

# Advance Monitoring Commands

→ htop

- Interactive, real-time system monitoring tool for linux.
- Monitors CPU, RAM, Swap and process usage in real-time.
- Find which process is consuming most resources
- Kill unresponsive processes quickly.
- Monitor performance of Docker containers, microservices, or apps on your servers

→ Top-section : System info

- provide summary of system performance.

a) CPU Bars (0, 1, 2, 3)

- Show usage per core.
- Each bar represent one CPU core.

→ Blue/green/red colors show different usage types  
(user, system, I/O wait).

b) Mem: 954M / 3.74G

Mean → using 954 MB out of 3.74GB

swp: 252K / 3.74G

→ Barely using swap memory.  
(good sign).

c: Tasks : 111, 360 thr  
→ 111 processes running , with 360  
total threads.

d: Load Average:  
0.09, 0.07, 0.08  
1, 5, 15 minutes  
→ Below number of cores (4)  
(so system is fine).

e: uptime : 02:33:32  
(system has been on for 2  
hours, 24 minutes)

Column	what it means
PID	process ID (unique for each)
USER	which user started the process
PRI	process priority lower number → higher priority
NI	"Nice" value (affects priority, 0 is default)
VIRT	virtual memory used
RES	Actual RAM used
SHR	shared memory used
CPU %	How much CPU the process is using
MEM / s	How much RAM the process is using.
TIME	Total time since started
Command	The program or service

key

use

F3

search for process  
e.g. gnome, htop - dockers  
etc.

F5

F6

sort by %CPU or %  
MEM  
kill process

F9

## iftop

- > Network Bandwidth Monitoring tool
- > iftop is like top, but for network bandwidth it shows real-time bandwidth usage per connection.
- > who your system is talking to, and how much data is being sent/received.

## =) use Cain

- > Detect Monitored traffic
- > Detect heavy usage
- > Debug slow connections
- > Security check (check unauthorized activity)

-> TX : Transmit (outgoing data)

RX : Receive (incoming data)

$$\text{Total} = \text{TX} + \text{RX}$$

## -> ip route

-> sudo iftop -i wlx...

$\Rightarrow$  125 kb — last 2 seconds  
25.0 kb — 10 seconds  
37.5 kb — 40 seconds

$\Rightarrow$  ams16r29-1A · f46.1el00.net  
Remote hostname or IP address  
your device is communicating  
with.

e.g. 1el00.net is google domain

$\Rightarrow$  672b, 60tb, 580b  
Data rates per this connection  
over last 2, 10, 40 seconds.

$\Rightarrow$  — outgoing traffic  
 $\Leftarrow$  — incoming traffic

Cum - Total amount of data  
transferred @ for a connection  
since you started monitoring.  
sum of all data sent => and  
received

Cum - 1.v — Total data sent =>  
2.v — Total data received =>  
3.v — Total data combined  
(sent + received)

peak  
highest data transfer rate observed  
for Connection ~~seen~~ during monitoring

Peak : 1V - highest speed for data rec.  
 2V - highest speed for data rec.  
 3V - highest speed for (sent + received) combining

Rates :

	2S	10S	40S
TX(out)	"	"	"
RX(in)	"	"	"
Total	"	"	"

- 3) nload
- nload is a based network traffic read time console-monitor.
  - It shows:
    - Incoming traffic
    - outgoing traffic
    - Bandwidth usage over time
  - It shows overall usage for each interface (like eth0, wlan0)
  - Easy to spot if your server is using too much network

## ⇒ Cron Jobs Linux Scheduling

⇒ It lets you automatically run commands or scripts at fixed times, dates or intervals - like

- Every minute
- Every day at 2 AM
- Every Monday at 8 AM

### ⇒ Use cases

Auto Backup	Run Database backup script everyday.
Cleanup tasks	Delete temp files weekly.

Monitoring & Alerts	Send disk usage report every hour.
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Auto-Deployments	Pull code from Git repo every 10 minutes
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Log rotation	Archive logs on schedule
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⇒ It uses special file called crontab (CRON TABLE), which defines what to run and when.

⇒ Edit using  
crontab -e

⇒ List current jobs  
crontab -l

$\Rightarrow$  Minute  
Hour

0-59

Day - od  
Month

0-23

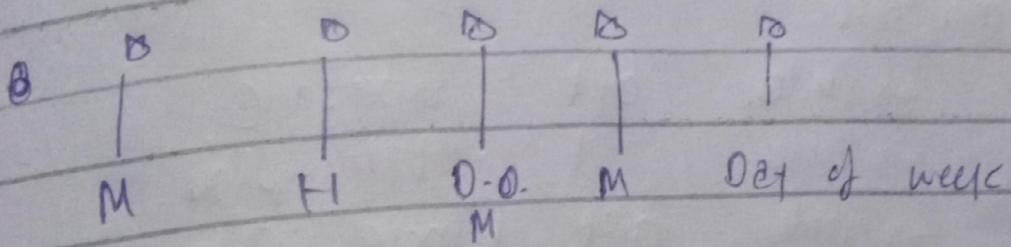
Month

1-31

Day - od  
week

1-12

0-7



$\Rightarrow$   $\circ$   $\circ$   $\circ$   $\circ$   $\circ$  — Every Minute

0  $\circ$   $\circ$   $\circ$   $\circ$   $\circ$  — Every Hour

0 2  $\circ$   $\circ$   $\circ$   $\circ$   $\circ$  — Daily 2 AM

30 3 1  $\circ$   $\circ$   $\circ$  — 3:30 - 1st <sup>Even</sup> Month

0 4  $\circ$   $\circ$   $\circ$   $\circ$   $\circ$  — 4:0 - Every Monday