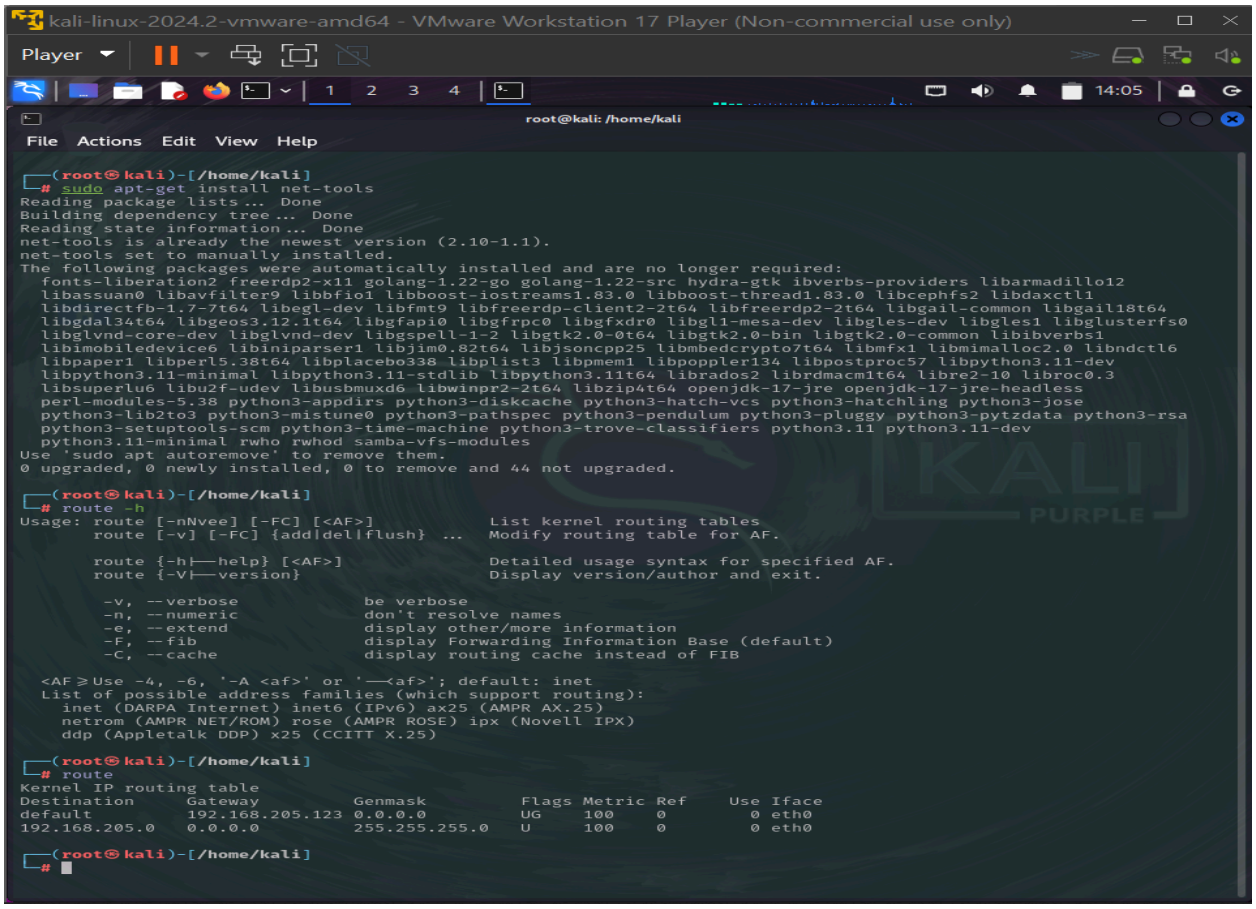
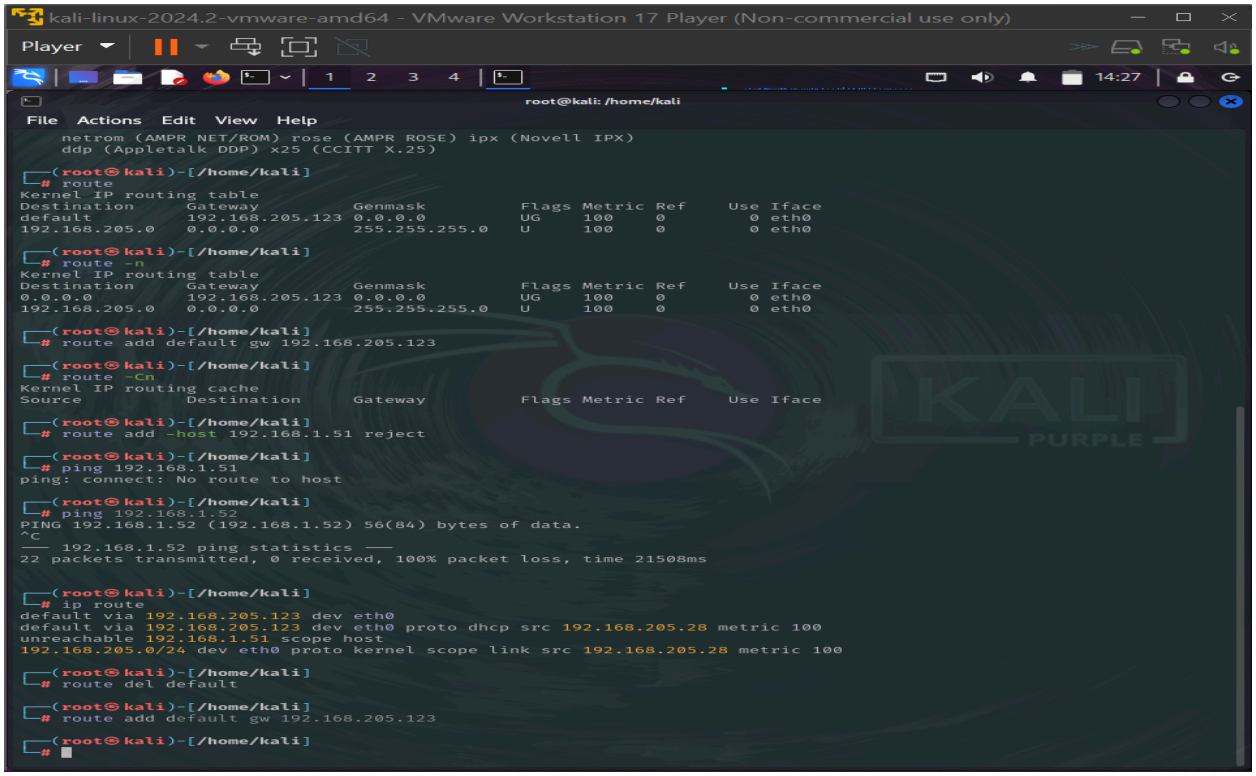
USING ROUTE COMMAND TO DISPLAY NETWORK INFORMATION

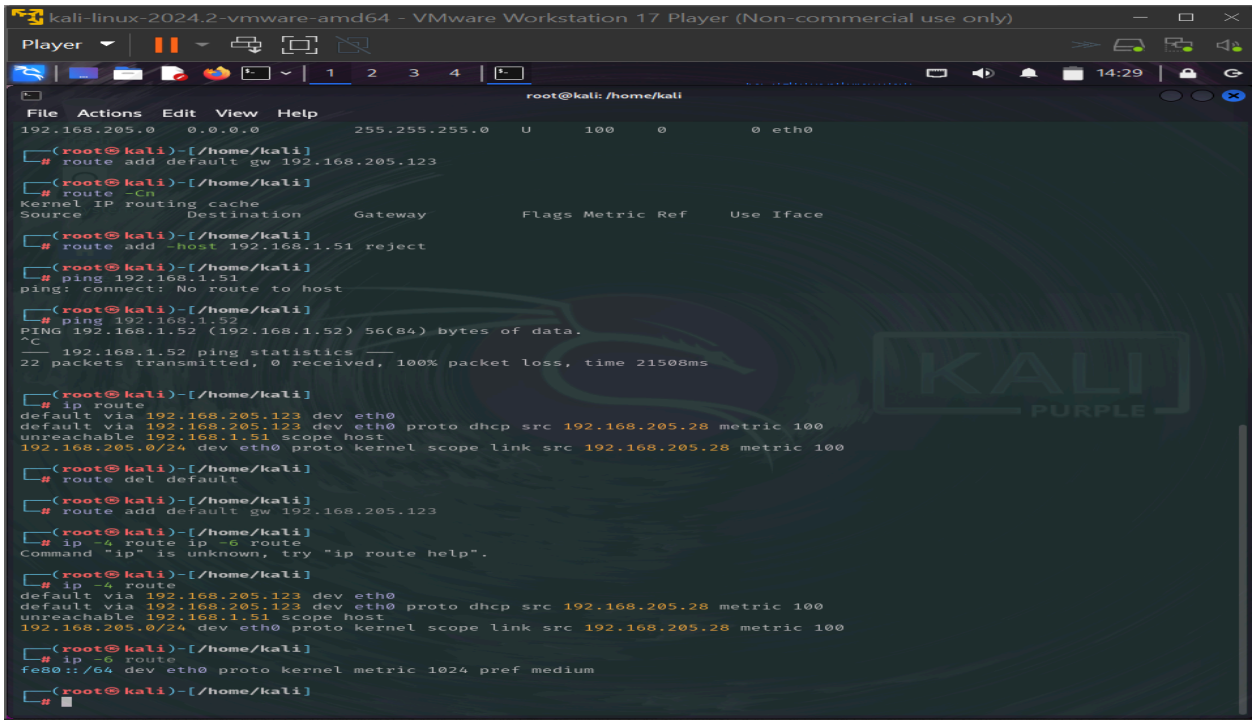
Tools : KALI LINUX

Route is used when you want to work with the IP/kernel routing table. It is typically used to setup static routes to specific networks of hosts via an interface. It is used for updating or showing the IP/kernel routing table. The `route` command is used to view or manipulate the IP routing table.

Input from the task :




kali-linux-2024.2-vmware-amd64 - VMware Workstation 17 Player (Non-commercial use only)
Player
14:27
root@kali: /home/kali
File Actions Edit View Help
netrom (AMPR NET/ROM) rose (AMPR ROSE) ipx (Novell IPX)
ddp (Appletalk DDP) x25 (CCITT X.25)
(root㉿kali)-[/home/kali]
route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 192.168.205.123 0.0.0.0 UG 100 0 0 eth0
192.168.205.0 0.0.0.0 255.255.255.0 U 100 0 0 eth0
(root㉿kali)-[/home/kali]
route -n
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
0.0.0.0 192.168.205.123 0.0.0.0 UG 100 0 0 eth0
192.168.205.0 0.0.0.0 255.255.255.0 U 100 0 0 eth0
(root㉿kali)-[/home/kali]
route add default gw 192.168.205.123
(root㉿kali)-[/home/kali]
route -Cn
Kernel IP routing cache
Source Destination Gateway Flags Metric Ref Use Iface
(root㉿kali)-[/home/kali]
route add -host 192.168.1.51 reject
(root㉿kali)-[/home/kali]
ping 192.168.1.51
ping: connect: No route to host
(root㉿kali)-[/home/kali]
ping 192.168.1.52
PING 192.168.1.52 (192.168.1.52) 56(84) bytes of data.
^C
— 192.168.1.52 ping statistics —
22 packets transmitted, 0 received, 100% packet loss, time 21508ms
(root㉿kali)-[/home/kali]
ip route
default via 192.168.205.123 dev eth0
default via 192.168.205.123 dev eth0 proto dhcp src 192.168.205.28 metric 100
unreachable 192.168.1.51 scope host
192.168.205.0/24 dev eth0 proto kernel scope link src 192.168.205.28 metric 100
(root㉿kali)-[/home/kali]
route del default
(root㉿kali)-[/home/kali]
route add default gw 192.168.205.123
(root㉿kali)-[/home/kali]
#


kali-linux-2024.2-vmware-amd64 - VMware Workstation 17 Player (Non-commercial use only)
Player
14:29
root@kali: /home/kali
File Actions Edit View Help
192.168.205.0 0.0.0.0 255.255.255.0 U 100 0 0 eth0
(root㉿kali)-[/home/kali]
route add default gw 192.168.205.123
(root㉿kali)-[/home/kali]
route -Cn
Kernel IP routing cache
Source Destination Gateway Flags Metric Ref Use Iface
(root㉿kali)-[/home/kali]
route add -host 192.168.1.51 reject
(root㉿kali)-[/home/kali]
ping 192.168.1.51
ping: connect: No route to host
(root㉿kali)-[/home/kali]
ping 192.168.1.52
PING 192.168.1.52 (192.168.1.52) 56(84) bytes of data.
^C
— 192.168.1.52 ping statistics —
22 packets transmitted, 0 received, 100% packet loss, time 21508ms
(root㉿kali)-[/home/kali]
ip route
default via 192.168.205.123 dev eth0
default via 192.168.205.123 dev eth0 proto dhcp src 192.168.205.28 metric 100
unreachable 192.168.1.51 scope host
192.168.205.0/24 dev eth0 proto kernel scope link src 192.168.205.28 metric 100
(root㉿kali)-[/home/kali]
route del default
(root㉿kali)-[/home/kali]
route add default gw 192.168.205.123
(root㉿kali)-[/home/kali]
ip -4 route ip -6 route
Command "ip" is unknown, try "ip route help".
(root㉿kali)-[/home/kali]
ip -4 route
default via 192.168.205.123 dev eth0
default via 192.168.205.123 dev eth0 proto dhcp src 192.168.205.28 metric 100
unreachable 192.168.1.51 scope host
192.168.205.0/24 dev eth0 proto kernel scope link src 192.168.205.28 metric 100
(root㉿kali)-[/home/kali]
ip -6 route
fe80::/64 dev eth0 proto kernel metric 1024 pref medium
(root㉿kali)-[/home/kali]
#

Here we would be using the route command to display network information. We would first have to be a root user to use the command.

The `route` command is a network utility used to view and manipulate the IP routing table on Unix-like and Microsoft Windows operating systems.

It allows administrators to define routes for network traffic, ensuring data packets take the correct path to their destination.

Common Uses of the `route` Command:

1. **Displaying the Routing Table:**

To view the current routing table, use:
```
route -n
```

   - The `-n` flag displays addresses numerically, avoiding the need for name resolution.

2. **Adding a Route:**

To add a new route, the syntax is:
```
route add -net [destination_network] netmask [subnet_mask] gw [gateway]
```
For example, to route traffic destined for the 192.168.1.0/24 network through the gateway 192.168.0.1:
```
route add -net 192.168.1.0 netmask 255.255.255.0 gw 192.168.0.1
```

   -

3. **Deleting a Route:**

To remove an existing route:
```
route del -net [destination_network] netmask [subnet_mask]
```
For instance, to delete the route to 192.168.1.0/24:
```
route del -net 192.168.1.0 netmask 255.255.255.0
```

Note: On modern Linux distributions, the `route` command has been deprecated in favor of the `ip` command from the `iproute2` package. The equivalent commands using `ip` are:

Displaying the Routing Table:
`ip route show`

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Adding a Route:
`ip route add [destination_network]/[prefix_length] via [gateway]`
For example:
`ip route add 192.168.1.0/24 via 192.168.0.1`

-

Deleting a Route:
`ip route del [destination_network]/[prefix_length]`
For example:
`ip route del 192.168.1.0/24`

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It's advisable to use the `ip` command for managing routes on systems where it's available, as it offers more features and is actively maintained.

For comprehensive details on the `route` command and its options, you can refer to its manual page by executing `man route` in the terminal.