

(Note:-

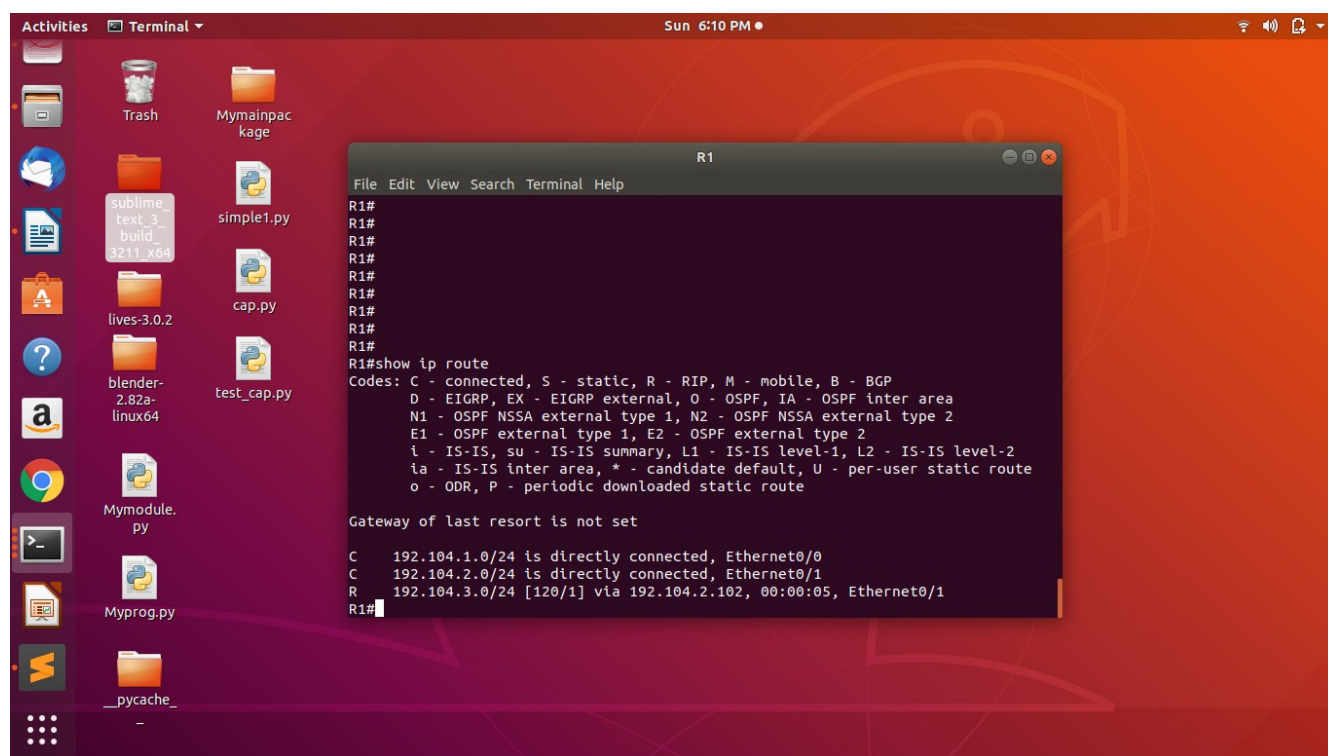
1. In Wireshark, the capture is of the RIP packets from R1 to R2, due to the ping from PC1 to PC2.

2. Even though the routers configuration is saved, configuration of PC1 and PC2 is saved in corresponding 'vpc' files in 'vpcs' folder in 'project-files' folder.

)

1) 'show ip route' screenshots for R1 and R2 :-

R1:



```
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

C    192.104.1.0/24 is directly connected, Ethernet0/0
C    192.104.2.0/24 is directly connected, Ethernet0/1
R    192.104.3.0/24 [120/1] via 192.104.2.102, 00:00:05, Ethernet0/1
R1#
```

'C' in Cisco gns3 topology means 'connected', and 'R' means 'rip'.

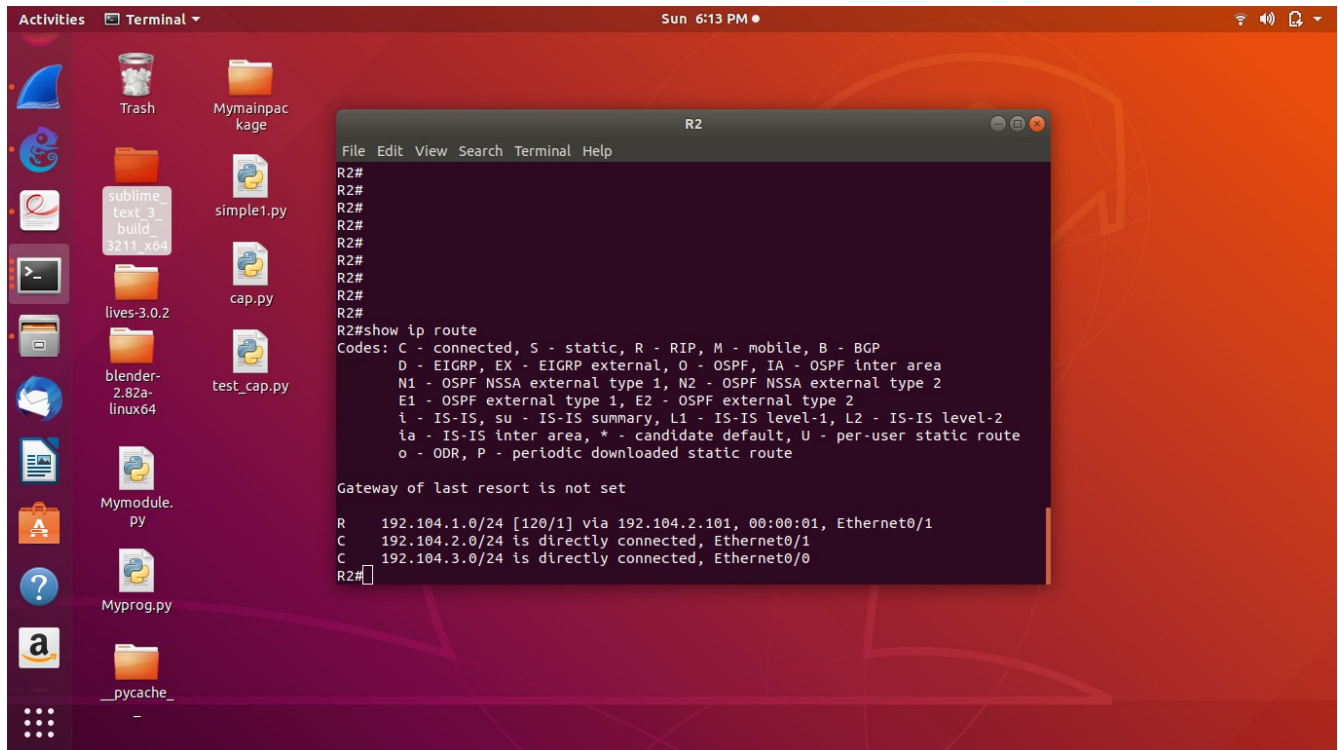
So, R1 has gateway as 192.104.1.101 for PC1, whose IP address is 192.104.1.1/24. Interface used is Ethernet0/0.

24 bit mask can also be seen, as all the 4th bytes of IP addresses is 0.

192.104.2.101 is the IP address at which R1 is connected to R2, which itself is at 192.104.2.102. Interface used is Ethernet0/1.

192.104.3.0 is the network to which R2 is directly connected, and R1 gets this info via the routing table of R2, which is transmitted during RIP message transfer.

R2:



```
File Edit View Search Terminal Help
R2#
R2#
R2#
R2#
R2#
R2#
R2#
R2#
R2#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        ia - IS-IS inter area, * - candidate default, U - per-user static route
        o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

R    192.104.1.0/24 [120/1] via 192.104.2.101, 00:00:01, Ethernet0/1
C    192.104.2.0/24 is directly connected, Ethernet0/1
C    192.104.3.0/24 is directly connected, Ethernet0/0
R2#
```

192.104.2.102 is the IP at which R1 connects R2.

Interface used is Ethernet0/1.

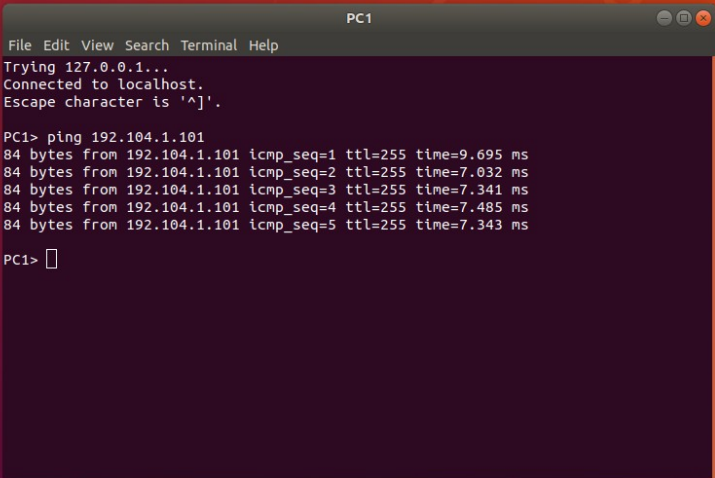
192.104.3.102 is the gateway of R2 which connects PC2 at its IP of 192.104.3.2/24.

Interface used is Ethernet0/0.

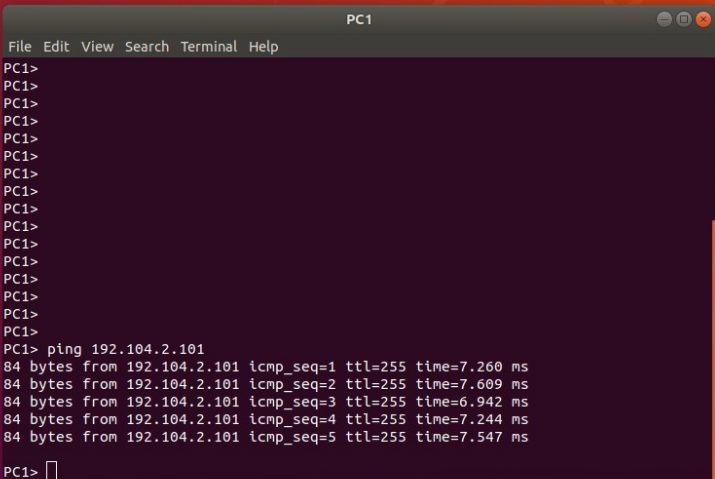
Thus, R2 is connected to these 2 networks, as can be seen in screenshot. The other network of 192.104.1.0 is seen by it due to RIP table transfer from R1.

2) Pings from PC1:

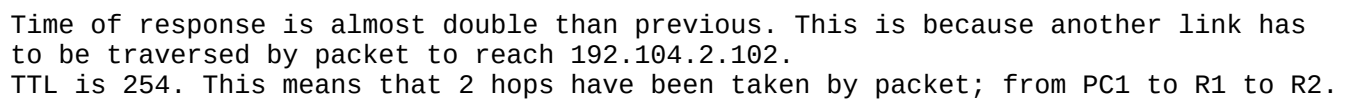
To R1's gateway 192.104.1.101-



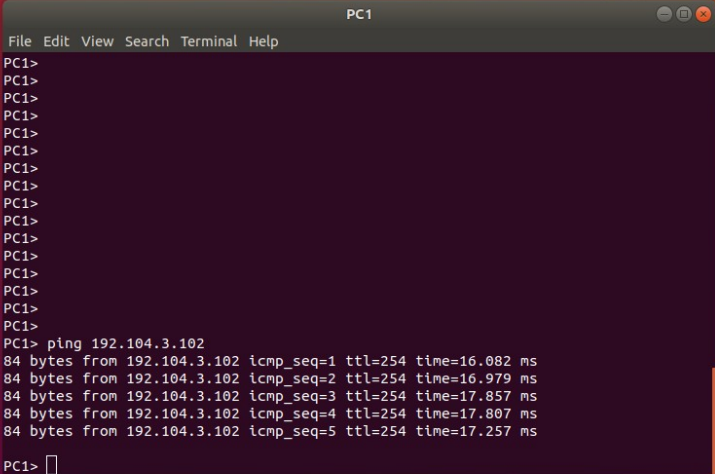
To R1's 192.104.2.101:



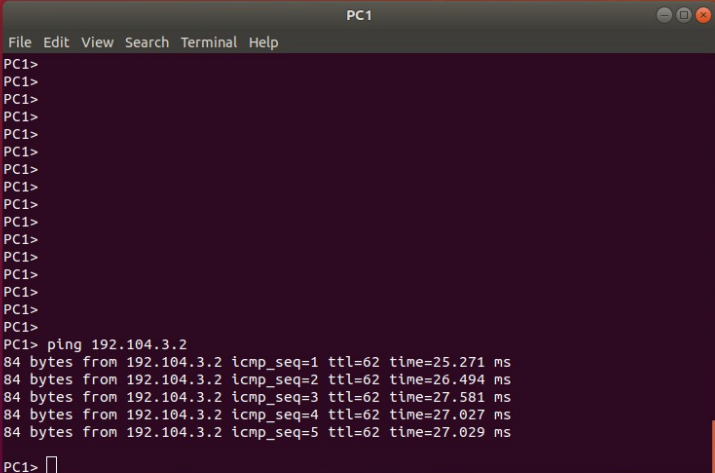
To R2's 192.104.2.102:



To R2's 192.104.3.102:



To PC2's 192.104.3.2:



Here, we reach last PC2. Time of response is almost 3 times due to 3 links traversal of packet.
But TTL is 62, showing that to reach PC2, several hops were required.