tcpdump Command in Linux with Examples

manav014

tcpdump is a packet sniffing and packet analyzing tool for a System Administrator to troubleshoot connectivity issues in Linux. It is used to capture, filter, and analyze network traffic such as TCP/IP packets going through your system. It is many times used as a security tool as well. It saves the captured information in a pcap file, these pcap files can then be opened through Wireshark or through the command tool itself.

Installing tcpdump tool in Linux

Many Operating Systems have tcpdump command pre-installed but to install it, use the following commands. **For RedHat based linux OS**

```
yum install tcpdump
```

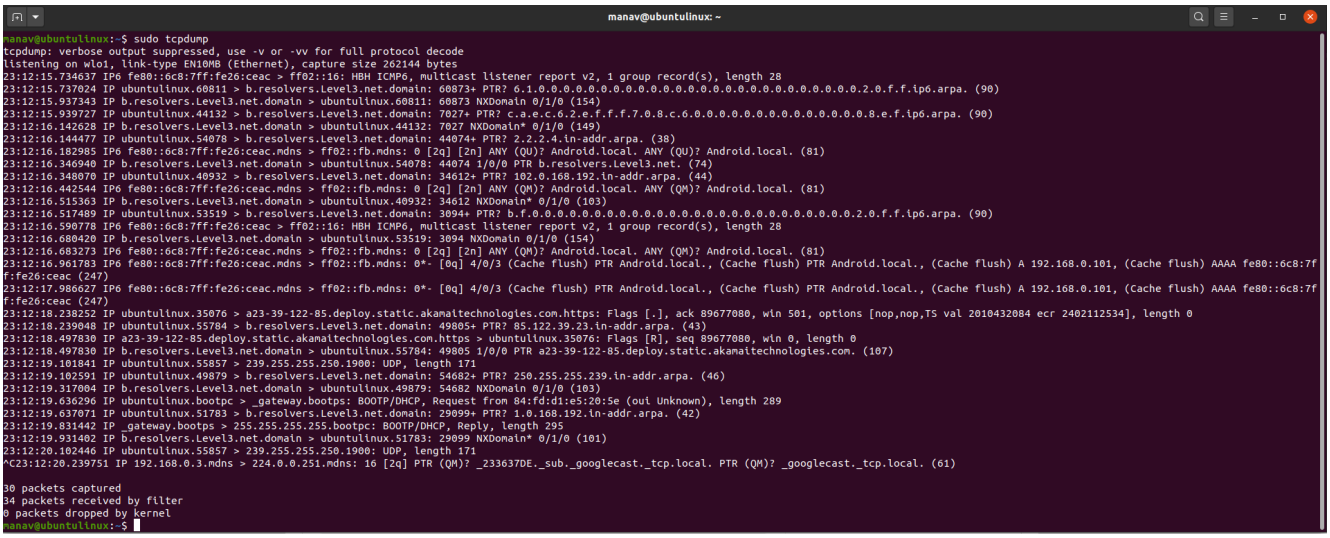
For Ubuntu/Debian OS

```
apt install tcpdump
```

Working with tcpdump command

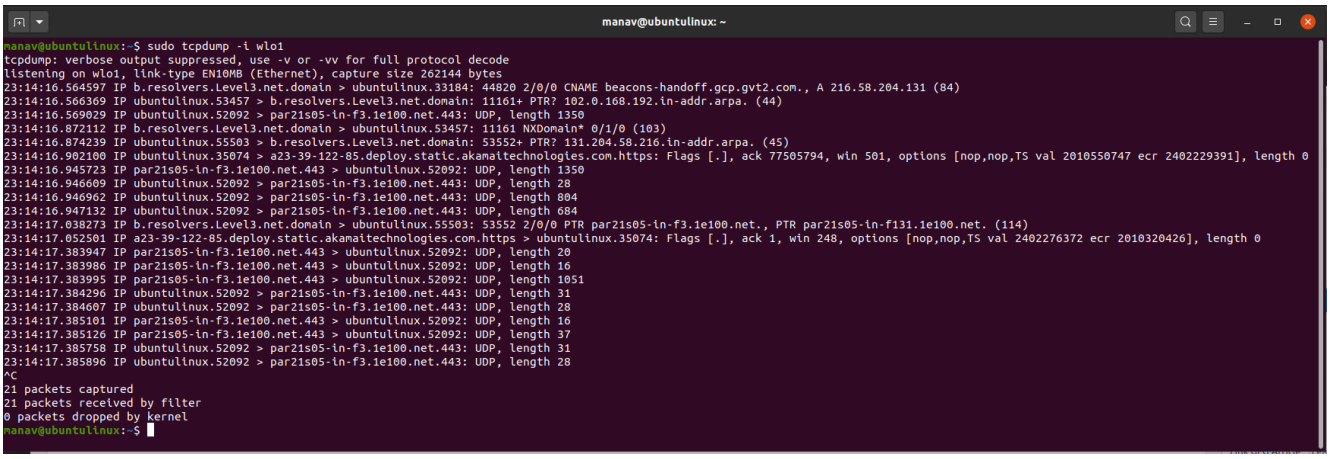
1. To capture the packets of current network interface

```
sudo tcpdump
```



This will capture the packets from the current interface of the network through which the system is connected to the internet. **2.** To capture packets from a specific network interface

```
sudo tcpdump -i wlo1
```



This command will now capture the packets from wlo1 network interface. **3.** To capture specific number of packets

```
sudo tcpdump -c 4 -i wlo1
```

```
manav@ubuntulinux: ~
manav@ubuntulinux:~$ sudo tcpdump -c 4 -i wlo1
tcpdump: verbose output suppressed, use -v or -vv for full protocol decode
listening on wlo1, link-type EN10MB (Ethernet), capture size 262144 bytes
23:15:20.257784 IP 192.168.0.3.mdns > 224.0.0.251.mdns: 25 [2q] PTR (QM)? _233637DE._sub._googlecast._tcp.local. PTR (QM)? _googlecast._tcp.local. (61)
23:15:20.259572 IP ubuntulinux.50749 > b.resolvers.Level3.net.domain: 37963+ PTR? 251.0.0.224.in-addr.arpa. (42)
23:15:20.461763 IP b.resolvers.Level3.net.domain > ubuntulinux.50749: 37963 NXDomain 0/1/0 (99)
23:15:20.463051 IP ubuntulinux.54591 > b.resolvers.Level3.net.domain: 7530+ PTR? 3.0.168.192.in-addr.arpa. (42)
4 packets captured
7 packets received by filter
0 packets dropped by kernel
manav@ubuntulinux:~$
```

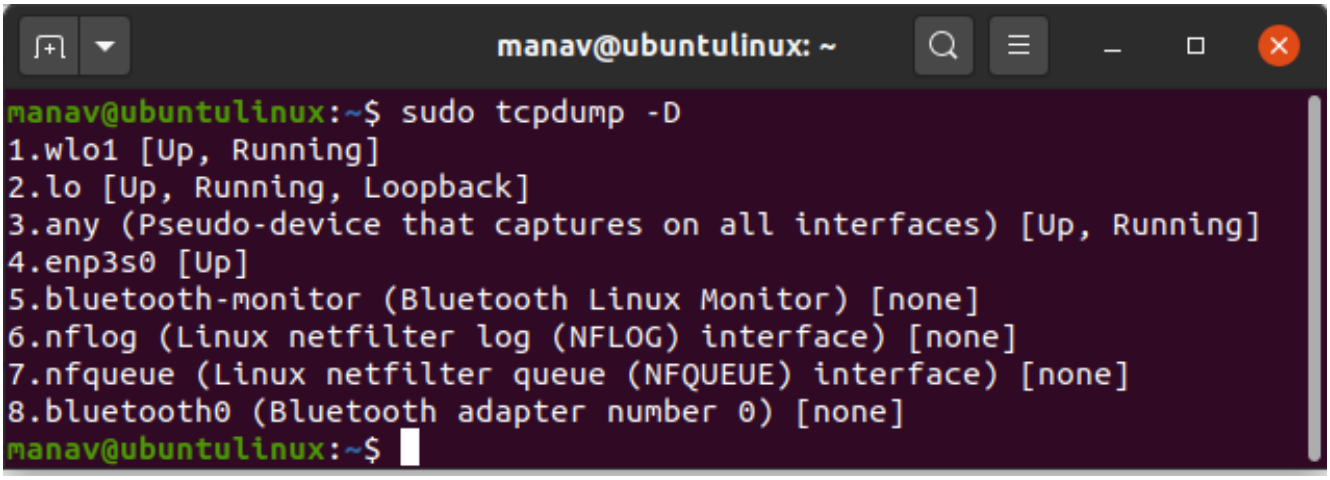
This command will capture only 4 packets from the wlo1 interface. **4.** To print captured packets in ASCII format

```
sudo tcpdump -A -i wlo1
```

```
manav@ubuntulinux: ~
manav@ubuntulinux:~$ sudo tcpdump -A -i wlo1
tcpdump: verbose output suppressed, use -v or -vv for full protocol decode
listening on wlo1, link-type EN10MB (Ethernet), capture size 262144 bytes
23:16:40.134239 IP ec2-35-161-25-33.us-west-2.compute.amazonaws.com.https > ubuntulinux.49890: Flags [P.], seq 3549039789:3549039820, ack 1122930302, win 282, options [nop,nop,TS val 1076801243 ecr 2330761273],
length 31
E..S.7@.%...#..I...f........B..~.....
@......9......T....q...3C...'k.k.....
23:16:40.134282 IP ubuntulinux.49890 > ec2-35-161-25-33.us-west-2.compute.amazonaws.com.https: Flags [.], ack 31, win 501, options [nop,nop,TS val 2330766296 ecr 1076801243], length 0
E..4    .@.@.3....f#..!....B..~.............
....@...
23:16:40.134317 IP ec2-35-161-25-33.us-west-2.compute.amazonaws.com.https > ubuntulinux.49890: Flags [F.], seq 31, ack 1, win 282, options [nop,nop,TS val 1076801243 ecr 2330761273], length 0
E..4.8@.%...#..!...f........B..~.....@.....
@......9
23:16:40.135955 IP ubuntulinux.51470 > b.resolvers.Level3.net.domain: 30561+ PTR? 102.0.168.192.in-addr.arpa. (44)
E..H.5@.@..]...f.......5.4.Wwa...........102.0.168.192.in-addr.arpa.....
23:16:40.178214 IP ubuntulinux.49890 > ec2-35-161-25-33.us-west-2.compute.amazonaws.com.https: Flags [.], ack 32, win 501, options [nop,nop,TS val 2330766340 ecr 1076801243], length 0
E..4    .@.@.3....f#..!....B..~.............
....@...
23:16:40.294106 IP 192.168.0.3.mdns > 224.0.0.251.mdns: 29 [2q] PTR (QM)? _233637DE._sub._googlecast._tcp.local. PTR (QM)? _googlecast._tcp.local. (61)
E..Y..@.................E3............        _233637DE._sub._googlecast._tcp.local..........
23:16:40.334162 IP b.resolvers.Level3.net.domain > ubuntulinux.51470: 30561 NXDomain* 0/1/0 (103)
E ....@.5.~8.......f.5...o#     wa...........102.0.168.192.in-addr.arpa............*0./        localhost..nobody.invalid............. :...*0
23:16:40.337133 IP ubuntulinux.50547 > b.resolvers.Level3.net.domain: 61778+ PTR? 251.0.0.224.in-addr.arpa. (42)
E..F.W@.@..=...f.....s.5.2.U.R...........251.0.0.224.in-addr.arpa.....
23:16:40.538948 IP b.resolvers.Level3.net.domain > ubuntulinux.50547: 61778 NXDomain 0/1/0 (99)
E ....@.5.~<........f.5.s.k3..R...........251.0.0.224.in-addr.arpa............
h..sns.dns.icann.org..noc.:xYZ.... .....        :.....
23:16:40.540226 IP ubuntulinux.58407 > b.resolvers.Level3.net.domain: 39497+ PTR? 3.0.168.192.in-addr.arpa. (42)
E..F.f@.@.....f.....'.5.2.U.I...........3.0.168.192.in-addr.arpa.....
23:16:40.743758 IP b.resolvers.Level3.net.domain > ubuntulinux.58407: 39497 NXDomain* 0/1/0 (101)
E ....@.5.~:.......f.5.'.m.>.I...........3.0.168.192.in-addr.arpa............*0./      localhost..nobody.invalid............. :...*0
^C
11 packets captured
11 packets received by filter
0 packets dropped by kernel
manav@ubuntulinux:~$
```

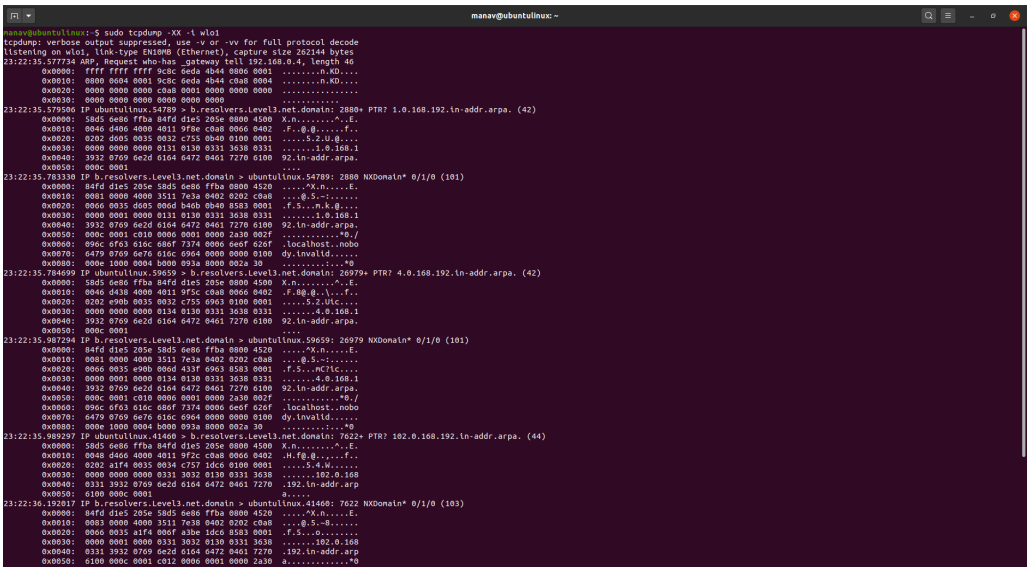
This command will now print the captured packets from wlo1 to ASCII value. **5.** To display all available interfaces

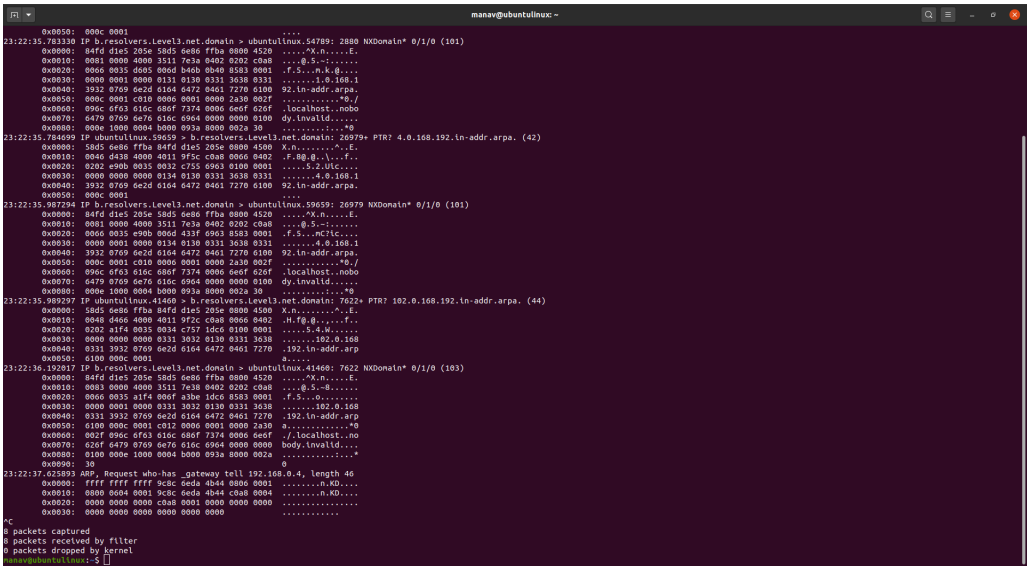
```
sudo tcpdump -D
```



This command will display all the interfaces that are available in the system. **6.** To display packets in HEX and ASCII values

```
sudo tcpdump -XX -i wlo1
```

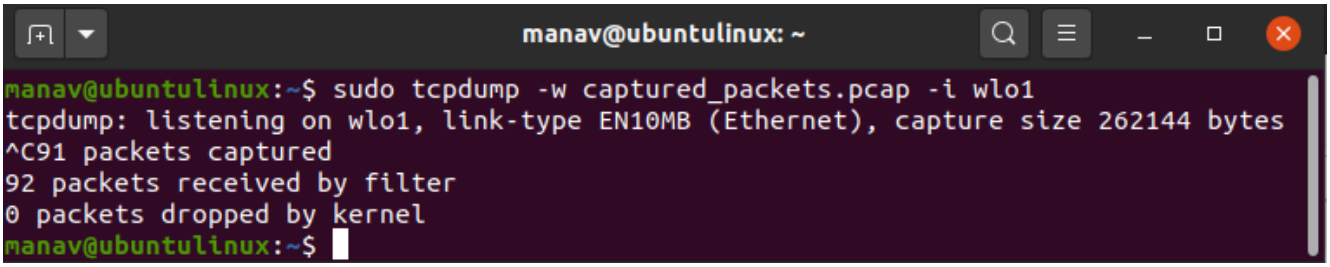




This command will

now print the packets captured from the wlo1 interface in the HEX and ASCII values. **7.** To save captured packets into a file

```
sudo tcpdump -w captured_packets.pcap -i wlo1
```

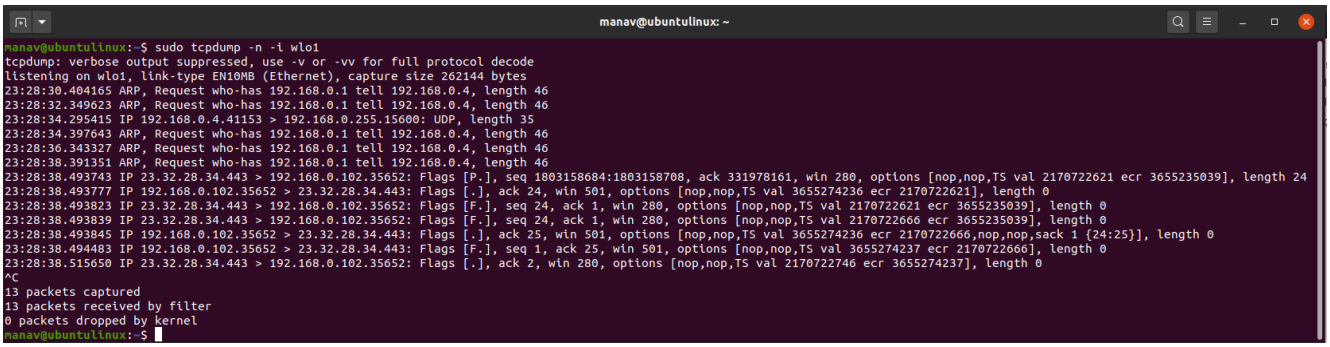


This command will now output all the captures packets in a file named as captured_packets.pcap. **8.** To read captured packets from a file

```
sudo tcpdump -r captured_packets.pcap
```

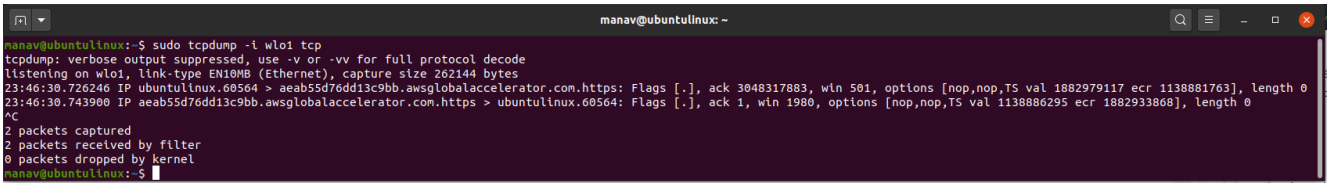
This command will now read the captured packets from the captured_packets.pcap file. **9.** To capture packets with ip address

```
sudo tcpdump -n -i wlo1
```



This command will now capture the packets with IP addresses. **10.** To capture only TCP packets

```
sudo tcpdump -i wlo1 tcp
```



This command will now capture only TCP packets from wlo1.

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manav014
@manav014

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