Networking Training Program 2025

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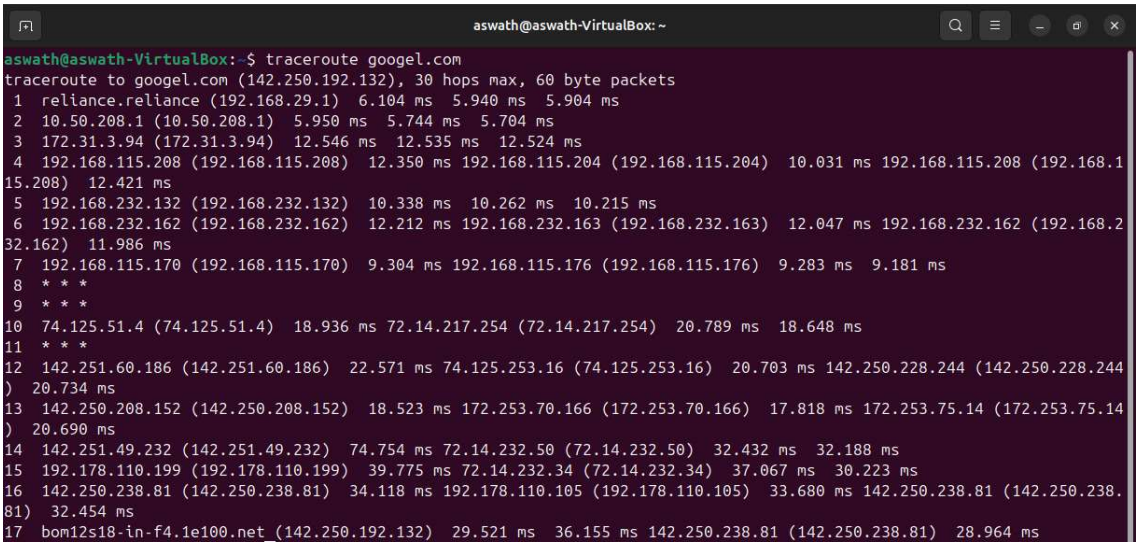
Question-3:

Explore traceroute/tracert for different websites eg:google.com and analyse the parameters in the output and explore different options for traceroute command.

Output:

In Ubuntu,

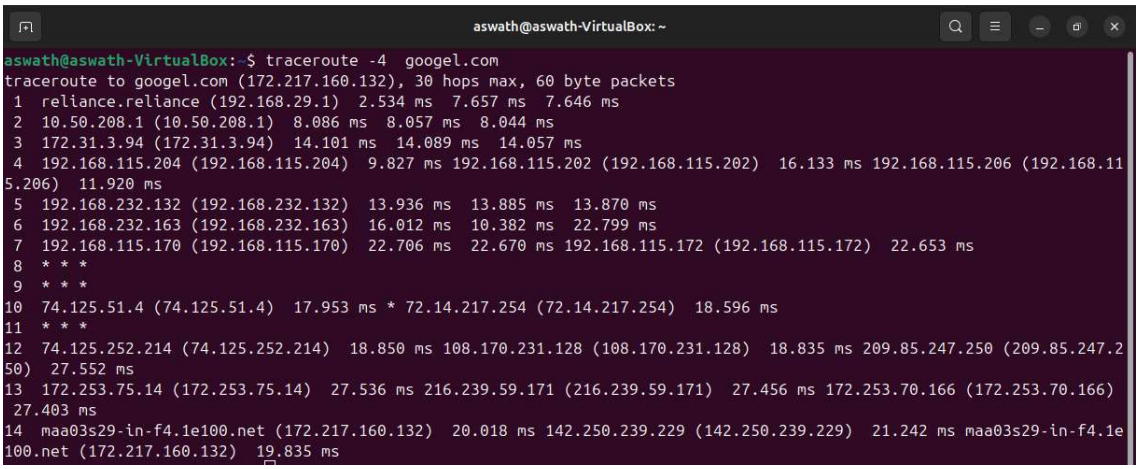


traceroute to google.com (142.250.192.132), 30 hops max, 60 byte packets means the IPv4 address of Google Server and 30 hops till stopping and 60 byte is the packet size for probing.

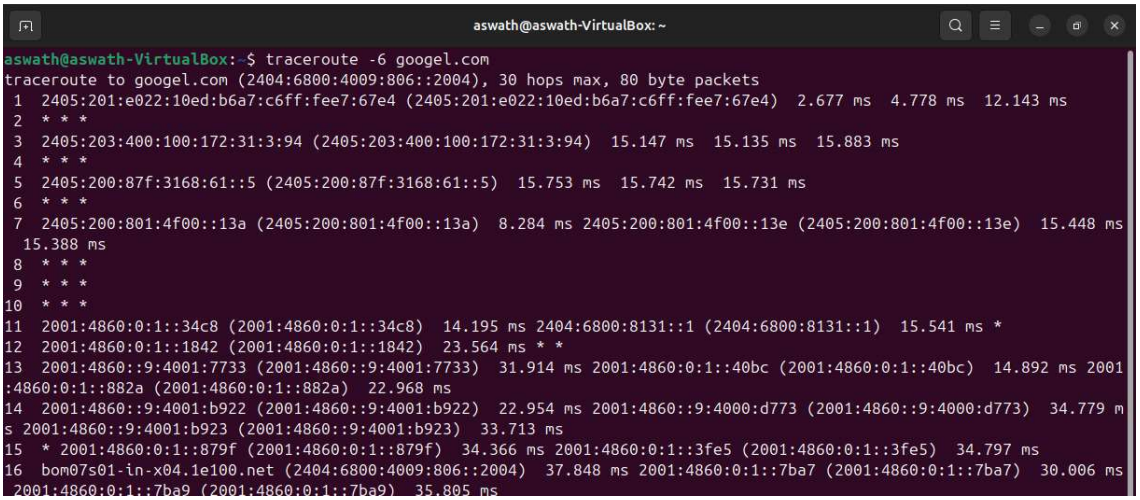
Hop 1: Local Network (ISP Gateway) : reliance 192.168.29.1 the ms is the latency of the response.

Hop 2: ISP Infrastructure: 10.50.208.1 is the A private IP inside the ISP's network.

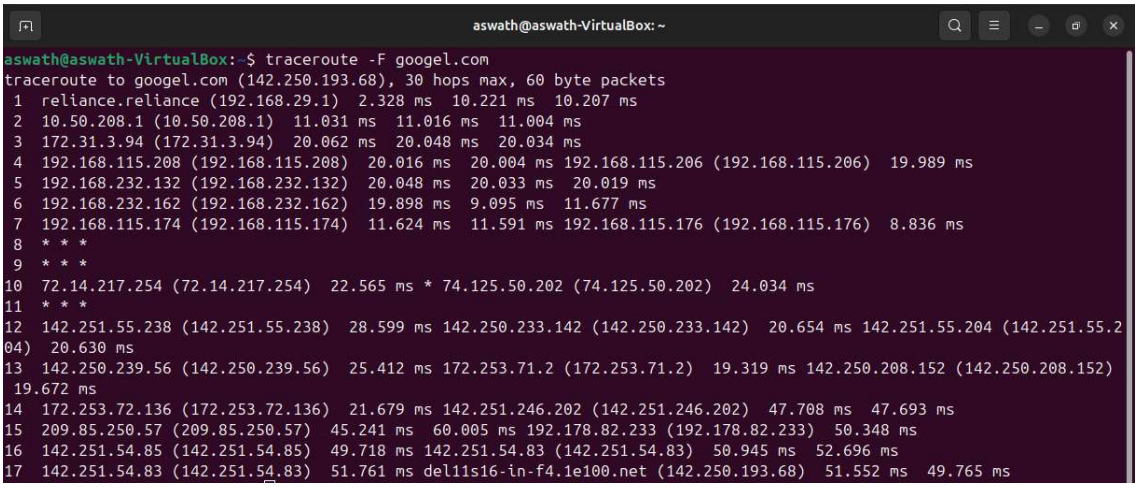
We have different options for traceroute command,



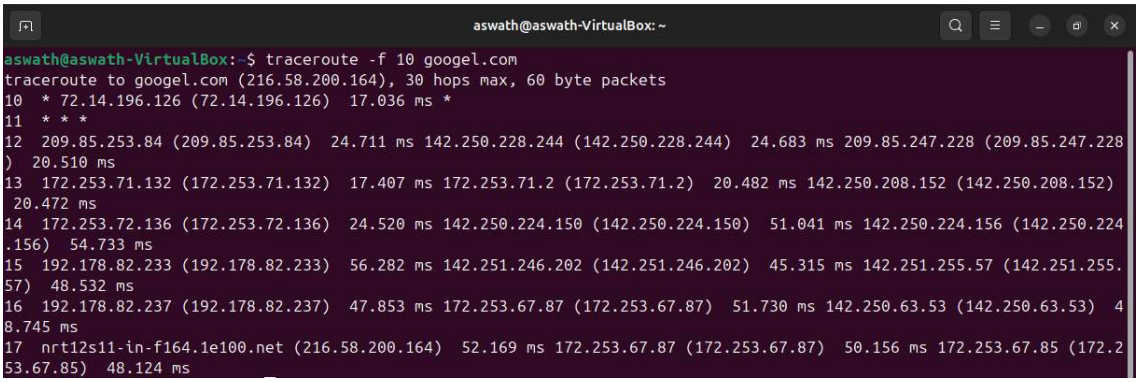
By using the `-4` option, traceroute exclusively employs IPv4 addresses to trace the route to the destination `google.com`



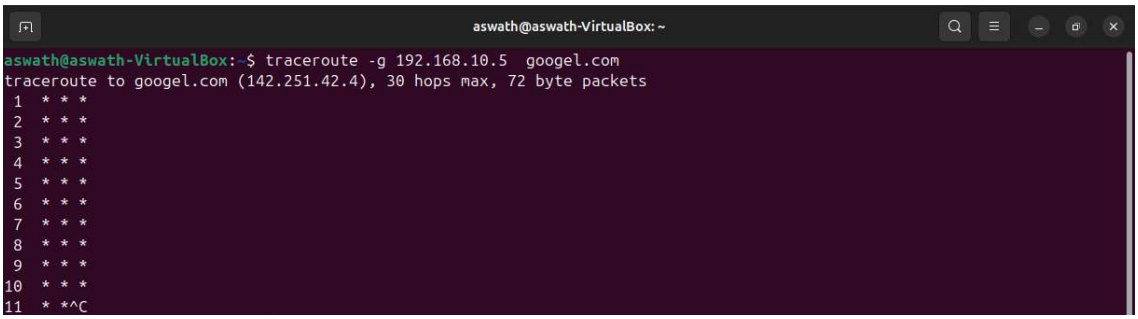
By specifying the `-6` option, traceroute utilizes IPv6 addresses to trace the route to the destination `google.com`.



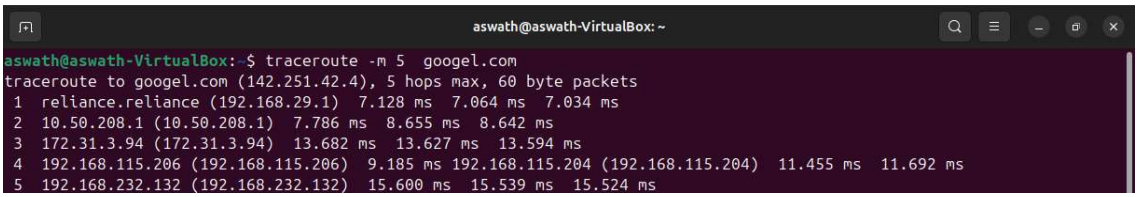
By using the `-F` option, traceroute ensures that packets are not fragmented during the traceroute process to the destination `google.com`.



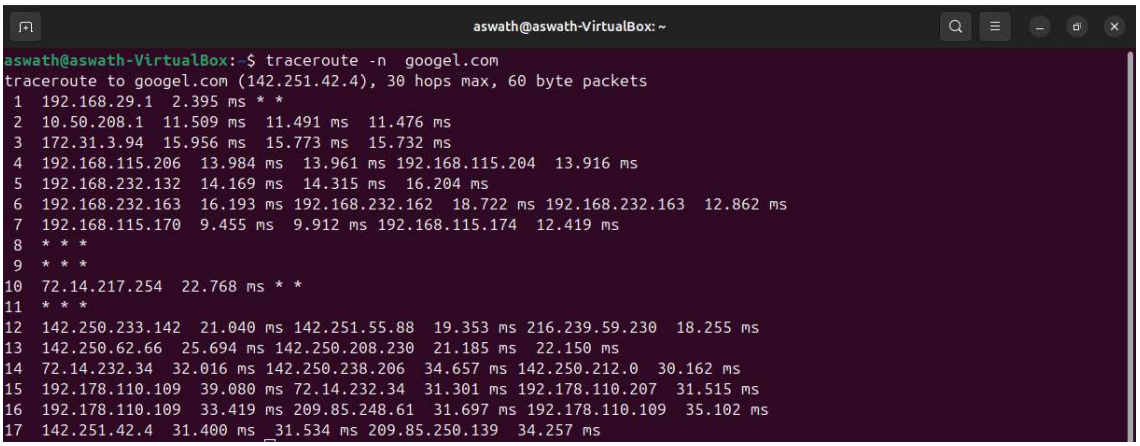
By providing the `-f` option followed by the TTL value (e.g., 10), traceroute initiates the traceroute operation from the specified hop to the destination `google.com`.



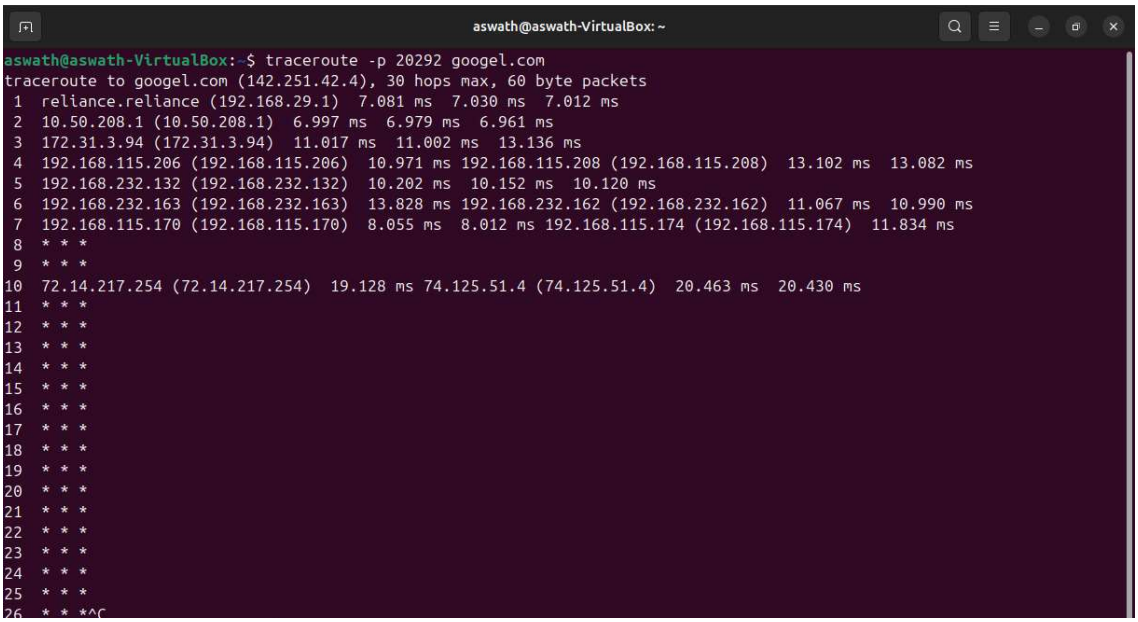
By using the `-g` option followed by the gateway IP address, traceroute routes the packet through the specified gateway to reach the destination `google.com`.



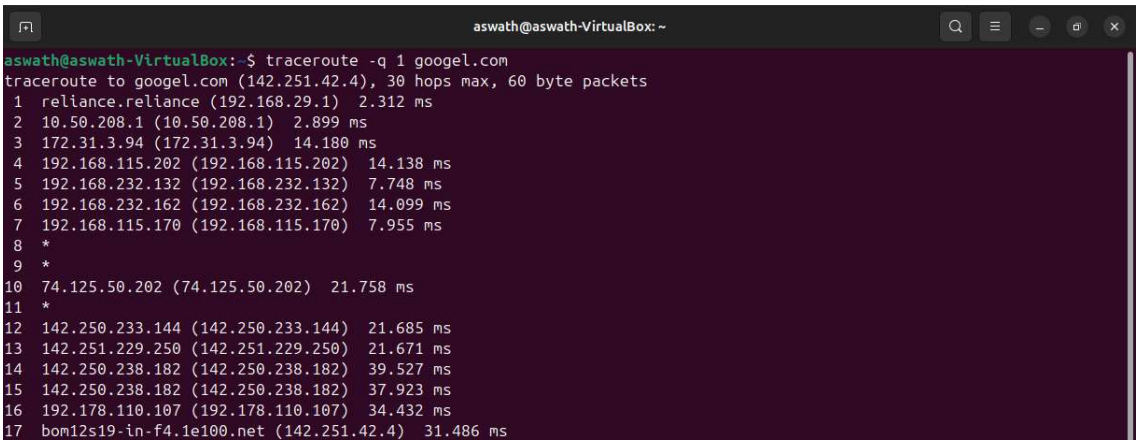
By specifying the `-m` option followed by the desired TTL value (e.g., 5), traceroute limits the traceroute operation to a maximum of 5 hops to the destination `google.com`.



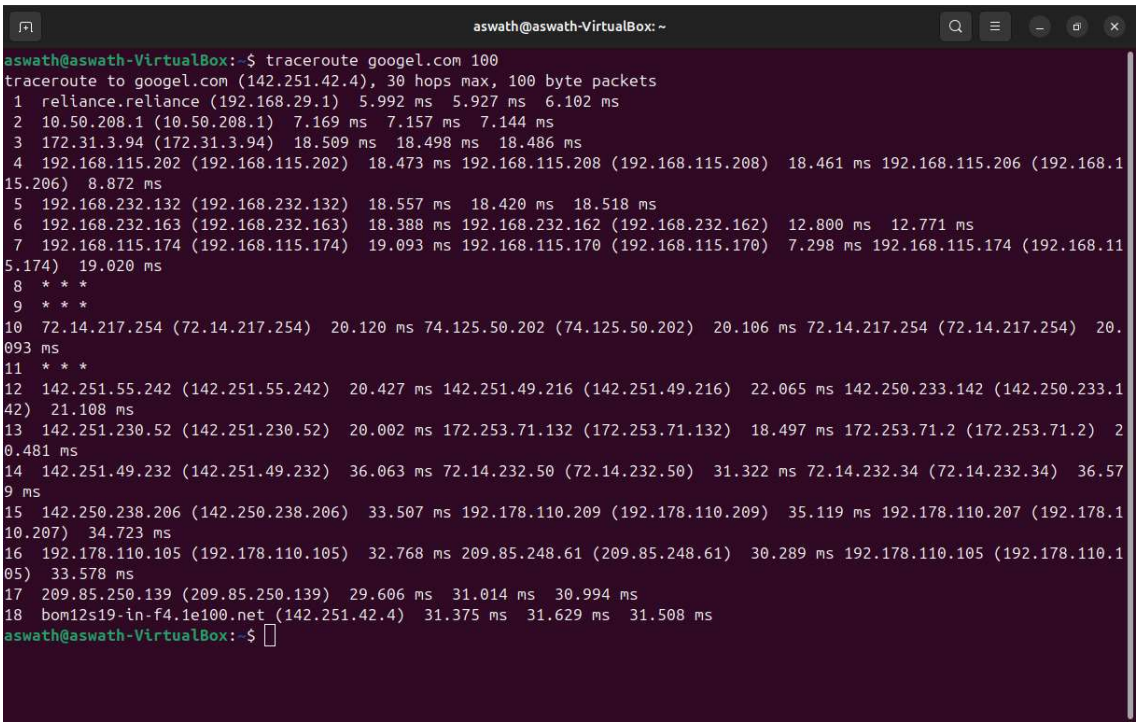
By using the `-n` option, traceroute displays IP addresses instead of resolving them to domain names during the traceroute operation to the destination `google.com`.



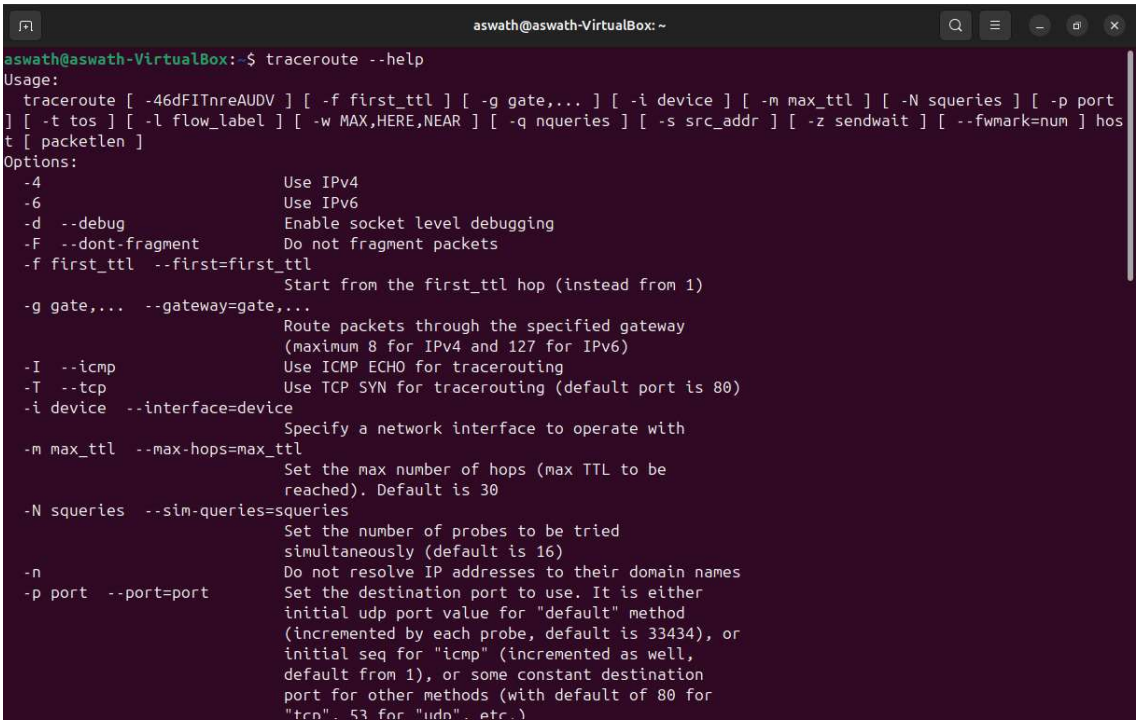
By providing the `-p` option followed by the desired port number (e.g., 20292), traceroute uses the specified port for the traceroute operation to the destination `google.com`.



By using the `-q` option followed by the desired number of probes (e.g., 1), traceroute sends the specified number of probes per hop during the traceroute operation to the destination `google.com`.



By providing the packet length value (e.g., 100), traceroute utilizes packets with the specified length during the traceroute operation to the destination `google.com`.



By executing the `traceroute --help` command, traceroute displays help messages that detail the usage and available options of the traceroute command.