

## LINUX NETWORKING MODULE 1 AND 2 ASSESSMENT SOLUTIONS

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### 7. How to check your default gateway is reachable or not and understand about default gateway

```
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ip route
default via 10.0.2.2 dev enp0s3 proto dhcp src 10.0.2.15 metric 100
10.0.2.0/24 dev enp0s3 proto kernel scope link src 10.0.2.15 metric 100
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ping 10.0.2.2
PING 10.0.2.2 (10.0.2.2) 56(84) bytes of data.
64 bytes from 10.0.2.2: icmp_seq=1 ttl=255 time=1.78 ms
64 bytes from 10.0.2.2: icmp_seq=2 ttl=255 time=2.08 ms
64 bytes from 10.0.2.2: icmp_seq=3 ttl=255 time=1.85 ms
64 bytes from 10.0.2.2: icmp_seq=4 ttl=255 time=2.92 ms
64 bytes from 10.0.2.2: icmp_seq=5 ttl=255 time=2.22 ms
64 bytes from 10.0.2.2: icmp_seq=6 ttl=255 time=2.24 ms
64 bytes from 10.0.2.2: icmp_seq=7 ttl=255 time=2.55 ms
64 bytes from 10.0.2.2: icmp_seq=8 ttl=255 time=2.16 ms
64 bytes from 10.0.2.2: icmp_seq=9 ttl=255 time=2.19 ms
64 bytes from 10.0.2.2: icmp_seq=10 ttl=255 time=2.37 ms
64 bytes from 10.0.2.2: icmp_seq=11 ttl=255 time=3.63 ms
64 bytes from 10.0.2.2: icmp_seq=12 ttl=255 time=1.88 ms
```

```
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ip route | grep default
default via 10.0.2.2 dev enp0s3 proto dhcp src 10.0.2.15 metric 100
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ping c -4 10.0.2.2
ping: c: Temporary failure in name resolution
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ping -c 4 10.0.2.2
PING 10.0.2.2 (10.0.2.2) 56(84) bytes of data.
64 bytes from 10.0.2.2: icmp_seq=1 ttl=255 time=1.41 ms
64 bytes from 10.0.2.2: icmp_seq=2 ttl=255 time=1.70 ms
64 bytes from 10.0.2.2: icmp_seq=3 ttl=255 time=1.46 ms
64 bytes from 10.0.2.2: icmp_seq=4 ttl=255 time=0.945 ms

--- 10.0.2.2 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3033ms
rtt min/avg/max/mdev = 0.945/1.377/1.699/0.272 ms
```

```
sakthi-kumar-s@sakthi-kumar-s-VirtualBox: ~
[+] Stopped ping 10.0.2.2
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ route -n
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
0.0.0.0 10.0.2.2 0.0.0.0 UG 100 0 0 enp0s3
10.0.2.0 0.0.0.0 255.255.255.0 U 100 0 0 enp0s3
```

```
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:ab:97:bd brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 74515sec preferred_lft 74515sec
    inet6 fd00::c51c:14e2:501d:c3d2/64 scope global temporary dynamic
        valid_lft 86193sec preferred_lft 14193sec
    inet6 fd00::a00:27ff:feab:97bd/64 scope global dynamic mngtmpaddr
        valid_lft 86193sec preferred_lft 14193sec
    inet6 fe80::a00:27ff:feab:97bd/64 scope link
        valid_lft forever preferred_lft forever
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$
```

```
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ arp -i enp0s3
Address HWtype HWaddress Flags Mask Iface
_gateway ether 52:55:0a:00:02:02 C enp0s3
10.0.2.3 ether 52:55:0a:00:02:03 C enp0s3
```

```
(base) sakthi-kumar-s@sakthi-kumar-s-VirtualBox:~$ arp -a
_gateway (10.0.2.2) at 52:55:0a:00:02:02 [ether] on enp0s3
? (10.0.2.3) at 52:55:0a:00:02:03 [ether] on enp0s3
```