**Module :2- Linux server - Operate running systems**

**1] View running processes with ps.**

The ps command in Linux is used to display information about active processes. Here are some common ways to use it:

Basic Usage

1. List running processes for the current shell:

ps

* + Displays processes associated with the current terminal.

1. Detailed list of all processes:

ps -e

or

ps -A

* + Shows all running processes on the system.

1. Full details of all processes:

ps -ef

* + Includes more details like the UID, PID, PPID, CPU usage, start time, etc.

Customizing the Output

1. Display processes in a tree format:

ps -ejH

or

ps --forest

* + Helps visualize parent-child relationships.

1. Select columns to display:

ps -eo pid,comm,user,%cpu,%mem

* + Customize the output format to show specific information.

Search for a Specific Process

1. Filter output for a specific process:

ps -ef | grep <process\_name>

* + Example: To find the process ID of apache2:

ps -ef | grep apache2

Real-Time Process Monitoring

For more dynamic and real-time monitoring, consider using:

* top:

top

* htop (if installed):

htop

**2] Terminate processes with kill.**

To terminate processes using kill:

1. Find the PID: Use ps or top to identify the Process ID (PID).

ps -e | grep <process\_name>

1. Send a termination signal:
   * Default signal (SIGTERM):

kill <PID>

* + Force kill (SIGKILL):

kill -9 <PID>

1. Kill by process name (optional):

pkill <process\_name>

1. Kill all processes by user:

killall <process\_name>

**3] Use top or htop to monitor system resources and processes.**

**Monitor System Resources with top or htop:**

1. **Launch top**:

top

* + Displays real-time system stats (CPU, memory, processes).
  + Use q to quit, k to kill a process, and h for help.

1. **Launch htop**:

htop

* + User-friendly alternative with color-coded stats.
  + Navigate with arrow keys, F9 to kill a process, F10 to quit.

htop may require installation:

sudo apt install htop # For Debian/Ubuntu

sudo yum install htop # For RHEL/CentOS

**4] Configure one of your lab COMPUTERS to boot to the CLI using systemd, and reboot to confirm that you were successful**.

**Steps to Boot to CLI**

1. **Open a Terminal**: Use an existing terminal or boot into recovery mode.
2. **Set the Target to Multi-User Mode**: Run the following command to set the default boot target to CLI:

sudo systemctl set-default multi-user.target

1. **Reboot the System**:

sudo reboot

1. **Verify CLI Boot**: After rebooting, the system should display a login prompt in the CLI.

**Optional: Switch Back to GUI**

To restore the GUI as the default boot target:

1. Run:

sudo systemctl set-default graphical.target

1. Reboot:

sudo reboot