Capacity Planning

LPIC-2: Linux Engineer (201-450)

Objectives:

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

1. Describe the metrics used to monitor system performance.
2. Utilize general tools to evaluate system performance.
3. Describe problems that could effect key performance areas.

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

- Primary performance metrics
    - CPU
    - Memory
    - Disk I/O
    - Network I/O
- *top*
    - General purpose tool
    - Provides a summary of real-time data
    - Not useful for trending
    - Shortcuts
        - **Shift-F** brings up the sort menu
        - **m** Toggles memory meter
- sar
    - Installed with *sysstat* package
    - Consolidates output of numerous utilities
- Components of sar (/usr/lib/systat/)
    - *sadc*
        - System Activity Data Collector
    - *debian-sa1*/*sa1*/*sa2*
        - Stores data and generates reports
    - *sadf*
        - Generates reports in different formats
        - CSV
        - XML
- Configuring *sar*
    - `sudoedit /etc/default/sysstat`
        - `ENABLED="true"`
    - `sudoedit /etc/cron.d/systat`
- *sar* logs
    - Log rotation is configured automatically

    - `/var/log/sysstat`
- Viewing reports
    - `sar -u` View CPU data
    - `sar -r` View Memory data
    - `sar -b` View Disk I/O
    - `sar -n` View network data
        - `sar -n IP`
        - `sar -n TCP`
        - `sar -n IP6`
- Detective Tools
    - `uptime`
        - Has the system restarted?
    - `ps` and `pstree`
        - What processes are running?
        - What processes are related?
    - `w`
        - Who is logged into the system and what are they doing?
- Benchmarking Tools
    - `ab`
        - Apache Load Generation
        - `ab -n 10000 -c 10 http://10.0.222.50/`