eBook - RHCSA Certification Preparation

20 Command Line Tools to Monitor Linux Performance

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Being a System or Network administrator tasked with monitoring and debugging Linux system performance problems on a daily basis is an immensely challenging responsibility.

It demands unwavering dedication, a profound understanding of Linux systems, and a constant commitment to ensuring optimal performance and reliability.

After dedicating a decade to working as a Linux Administrator in the IT industry, I have come to truly appreciate the arduous task of monitoring and ensuring the continuous operation of systems.

In light of this, we have curated a comprehensive list of the Top 20 frequently used command-line monitoring tools. These invaluable tools can prove indispensable for every Linux/Unix System Administrator, empowering them to efficiently monitor, diagnose, and maintain the health and performance of their systems.

You might also like:

- *19 Best Linux Bandwidth Monitoring Tools for Network Analysis*
- *15 Useful Performance and Network Monitoring Tools for Linux*
- *6 Key Performance Metrics to Monitor in Linux Servers*
- *Useful Tools to Monitor and Debug Disk I/O Performance in Linux*

These monitoring tools are available under all flavors of **Linux** and can be useful to monitor and find the actual causes of performance problems. This list of commands shown here is very enough for you to pick the one that is suitable for your monitoring scenario.

1. Top – Linux Process Monitoring

Linux **top** command is a performance monitoring program that is used frequently by many system administrators to monitor Linux performance and it is available under many **Linux/Unix-like** operating systems.

The top command is used to display all the running and active real-time processes in an ordered list and updates it regularly. It displays **CPU usage**, **Memory usage**, **Swap Memory**,

Cache Size, **Buffer Size**, **Process PID**, **User**, **Command**s, and much more.

It also shows high [memory and cpu utilization of running processes](). The top command is much useful for system administrators to monitor and take corrective action when required. Let's see the top command in action.

```
# top
```

```
top - 09:49:45 up  4:55,  4 users,  load average: 0.01, 0.02, 0.00
Tasks: 133 total,   1 running, 132 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.0 us,  0.0 sy,  0.0 ni, 99.3 id,  0.0 wa,  0.3 hi,  0.3 si,  0.0 st
MiB Mem :   1070.8 total,    268.2 free,    253.5 used,    549.1 buff/cache
MiB Swap:   9216.0 total,   9174.0 free,     42.0 used.    648.0 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
  37345 root      20   0   64512   4944   4064 R   0.3   0.5   0:00.07 top
      1 root      20   0  264232  10916   7052 S   0.0   1.0   0:05.32 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-kblockd
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
      9 root      20   0       0      0      0 S   0.0   0.0   0:00.86 ksoftirqd/0
     10 root      20   0       0      0      0 I   0.0   0.0   0:00.76 rcu_sched
     11 root      rt   0       0      0      0 S   0.0   0.0   0:00.00 migration/0
     12 root      rt   0       0      0      0 S   0.0   0.0   0:00.02 watchdog/0
     13 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     15 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kdevtmpfs
     16 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
     17 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kauditd
     18 root      20   0       0      0      0 S   0.0   0.0   0:00.00 khungtaskd
     19 root      20   0       0      0      0 S   0.0   0.0   0:00.00 oom_reaper
     20 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 writeback
     21 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kcompactd0
     22 root      25   5       0      0      0 S   0.0   0.0   0:00.00 ksmd
     23 root      39  19       0      0      0 S   0.0   0.0   0:00.37 khugepaged
     24 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 crypto
     25 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kintegrityd
     26 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kblockd
     27 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 tpm_dev_wq
     28 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 md
     29 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 edac-poller
```

Check Linux Running Processes

[For more usage, read: [16 Top Command Examples in Linux [Monitor Linux Processes]()]

2. VmStat – Virtual Memory Statistics

Linux **VmStat** command is used to display statistics of **virtual memory**, **kernel threads**, **disks**, **system processes**, **I/O blocks**, **interrupts**, **CPU activity,** and much more.

Install VmStat on Linux

By default vmstat command is not available under Linux systems you need to install a package called [sysstat](#) (a powerful monitoring tool) that includes a vmstat program.

```
$ sudo yum install sysstat      [On Older CentOS/RHEL & Fedora]
$ sudo dnf install sysstat      [On CentOS/RHEL/Fedora/Rocky Linux &
$ sudo apt-get install sysstat  [On Debian/Ubuntu & Mint]
$ sudo pacman -S sysstat        [On Arch Linux]
```

The common usage of the vmstat command format is.

```
# vmstat

procs -----------memory---------- ---swap-- -----io---- -system-- --
 r  b   swpd   free   buff  cache   si   so    bi    bo   in   cs us
 1  0  43008 275212   1152 561208    4   16   100   105   65  113  0
```

Vmstat System Monitoring Tool

[For more usage, read: [16 Top Command Examples in Linux [Monitor Linux Processes]](#)]

3. Lsof – List Open Files

The **lsof command** is used in many **Linux/Unix-like** systems to display a list of all the open files and processes. The open files included are **disk files**, **network sockets**, **pipes**, **devices,** and **processes**.

One of the main reasons for using this command is when a disk cannot be unmounted and displays the error that files are being used or opened. With this command, you can easily identify which files are in use.

The most common format for **lsof** command is.

```
# lsof

COMMAND     PID   TID TASKCMD              USER   FD      TYPE
systemd       1                            root  cwd       DIR
systemd       1                            root  rtd       DIR
systemd       1                            root  txt       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
systemd       1                            root  mem       REG
...
```

```
systemd       1                         root  mem       REG                8,2  1805368  134275205 /usr/lib64/libunistring.so.2.1.0
systemd       1                         root  mem       REG                8,2   355456  134275293 /usr/lib64/libpcap.so.1.9.0
systemd       1                         root  mem       REG                8,2   145984  134261219 /usr/lib64/libgpg-error.so.0.24.2
systemd       1                         root  mem       REG                8,2    71528  134270542 /usr/lib64/libjson-c.so.4.0.0
systemd       1                         root  mem       REG                8,2   371736  134910992 /usr/lib64/libdevmapper.so.1.02
systemd       1                         root  mem       REG                8,2    26704  134275177 /usr/lib64/libattr.so.1.1.2448
systemd       1                         root  mem       REG                8,2  3058736  134919279 /usr/lib64/libcrypto.so.1.1.1c
systemd       1                         root  mem       REG                8,2   615504  134919281 /usr/lib64/libssl.so.1.1.1c
systemd       1                         root  mem       REG                8,2    95232  134261206 /usr/lib64/libz.so.1.2.11
systemd       1                         root  mem       REG                8,2    24736  134266276 /usr/lib64/libcap-ng.so.0.0.0
systemd       1                         root  mem       REG                8,2    33224  134261224 /usr/lib64/libuuid.so.1.3.0
systemd       1                         root  mem       REG                8,2    36824  134261050 /usr/lib64/libdl-2.28.so
systemd       1                         root  mem       REG                8,2   553480  134260151 /usr/lib64/libpcre2-8.so.0.7.1
systemd       1                         root  mem       REG                8,2   339328  134910989 /usr/lib64/libblkid.so.1.1.0
systemd       1                         root  mem       REG                8,2    96056  134275191 /usr/lib64/liblz4.so.1.8.1
systemd       1                         root  mem       REG                8,2   192024  134266238 /usr/lib64/liblzma.so.5.2.4
systemd       1                         root  mem       REG                8,2   165624  134275210 /usr/lib64/libidn2.so.0.3.6
systemd       1                         root  mem       REG                8,2    33240  134275311 /usr/lib64/libip4tc.so.0.1.0
```

List Open Files in Linux

[For more usage, read: [How to Use 'lsof' Command to Check Open Files in Linux](#)]

4. Tcpdump – Network Packet Analyzer

The **tcpdump** command is one of the most widely used command-line [network packet analyzer](#) or **packet sniffer** programs that is used to capture or filter **TCP/IP** packets that are received or transferred on a specific interface over a network.

It also provides an option to save captured packages in a file for later analysis. tcpdump is almost available in all major Linux distributions.

```
# tcpdump -i enp0s3
```

```
tcpdump: verbose output suppressed, use -v or -vv for full protocol
listening on enp0s3, link-type EN10MB (Ethernet), capture size 26214
10:19:34.635893 IP tecmint.ssh > 192.168.0.124.45611: Flags [P.], se
10:19:34.636289 IP 192.168.0.124.45611 > tecmint.ssh: Flags [.], ack
10:19:34.873060 IP _gateway.57682 > tecmint.netbios-ns: NBT UDP PACK
10:19:34.873104 IP tecmint > _gateway: ICMP tecmint udp port netbios
10:19:34.895453 IP _gateway.48953 > tecmint.netbios-ns: NBT UDP PACK
10:19:34.895501 IP tecmint > _gateway: ICMP tecmint udp port netbios
10:19:34.992693 IP 142.250.4.189.https > 192.168.0.124.38874: UDP, l
10:19:35.010127 IP 192.168.0.124.38874 > 142.250.4.189.https: UDP, l
10:19:35.135578 IP _gateway.39383 > 192.168.0.124.netbios-ns: NBT UD
10:19:35.135586 IP 192.168.0.124 > _gateway: ICMP 192.168.0.124 udp
10:19:35.155827 IP _gateway.57429 > 192.168.0.124.netbios-ns: NBT UD
10:19:35.155835 IP 192.168.0.124 > _gateway: ICMP 192.168.0.124 udp
...
```

Tcpdump – Network Packet Analyzer

[For more usage, read: [12 Tcpdump Commands to Analyzer Network Packets](#)]

5. Netstat – Network Statistics

The **netstat** is a command-line tool for monitoring **incoming** and **outgoing network** packet statistics as well as interface statistics. It is a very useful tool for every system administrator to monitor network performance and troubleshoot network-related problems.

```
# netstat -a | more

Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address
tcp        0      0 0.0.0.0:sunrpc          0.0.0.0:*
tcp        0      0 tecmint:domain          0.0.0.0:*
tcp        0      0 0.0.0.0:ssh             0.0.0.0:*
tcp        0      0 localhost:postgres      0.0.0.0:*
tcp        0      0 tecmint:ssh             192.168.0.124:45611
tcp6       0      0 [::]:sunrpc             [::]:*
tcp6       0      0 [::]:ssh                [::]:*
tcp6       0      0 localhost:postgres      [::]:*
udp        0      0 0.0.0.0:mdns            0.0.0.0:*
udp        0      0 localhost:323           0.0.0.0:*
udp        0      0 tecmint:domain          0.0.0.0:*
udp        0      0 0.0.0.0:bootps          0.0.0.0:*
udp        0      0 tecmint:bootpc          _gateway:bootps
...
```

```
udp        0      0 0.0.0.0:bootps          0.0.0.0:*
udp        0      0 tecmint:bootpc          _gateway:bootps         ESTABLISHED
```

Netstat – Monitor Linux Network Connections

[For more usage, read: 20 Netstat Commands for Linux Network Management]

While in present-day netstat has been deprecated in favor of the ss command, you may still discover netstat in your networking toolkit.

6. Htop – Linux Process Monitoring

htop is a much advanced interactive and real-time Linux process monitoring tool, which is much similar to Linux **top command** but it has some rich features like a **user-friendly interface to manage processes**, **shortcut keys**, **vertical and horizontal views of the processes,** and much more.

```
# htop
```

```
CPU[|                          0.7%]   Tasks: 53, 44 thr; 1 running
Mem[||||||||||||||||||237M/1.05G]   Load average: 0.37 0.11 0.04
Swp[|                    42.0M/9.00G]   Uptime: 05:41:34

  PID USER      PRI  NI  VIRT   RES   SHR S CPU%▽MEM%   TIME+  Command
38228 root       20   0 28020  4064  3352 R  0.7  0.4  0:00.09 htop
    1 root       20   0  258M 10920  7056 S  0.0  1.0  0:05.41 /usr/lib/system
  562 root       20   0 92964  8588  7748 S  0.0  0.8  0:01.14 /usr/lib/system
  599 root       20   0  116M  8980  5536 S  0.0  0.8  0:00.72 /usr/lib/system
  716 rpc        20   0 67120  4616  4280 S  0.0  0.4  0:00.05 /usr/bin/rpcbin
  726 root       16  -4  139M  2284  1880 S  0.0  0.2  0:00.08 /sbin/auditd
  727 root       16  -4  139M  2284  1880 S  0.0  0.2  0:00.00 /sbin/auditd
  728 root       16  -4 48484  2136  1832 S  0.0  0.2  0:00.03 /usr/sbin/sedis
  729 root       16  -4  139M  2284  1880 S  0.0  0.2  0:00.01 /sbin/auditd
  751 root       20   0 83672  5912  5048 S  0.0  0.5  0:00.43 /usr/lib/system
  755 avahi      20   0 82752  3412  3188 S  0.0  0.3  0:00.23 avahi-daemon: r
  756 root       20   0  207M  8508  8104 S  0.0  0.8  0:00.16 /usr/sbin/sssd
  760 root       20   0 26368  3692  3168 S  0.0  0.3  0:00.05 /usr/sbin/smart
  762 root       20   0  451M  7484  6088 S  0.0  0.7  0:00.09 /usr/sbin/Modem
  765 polkitd    20   0 1599M 19936 13248 S  0.0  1.8  0:03.59 /usr/lib/polkit
  766 dbus       20   0 91772  7692  4940 S  0.0  0.7  0:02.89 /usr/bin/dbus-d
  769 chrony     20   0  125M  2884  2460 S  0.0  0.3  0:00.22 /usr/sbin/chron
  772 libstorag  20   0 18872  1908  1780 S  0.0  0.2  0:00.13 /usr/bin/lsmd -
```

Htop – Linux System Process Viewer

htop is a third-party tool, which doesn't come with Linux systems, you need to install it using your system package manager tool.

For more information on htop installation read our article – Install Htop (Linux Process Monitoring) in Linux.

7. Iotop – Monitor Linux Disk I/O

iotop is also much similar to the **top command** and **htop program**, but it has an accounting function to monitor and display real-time **Disk I/O** and **processes**.

iotop tool is much useful for finding the exact process and highly used disk read/writes of the processes.

Install Iotop on Linux

By default, the **iotop** command is not available under Linux and you need to install it as shown.

```
$ sudo yum install iotop      [On Older CentOS/RHEL & Fedora]
$ sudo dnf install iotop      [On CentOS/RHEL/Fedora/Rocky Linux & A
$ sudo apt-get install iotop  [On Debian/Ubuntu & Mint]
$ sudo pacman -S iotop        [On Arch Linux]
```

The common usage of the iotop command format is.

```
# iotop
```

iotop – Monitor Linux Disk IO Usage

[For more usage, read: [Iotop – Monitor Linux Disk I/O Activity and Usage Per-Process Basis](#)]

8. Iostat – Input/Output Statistics

iostat is a simple tool that will collect and show system **input** and **output** storage device statistics. This tool is often used to trace storage device performance issues including **devices**, **local disks**, and **remote disks** such as **NFS**.

Install Iostat on Linux

To get the **iostat** command, you need to install a package called **sysstat** as shown.

```
$ sudo yum install sysstat      [On Older CentOS/RHEL & Fedora]
$ sudo dnf install sysstat      [On CentOS/RHEL/Fedora/Rocky Linux &
$ sudo apt-get install sysstat  [On Debian/Ubuntu & Mint]
$ sudo pacman -S sysstat        [On Arch Linux]
```

The common usage of the iostat command format is.

```
# iostat

Linux 4.18.0-193.el8.x86_64 (tecmint)   04/05/2021      _x86_64_

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0.21    0.03    0.59    2.50    0.00   96.67

Device             tps    kB_read/s    kB_wrtn/s    kB_read    kB_wr
sda               3.95        83.35        89.63    1782431    19166
```

```
[root@tecmint:~]# iostat
Linux 4.18.0-193.el8.x86_64 (tecmint)   04/05/2021      _x86_64_

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0.21    0.03    0.59    2.50    0.00   96.67

Device             tps    kB_read/s    kB_wrtn/s    kB_read    kB_wrtn
sda               3.95        83.35        89.63    1782431    1916653
```

iostat – Monitor Disk IO Statistics

[For more usage, read: Linux Performance Monitoring with Iostat Commands]

9. IPTraf – Real-Time IP LAN Monitoring

IPTraf is an open-source console-based real-time network (**IP LAN**) monitoring utility for **Linux**. It collects a variety of information such as IP traffic monitor that passes over the network, including TCP flag information, ICMP details, TCP/UDP traffic breakdowns, TCP connection packets, and byte counts.

It also gathers information on general and detailed interface statistics of TCP, UDP, IP, ICMP, non-IP, IP checksum errors, interface activity, etc.

IPTraf IP Network Monitor

[For more usage, read: [IPTraf-ng – A Console-Based Network Monitoring Tool](#)]

10. Psacct or Acct – Monitor User Activity

psacct or **acct** tools are very useful for monitoring each user's activity on the system. Both daemons run in the background and keep a close watch on the overall activity of each user on the system and also what resources are being consumed by them.

These tools are very useful for system administrators to track each user's activity like what they are doing, what commands they issued, how many resources are used by them, how long they are active on the system etc.

```
[root@tecmint:~]# ac -d tecmint
Today   total        2.47
[root@tecmint:~]#
```

psacct – Monitor Linux User Activities

[For more usage, read: [How to Monitor Linux Users Activity with psacct or acct Tools](#)]

11. Monit – Linux Process and Services Monitoring

Monit is a free open-source and web-based process supervision utility that automatically monitors and manages system processes, programs, files, directories, permissions, checksums, and filesystems.

It monitors services like Apache, MySQL, Mail, FTP, ProFTP, Nginx, SSH, and so on. The system status can be viewed from the command line or using its own web interface.

Parameter	Value
Name	tecmint
Status	OK
Monitoring status	Monitored
Monitoring mode	active
On reboot	start
Load average	[0.00] [0.02] [0.00]
Cpu	0.0%us 0.1%sy 0.0%wa
Memory usage	223.7 MB [20.9%]
Swap usage	41.8 MB [0.5%]
Uptime	6h 30m
Boot time	Mon, 05 Apr 2021 04:53:55
Data collected	Mon, 05 Apr 2021 11:24:03

Monit Monitor Linux System

For installation and configuration, read our article – How to Install and Setup Monit (Linux Process and Services Monitoring) Program.

12. NetHogs – Monitor Per Process Network Bandwidth

NetHogs is an open-source nice small program (similar to Linux **top command**) that keeps a tab on each process network activity on your system. It also keeps track of real-time network traffic bandwidth used by each program or application.

```
# nethogs
```

Nethogs Monitor Network Traffic in Linux

For installation and usage, read our article: Monitor Linux Network Bandwidth Using NetHogs

13. iftop – Network Bandwidth Monitoring

iftop is another terminal-based free open source system monitoring utility that displays a frequently updated list of network bandwidth utilization (source and destination hosts) that passes through the network interface on your system.

iftop is analogous to '**top**' in the context of network usage, much like how '**top**' provides insights into CPU usage.

iftop belongs to the esteemed 'top' family of network monitoring tools. Specifically designed to observe a user-selected network interface, it renders real-time data on the current bandwidth utilization between two specified hosts.

```
# iftop
```

iftop – Network Bandwidth Monitoring

For installation and usage, read our article: iftop – Monitor Network Bandwidth Utilization

14. Monitorix – System and Network Monitoring

Monitorix is a free lightweight utility that is designed to run and monitor system and network resources as many as possible in **Linux/Unix** servers.

It has a built-in **HTTP** web server that regularly collects system and network information and displays them in graphs. It Monitors system load average and usage, **memory allocation**, **disk driver health**, **system services**, network ports, **mail statistics** (**Sendmail**, **Postfix**, **Dovecot**, etc), **MySQL statistics,** and many more.

It is designed to monitor overall system performance and helps in detecting failures, bottlenecks, abnormal activities, etc.

Monitorix Monitoring

For installation and usage, read our article: [Monitorix a System and Network Monitoring Tool for Linux]

15. Arpwatch – Ethernet Activity Monitor

Arpwatch is a kind of program that is designed to monitor the Address Resolution of (**MAC** and **IP** address changes) of **Ethernet** network traffic on a Linux network.

It continuously keeps watch on Ethernet traffic and produces a log of **IP** and **MAC** address pair changes along with a timestamp on a network. It also has a feature to send email alerts to administrators, when a pairing is added or changes. It is very useful in detecting **ARP** spoofing on a network.

```
[root@tecmint:~]# arpwatch -i enp0s3
[root@tecmint:~]# tail -f /var/log/messages
Apr  5 11:40:42 osboxes systemd[1]: Started Network Manager Script Dispatcher Se
rvice.
Apr  5 11:42:33 osboxes systemd[1]: Started /usr/bin/systemctl start man-db-cach
e-update.
Apr  5 11:42:33 osboxes systemd[1]: Starting man-db-cache-update.service...
Apr  5 11:42:33 osboxes systemd[1]: Reloading.
Apr  5 11:42:48 osboxes kernel: device enp0s3 entered promiscuous mode
Apr  5 11:42:48 osboxes arpwatch[41055]: listening on enp0s3
Apr  5 11:42:52 osboxes systemd[1]: Started man-db-cache-update.service.
Apr  5 11:43:00 osboxes arpwatch[41055]: new station 192.168.0.1 98:da:c4:3e:c8:
4c
Apr  5 11:43:00 osboxes arpwatch[41055]: new station 192.168.0.124 38:b1:db:7c:7
```

```
8:c7
Apr  5 11:43:05 osboxes arpwatch[41055]: new station 192.168.0.159 08:00:27:d2:f
```

Arpwatch – Monitor ARP Traffic

For installation and usage, read our article: Arpwatch to Monitor Ethernet Activity

16. Suricata – Network Security Monitoring

Suricata is a high-performance open-source **Network Security** and **Intrusion Detection** and **Prevention Monitoring System** for **Linux**, **FreeBSD,** and **Windows**.

It was designed and owned by a non-profit foundation **OISF** (**Open Information Security Foundation**).

For installation and usage, read our article: Suricata – A Network Intrusion Detection and Prevention System

17. VnStat PHP – Monitoring Network Bandwidth

VnStat PHP is a web-based frontend application for the most popular networking tool called "**vnstat**". **VnStat PHP** monitors network traffic usage in nicely graphical mode.

It displays the total **IN** and **OUT** network traffic usage in **hourly**, **daily**, **monthly,** and **full summary** reports.

For installation and usage, read our article: Monitoring Network Bandwidth Usage

18. Nagios – Network/Server Monitoring

Nagios is a leading open-source powerful monitoring system that enables network/system administrators to identify and resolve server-related problems before they affect major business processes.

With the Nagios system, administrators can able to monitor remote Linux, Windows, Switches, Routers, and Printers on a single window. It shows critical warnings and indicates if something went wrong in your network/server which indirectly helps you to begin remediation processes before they occur.

For installation, configuration, and usage, read our article – Install Nagios Monitoring System to Monitor Remote Linux/Windows Hosts

19. Nmon: Monitor Linux Performance

Nmon (stands for Nigel's Performance Monitor) tool, which is used to monitor all Linux resources such as CPU, Memory, Disk Usage, Network, Top processes, NFS, Kernel, and much more. This tool comes in two modes: Online Mode and Capture Mode.

The Online Mode is used for real-time monitoring and Capture Mode is used to store the output in CSV format for later processing.

Nmon – Linux Performance Monitoring tool

For installation and usage, read our article: [Install Nmon (Performance Monitoring) Tool in Linux]

20. Collectl: All-in-One Performance Monitoring Tool

Collectl is yet another powerful and feature-rich command-line-based utility, that can be used to gather information about Linux system resources such as CPU usage, memory, network, inodes, processes, nfs, TCP, sockets, and much more.

```
  35   6  1053   4322     52      7      0      0      1      2      0      3
#<--------CPU--------><----------Disks-----------><----------Network---------->
#cpu sys inter  ctxsw KBRead  Reads KBWrit Writes   KBIn  PktIn  KBOut  PktOut
  19   2   927   2352      0      0      0      0      1      4      1       7
  22   5   926   2177      0      0      0      0      1      1      0       1
  34   6  1261   4487      0      0    136      3      1      5      3       6
  18   2  1022   2103      0      0   1164    159      1      5      1       7
  27   4  1024   2742      0      0      0      0      1      7      1       7
  20   4   844   1699      0      0     72      2      1      1      0       1
  16   3   854   2093      0      0      4      1      3     12      0       5
```

Collectl Monitoring

For installation and usage, read our article: [Install Collectl (All-in-One Performance Monitoring) Tool in Linux]

We would like to know what kind of **monitoring programs** you use to **monitor the performance of your Linux servers**. If we've missed any important tool that you would like us to include in this list, please inform us via comments, and please don't forget to share it.

linux monitoring

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Ravi Saive

I am an experienced GNU/Linux expert and a full-stack software developer with over a decade in the field of Linux and Open Source technologies

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morduan

October 9, 2023 at 2:58 pm

Did you have some methods to track the performance of kernel state functions during the execution of a command? For example, when executing the **df** command, the execution time of the read function that reads information in kernel mode, CPU consumption, etc.

Reply

BP Sydney

August 7, 2021 at 5:40 pm

Thank you. Extremely useful.

Reply

Bindas Yar

January 13, 2021 at 12:13 pm

Memorize these for job interviews and pretend to know about them. Once you get hired, just sit back, relax, and enjoy.

Reply

user214

May 27, 2020 at 1:42 am

I Added this to my browser bookmark bar as cool

Reply

Joel Wangolo

February 26, 2020 at 5:25 pm

I use this "**Lsof**" command a lot and there is not mentioned here about **goaccess**. I use it a lot to monitor Nginx log and other Nginx traffic stats.

Reply

kalyan

December 3, 2019 at 4:41 pm

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I need help with monitoring URL by Nagios tool. Currently, I have installed Nagios

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