per-disk I/O stats
  - `iostat` Lists basic disk stats
- Monitoring the disk queue length
  - `iostat -x` lists detailed stats
  - `iostat -xt 1` updates every 1 second
  - `avgqu-sz` is the average queue size
- Viewing historical data
  - `sar -b`
  - Can be run continuosly
    - `sar -b 1`
  - Can be filtered to a time
    - `sar -b -f /var/log/sysstat/sa18 -s 00:00:00 -e 08:00:00`
- Metrics
  - rtps - Read requests per second
  - wtps - Write requests per second
  - bread/s - Blocks read per second
  - bwrtn/s - Blocks written per second