

TASK 5

Task: Create a tutorial that explains how to use the "htop" command-line tool to monitor resource utilization on a Linux system. Cover the key features of "htop" and provide real-time examples of its application.

htop: This is `htop`, a cross-platform interactive process viewer.

To install `htop` use the following command:

```
sudo apt install htop
```

Using htop:

- Open terminal and enter command `htop` to launch the htop interface.

```
My UbuntuOS [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Jan 5 16:04
jainil@jainil-VirtualBox: ~

0[ 1.0%] Tasks: 112, 268 thr; 1 running
1[ 1.0%] Load average: 0.17 0.22 0.28
2[ 0.5%] Uptime: 00:17:03
3[ 0.5%]
Mem[|||||] 825M/3.82G
Swp[|||||] 0K/2.62G

PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
1626 jainil 20 0 5080M 341M 138M S 3.9 8.7 2:17.80 /usr/bin/gnome-shell
1635 jainil 20 0 5080M 341M 138M S 1.0 8.7 0:13.41 /usr/bin/gnome-shell
3205 jainil 20 0 11188 4864 3584 R 1.0 0.1 0:00.14 htop
479 systemd-o 20 0 14824 6912 6144 S 0.5 0.2 0:01.92 /lib/systemd/systemd-oomd
1634 jainil 20 0 5080M 341M 138M S 0.5 8.7 0:13.53 /usr/bin/gnome-shell
1636 jainil 20 0 5080M 341M 138M S 0.5 8.7 0:13.28 /usr/bin/gnome-shell
1637 jainil 20 0 5080M 341M 138M S 0.5 8.7 0:13.50 /usr/bin/gnome-shell
1 root 20 0 163M 12748 8140 S 0.0 0.3 0:02.81 /sbin/init splash
205 root 19 -1 48340 17152 15872 S 0.0 0.4 0:00.84 /lib/systemd/systemd-journald
247 root 20 0 27044 7040 4608 S 0.0 0.2 0:00.52 /lib/systemd/systemd-udev
480 systemd-r 20 0 25528 13760 9600 S 0.0 0.3 0:00.22 /lib/systemd/systemd-resolved
481 systemd-t 20 0 89376 7424 6656 S 0.0 0.2 0:00.15 /lib/systemd/systemd-timesyncd
490 systemd-t 20 0 89376 7424 6656 S 0.0 0.2 0:00.00 /lib/systemd/systemd-timesyncd
527 root 20 0 234M 7520 6752 S 0.0 0.2 0:00.28 /usr/libexec/accounts-daemon
528 root 20 0 2812 1920 1792 S 0.0 0.0 0:00.30 /usr/sbin/acpid
531 avahi 20 0 7624 3712 3584 S 0.0 0.1 0:00.21 avahi-daemon: running [jainil-VirtualBox.lo
532 root 20 0 9492 2816 2688 S 0.0 0.1 0:00.01 /usr/sbin/cron -f -P
533 messagebu 20 0 10992 6144 3840 S 0.0 0.2 0:01.83 @dbus-daemon --system --address=systemd: --
534 root 20 0 255M 18920 15848 S 0.0 0.5 0:01.00 /usr/sbin/NetworkManager --no-daemon
543 root 20 0 82696 3840 3584 S 0.0 0.1 0:00.08 /usr/sbin/irqbalance --foreground
547 root 20 0 41056 21120 11904 S 0.0 0.5 0:00.41 /usr/bin/python3 /usr/bin/networkd-dispatch

F1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice F8Nice + F9Kill F10Quit
```

Following are the features shown:

- PID:** PID is process id,
- USER:** User column represents the user which started the process.
- PRI:** PRI shows the priority of the
- NI:** The nice value of a process
- VIRT:** The size of the virtual memory of the process
- CPU%:** It shows the percentage of CPU usage by a process
- RES:** The resident set size (text + data + stack) of the process.

- **SHR:** The size of the process's shared pages.
- **MEM%** It shows the percentage of memory usage by the process
- **TIME:** The amount of time has been running for
- **Command:** it shows the command to run that process

Following are the options:

- **F1:** F1 is to show help
- **F2:** F2 is used to select setup
- **F3:** F3 is used to search the process
- **F4:** F4 is used to filter the processes
- **F5:** F5 is used to show the tree of the command
- **F6:** F6 is used to sort the processes by some feature0
- **F7:** Nice
- **F8:** Nice
- **F9:** F9 is used to kill a process
- **F10:** F10 is to quit.