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≡ Menu

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- Free eBook
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- Contact
- About

UNIX / Linux: 10 Netstat Command Examples

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Netstat command displays various network related information such as network connections, routing tables, interface statistics, masquerade connections, multicast memberships etc.,

In this article, let us review 10 practical unix **netstat command** examples.

1. List All Ports (both listening and non listening ports)

List all ports using netstat -a

```
# netstat -a | more
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 localhost:30037         *:*                     LISTEN
udp        0      0 *:bootpc                *:*

Active UNIX domain sockets (servers and established)
Proto RefCnt Flags       Type       State         I-Node   Path
unix  2      [ ACC ]     STREAM     LISTENING     6135     /tmp/.X11-unix/X0
unix  2      [ ACC ]     STREAM     LISTENING     5140     /var/run/acpid.socket
```

List all tcp ports using netstat -at

```
# netstat -at
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 localhost:30037         *:*                     LISTEN
tcp        0      0 localhost:ipp           *:*                     LISTEN
tcp        0      0 *:smtp                  *:*                     LISTEN
tcp6       0      0 localhost:ipp           [::]:*                  LISTEN
```

List all udp ports using netstat -au

```
# netstat -au
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
udp        0      0 *:bootpc                *:*
udp        0      0 *:49119                 *:*
udp        0      0 *:mdns                  *:*
```

2. List Sockets which are in Listening State

List only listening ports using netstat -l

```
# netstat -l
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 localhost:ipp           *:*                     LISTEN
tcp6       0      0 localhost:ipp           [::]:*                  LISTEN
udp        0      0 *:49119                 *:*
```

List only listening TCP Ports using netstat -lt

```
# netstat -lt
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 localhost:30037         *:*                     LISTEN
tcp        0      0 *:smtp                  *:*                     LISTEN
tcp6       0      0 localhost:ipp           [::]:*                  LISTEN
```

List only listening UDP Ports using netstat -lu

```
# netstat -lu
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
udp        0      0 *:49119                 *:*
udp        0      0 *:mdns                  *:*
```

List only the listening UNIX Ports using netstat -lx

```
# netstat -lx
Active UNIX domain sockets (only servers)
Proto RefCnt Flags       Type       State         I-Node   Path
unix  2      [ ACC ]     STREAM     LISTENING     6294     private/maildrop
unix  2      [ ACC ]     STREAM     LISTENING     6203     public/cleanup
unix  2      [ ACC ]     STREAM     LISTENING     6302     private/ifmail
unix  2      [ ACC ]     STREAM     LISTENING     6306     private/bsmtp
```

3. Show the statistics for each protocol

Show statistics for all ports using netstat -s

```
# netstat -s
Ip:
    11150 total packets received
    1 with invalid addresses
    0 forwarded
    0 incoming packets discarded
    11149 incoming packets delivered
    11635 requests sent out
Icmp:
    0 ICMP messages received
    0 input ICMP message failed.
Tcp:
    582 active connections openings
    2 failed connection attempts
    25 connection resets received
Udp:
    1183 packets received
    4 packets to unknown port received.
.....
```

Show statistics for TCP (or) UDP ports using netstat -st (or) -su

```
# netstat -st

# netstat -su
```

4. Display PID and program names in netstat output using netstat -p

netstat -p option can be combined with any other netstat option. This will add the “PID/Program Name” to the netstat output. This is very useful while debugging to identify which program is running on a particular port.

```
# netstat -pt
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        1      0 ramesh-laptop.loc:47212 192.168.185.75:www      CLOSE_WAIT  2109/firefox
tcp        0      0 ramesh-laptop.loc:52750 lax:www ESTABLISHED 2109/firefox
```

5. Don’t resolve host, port and user name in netstat output

When you don’t want the name of the host, port or user to be displayed, use netstat -n option. This will display in numbers, instead of resolving the host name, port name, user name.

This also speeds up the output, as netstat is not performing any look-up.

```
# netstat -an
```

If you don’t want only any one of those three items (ports, or hosts, or users) to be resolved, use following commands.

```
# netsat -a --numeric-ports
```

```
# netsat -a --numeric-hosts

# netsat -a --numeric-users
```

6. Print netstat information continuously

netstat will print information continuously every few seconds.

```
# netstat -c
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 ramesh-laptop.loc:36130 101-101-181-225.ama:www ESTABLISHED
tcp        1      1 ramesh-laptop.loc:52564 101.11.169.230:www      CLOSING
tcp        0      0 ramesh-laptop.loc:43758 server-101-101-43-2:www ESTABLISHED
tcp        1      1 ramesh-laptop.loc:42367 101.101.34.101:www      CLOSING
^C
```

7. Find the non supportive Address families in your system

```
netstat --verbose
```

At the end, you will have something like this.

```
        netstat: no support for `AF IPX' on this system.
        netstat: no support for `AF AX25' on this system.
        netstat: no support for `AF X25' on this system.
        netstat: no support for `AF NETROM' on this system.
```

8. Display the kernel routing information using netstat -r

```
# netstat -r
Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
192.168.1.0     *               255.255.255.0   U         0 0          0 eth2
link-local      *               255.255.0.0     U         0 0          0 eth2
default         192.168.1.1     0.0.0.0         UG        0 0          0 eth2
```

Note: Use netstat -rn to display routes in numeric format without resolving for host-names.

9. Find out on which port a program is running

```
# netstat -ap | grep ssh
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
tcp        1      0 dev-db:ssh           101.174.100.22:39213        CLOSE_WAIT  -
tcp        1      0 dev-db:ssh           101.174.100.22:57643        CLOSE_WAIT  -
```

Find out which process is using a particular port:

```
# netstat -an | grep ':80'
```

10. Show the list of network interfaces

```
# netstat -i
Kernel Interface table
Iface   MTU Met   RX-OK RX-ERR RX-DRP RX-OVR    TX-OK TX-ERR TX-DRP TX-OVR Flg
eth0       1500 0          0      0      0 0             0      0      0      0 BMU
eth2       1500 0      26196      0      0 0         26883      6      0      0 BMRU
lo        16436 0          4      0      0 0             4      0      0      0 LRU
```

Display extended information on the interfaces (similar to ifconfig) using netstat -ie:

```
# netstat -ie
Kernel Interface table
eth0      Link encap:Ethernet  HWaddr 00:10:40:11:11:11
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
          Memory:f6ae0000-f6b00000
```


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