

UCCN2243

Internetworking Principles and Practices

Assignment

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Question 1 (a)

We propose adding a Router and using ACL. In the proposed router, we implement trunking and Access List to control the flow of the network. The new router is shown as below in figure 1 and the network are configured accordingly.

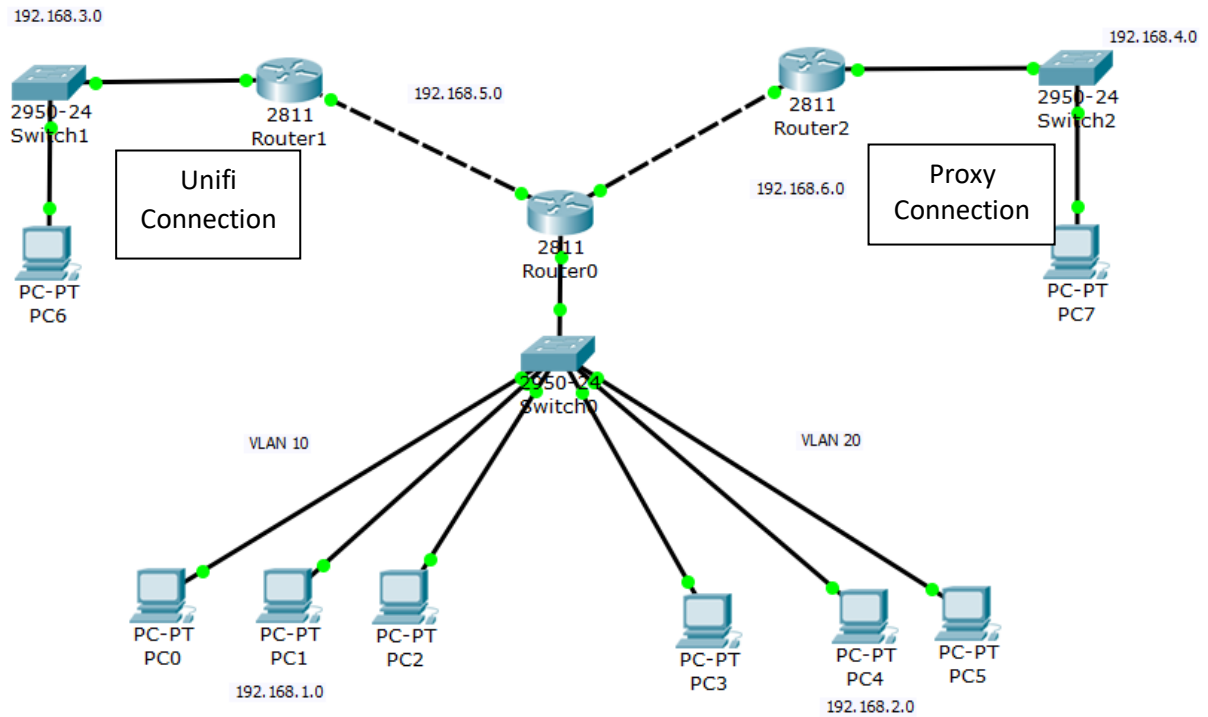


Figure 1

Question 1 (b)

Requirements 1: Section A PCs need a Unifi Connection while Section B PCs require a Proxy Connection

For the first requirement, we use the following command to set ACL as shown in Figure 2

Network A to UNIFI Network, but not Proxy Network

```
Router0(config)#access-list 100 permit icmp 192.168.1.0 0.0.0.255 192.168.3.0 0.0.0.255
```

```
Router0(config)#int fa0/0.1
```

```
Router0(config)#ip access-group 100 in
```

Network B to Proxy Network, but not UNIFI Network

```
Router0(config)#access-list 101 permit icmp 192.168.2.0 0.0.0.255 192.168.4.0 0.0.0.255
```

```
Router0(config)#int fa0/0.2
```

```
Router0(config)#ip access-group 101 in
```

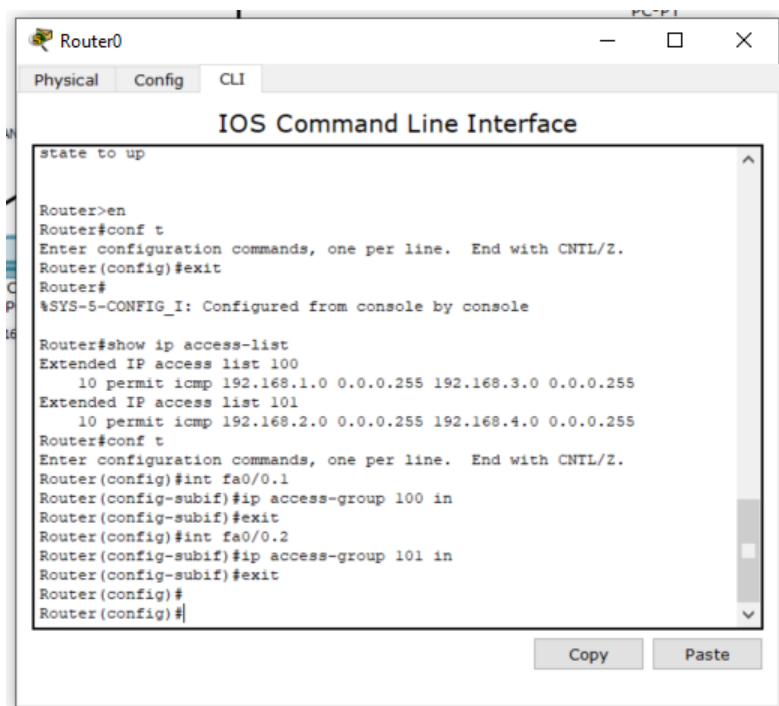


Figure 2

And as you can see in Figure 3, PC 3 is able to ping the Proxy Network, but cannot ping UNIFI Network.

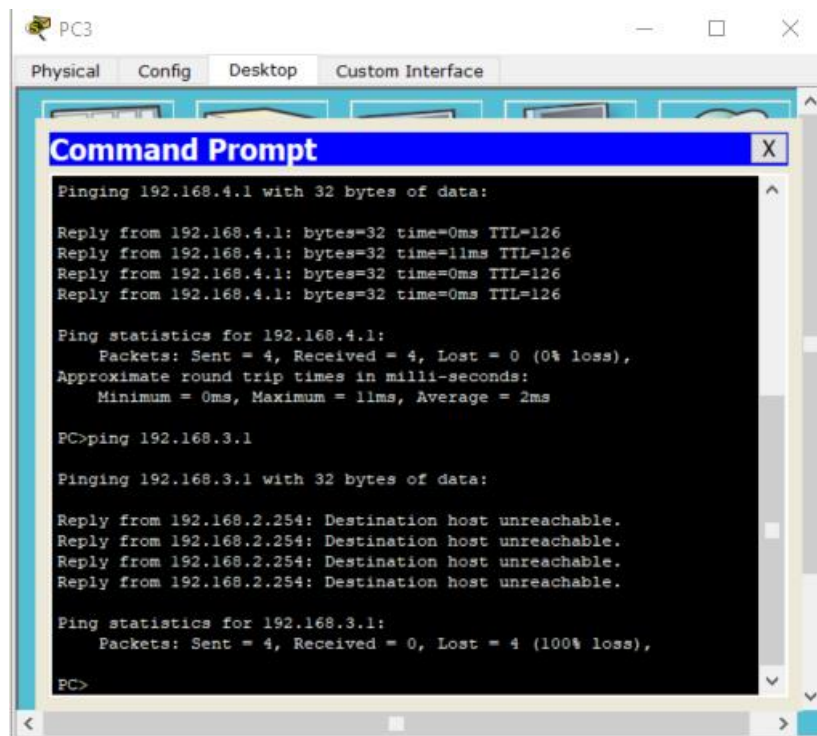


Figure 3

And in Figure 4, PC 0 is able to ping the UNIFI Network, but cannot ping Proxy Network.

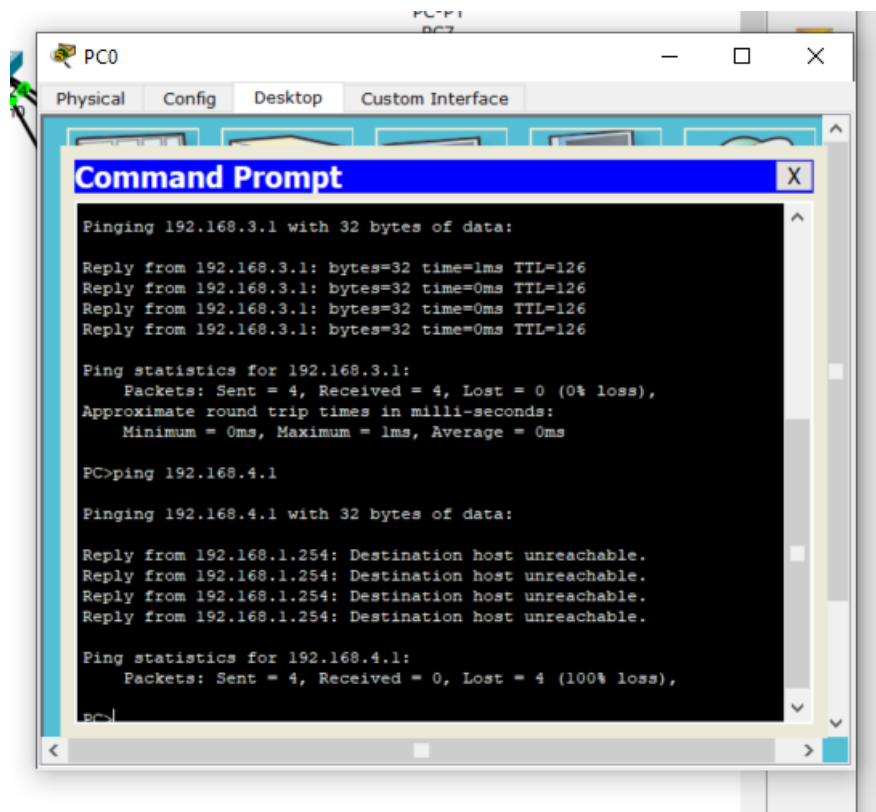


Figure 4

Requirements 2: Section A PCs need a Proxy Connection while Section B PCs require a Unifi Connection

To configure the second requirements, go to Router 1 and type the following commands, as shown in Figure 5:

Network A to Proxy Network, but not UNIFI Network

```
Router0(config)#access-list 102 permit icmp 192.168.1.0 0.0.0.255 192.168.4.0 0.0.0.255
```

```
Router0(config)#int fa0/0.1
```

```
Router0(config)#ip access-group 102 in
```

Network B to UNIFI Network, but not Proxy Network

```
Router0(config)#access-list 103 permit icmp 192.168.2.0 0.0.0.255 192.168.3.0 0.0.0.255
```

```
Router0(config)#int fa0/0.2
```

```
Router0(config)#ip access-group 103 in
```

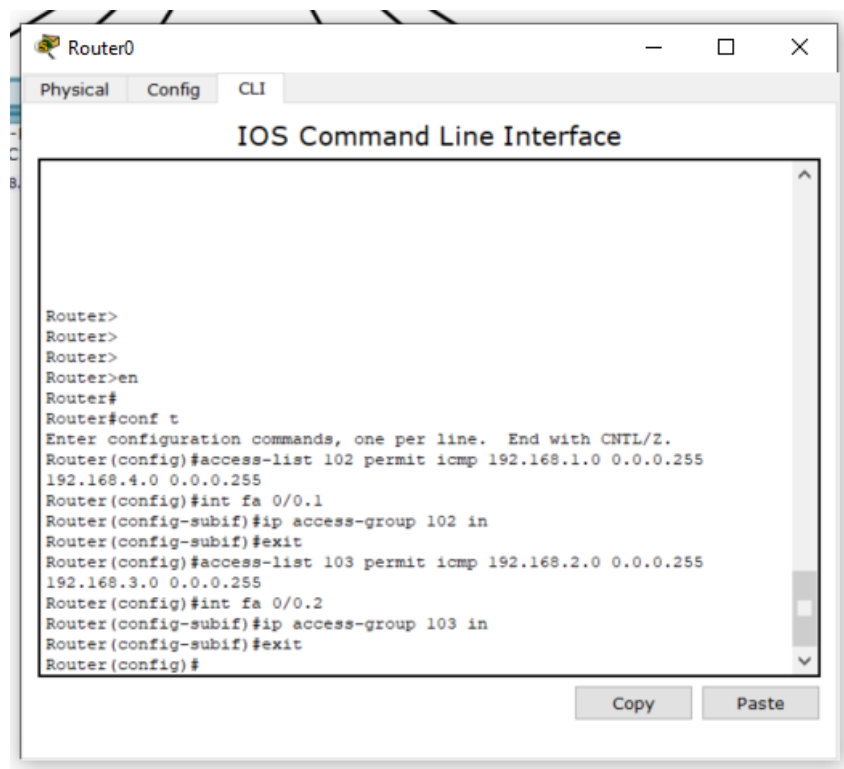
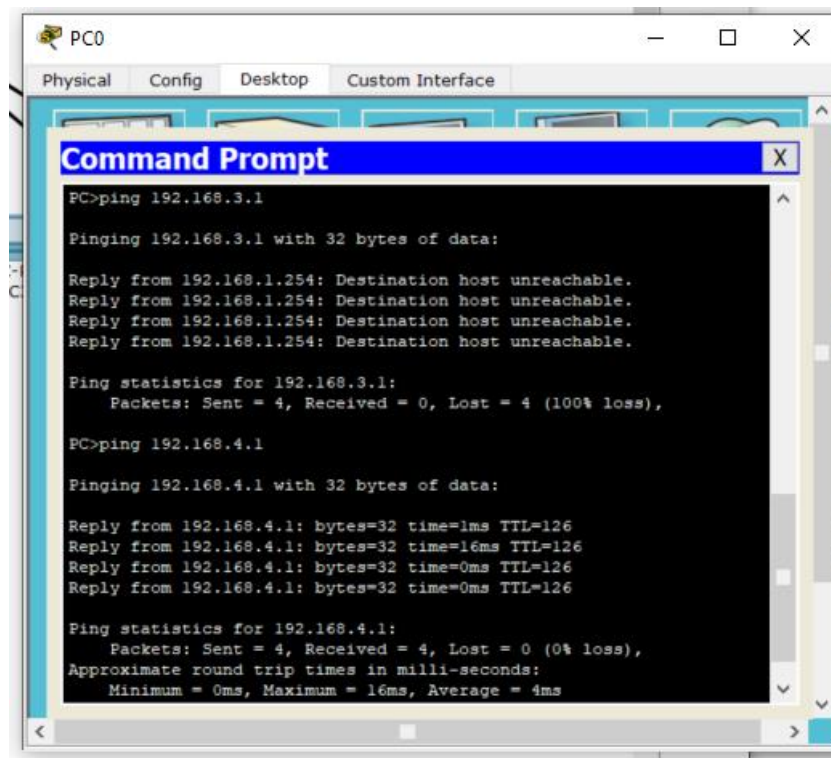


Figure 5

After configuring the router, we can see that PC 0 from Section A can ping the Proxy Network, but not the UNIFI Network (Figure 6). And PC 3 from Section B can ping the UNIFI Network but not the Proxy Network (Figure 7).



The screenshot shows a Windows-style window titled 'PC0' with tabs for 'Physical', 'Config', 'Desktop', and 'Custom Interface'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the following text:

```
PC>ping 192.168.3.1

Pinging 192.168.3.1 with 32 bytes of data:

Reply from 192.168.1.254: Destination host unreachable.
Reply from 192.168.1.254: Destination host unreachable.
Reply from 192.168.1.254: Destination host unreachable.
Reply from 192.168.1.254: Destination host unreachable.

Ping statistics for 192.168.3.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

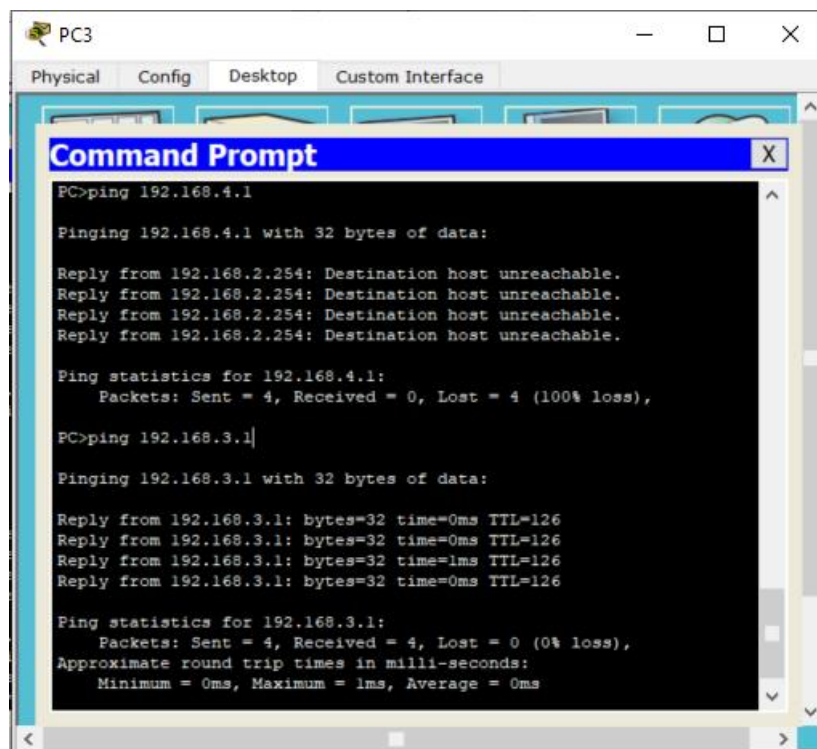
PC>ping 192.168.4.1

Pinging 192.168.4.1 with 32 bytes of data:

Reply from 192.168.4.1: bytes=32 time=1ms TTL=126
Reply from 192.168.4.1: bytes=32 time=16ms TTL=126
Reply from 192.168.4.1: bytes=32 time=0ms TTL=126
Reply from 192.168.4.1: bytes=32 time=0ms TTL=126

Ping statistics for 192.168.4.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 16ms, Average = 4ms
```

Figure 6



The screenshot shows a Windows-style window titled 'PC3' with tabs for 'Physical', 'Config', 'Desktop', and 'Custom Interface'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the following text:

```
PC>ping 192.168.4.1

Pinging 192.168.4.1 with 32 bytes of data:

Reply from 192.168.2.254: Destination host unreachable.
Reply from 192.168.2.254: Destination host unreachable.
Reply from 192.168.2.254: Destination host unreachable.
Reply from 192.168.2.254: Destination host unreachable.

Ping statistics for 192.168.4.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 192.168.3.1

Pinging 192.168.3.1 with 32 bytes of data:

Reply from 192.168.3.1: bytes=32 time=0ms TTL=126
Reply from 192.168.3.1: bytes=32 time=0ms TTL=126
Reply from 192.168.3.1: bytes=32 time=1ms TTL=126
Reply from 192.168.3.1: bytes=32 time=0ms TTL=126

Ping statistics for 192.168.3.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Figure 7

Requirements 3: Both Section A and Section B PCs require the Unifi Connection

To configure the second requirements, go to Router 1 and type the following commands, as shown in Figure 8:

```
Router0(config)#access-list 104 permit icmp 192.168.1.0 0.0.0.255 192.168.3.0 0.0.0.255
```

```
Router0(config)#int fa0/0.1
```

```
Router0(config)#ip access-group 104 in
```

```
Router0(config)#access-list 105 permit icmp 192.168.2.0 0.0.0.255 192.168.3.0 0.0.0.255
```

```
Router0(config)#int fa0/0.2
```

```
Router0(config)#ip access-group 105 in
```

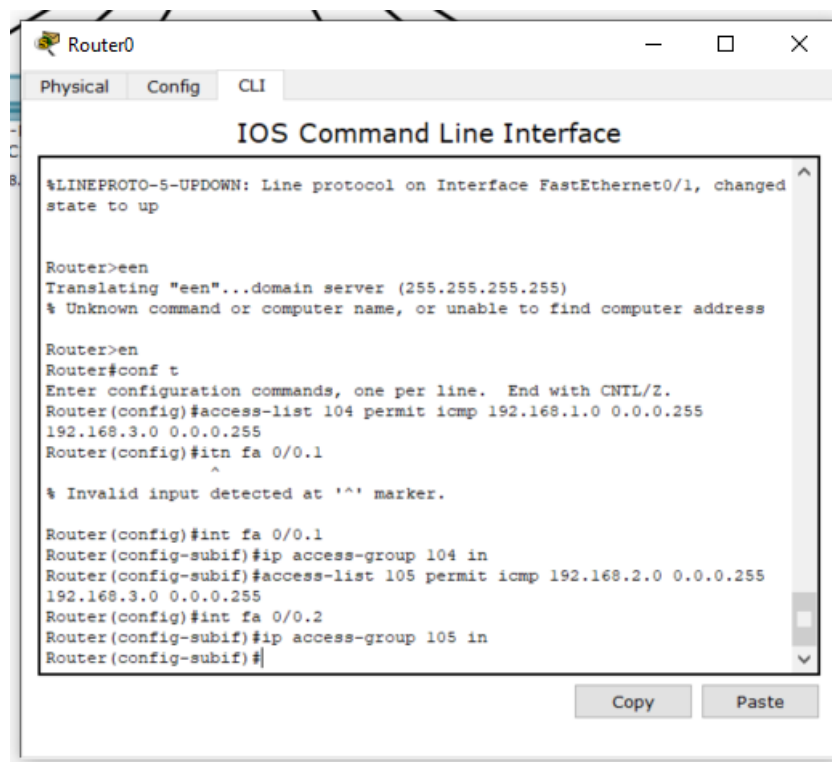


Figure 8

After configuring the router, we can see both PC 0 from Section A and PC 3 from Section B can ping the UNIFI Network but not the Proxy Network (Figure 9, 10).

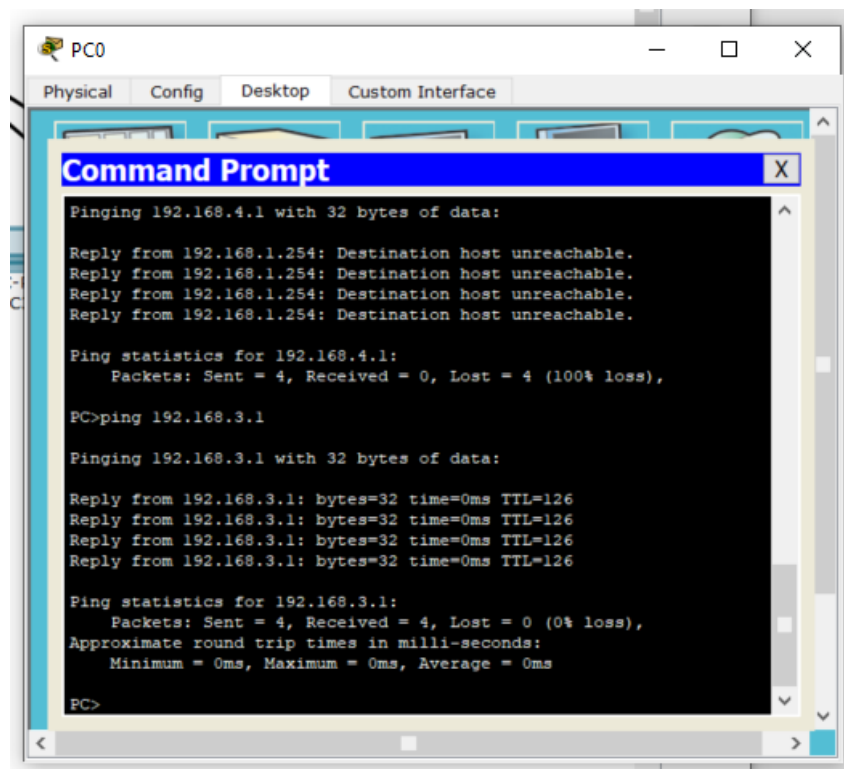


Figure 9

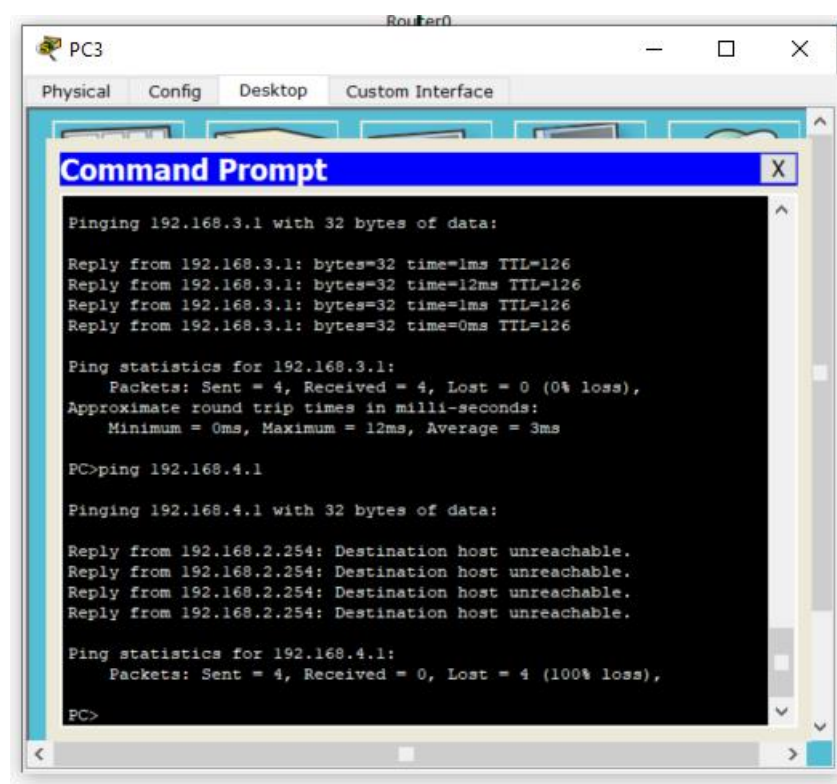


Figure 10

Requirements 4: Both Section A and Section B PCs require the Proxy Connection

To configure the second requirements, go to Router 1 and type the following commands, as shown in Figure 11:

```
Router0(config)#access-list 106 permit icmp 192.168.1.0 0.0.0.255 192.168.4.0 0.0.0.255
```

```
Router0(config)#int fa0/0.1
```

```
Router0(config)#ip access-group 104 in
```

```
Router0(config)#access-list 107 permit icmp 192.168.2.0 0.0.0.255 192.168.4.0 0.0.0.255
```

```
Router0(config)#int fa0/0.2
```

```
Router0(config)#ip access-group 107 in
```

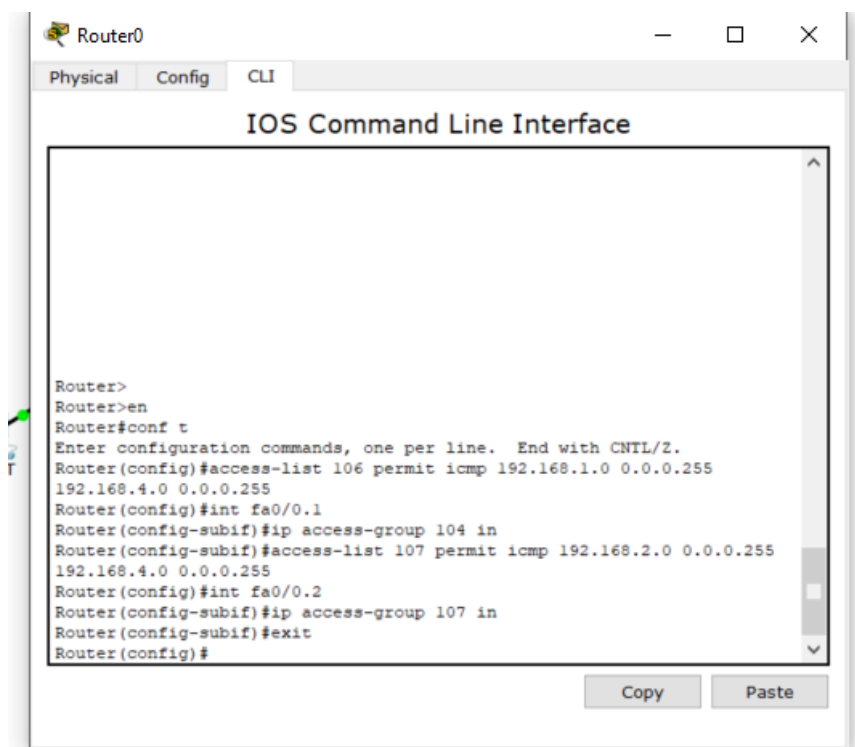


Figure 11

After configuring the router, we can see both PC 0 from Section A and PC 3 from Section B can ping the Proxy Network but not the UNIFI Network (Figure 12, 13).

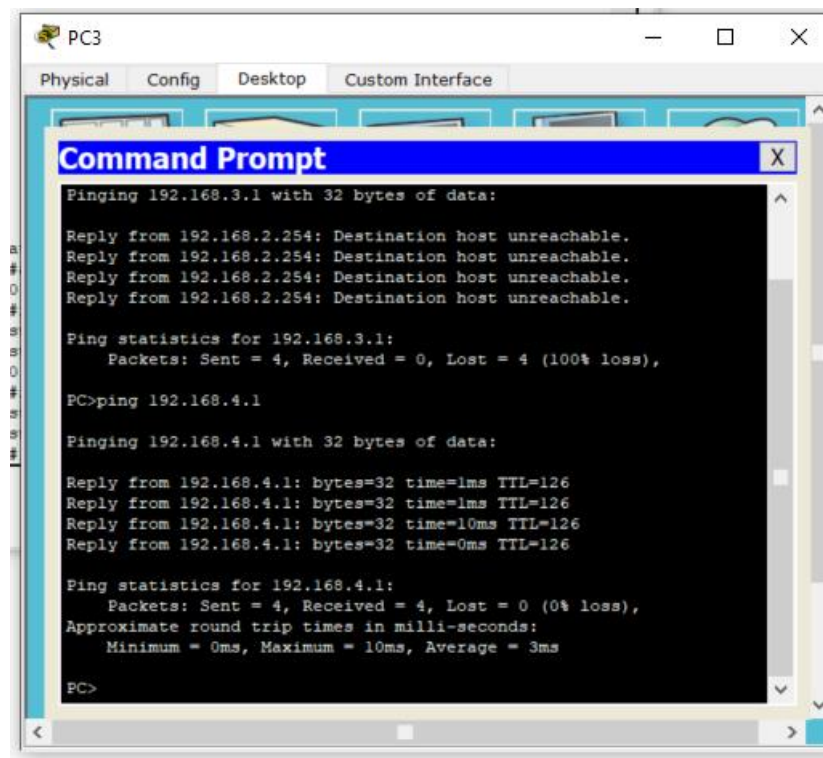


Figure 12

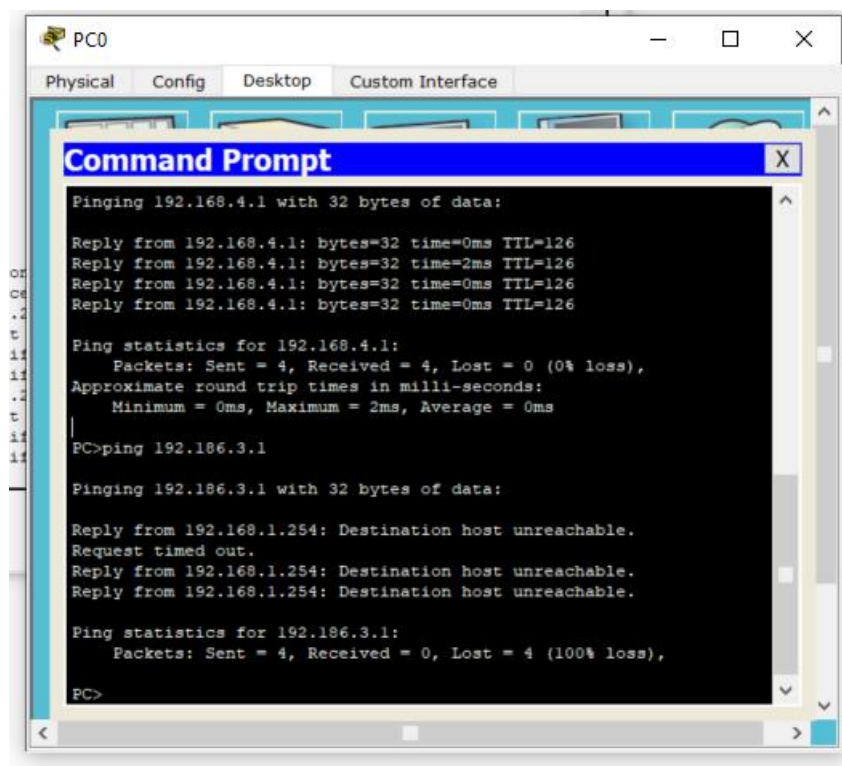


Figure 13

Question 1 (c)

The router that we choose to use in our proposed solution is Cisco Cisco2811vk9 2811 Router Voice Bundle. It is widely used commercially and the price is around RM2945.00. The reason why this router is so costly because it contains a few extra features like an increase in security and voice performance new embedded service options, and dramatically increased slot performance and density while maintaining support for most of the more than 90 existing modules that are available today. It also provides voice-over-IP (VoIP) and voice-over-Frame Relay (VoFR) transport to robust, centralized solutions. Below is a visual of the router:



Question 2 (a)

Topology (Figure 2.1)

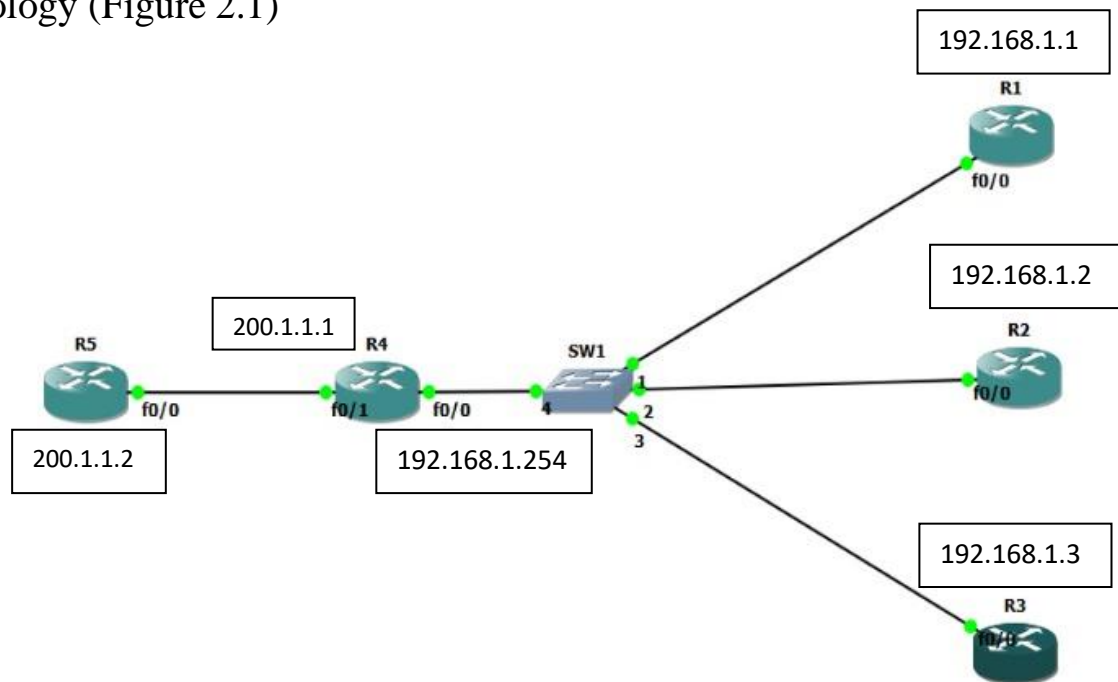


Figure 2.1

Question 2 (b)

Running Configurations of the Router

```
!
interface FastEthernet0/0
ip address 192.168.1.1 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
no ip address
shutdown
duplex auto
speed auto
!
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 192.168.1.254
!
!
ip http server
no ip http secure-server
!
!
!
control-plane
!
!
!
!
!
!
!
!
!
line con 0
exec-timeout 0 0
privilege level 15
logging synchronous
line aux 0
exec-timeout 0 0
privilege level 15
logging synchronous

```

Figure 1: Configuration of Router 1, Router 2, and Router 3

The figure above shows the ip address configuration of the three routers. Static route are also configured after the addresses has been set. Ip address of Router 1 is 192.168.1.1, Router 2 is 192.168.1.2, and Router 3 is 192.168.1.3 with the subnet mask of 255.255.255.0. The reason why default route is used because all the packet from these three Routers has to go through Router 4(192.168.1.254/24) in order to reach the outside network.

```

!
!
interface FastEthernet0/0
 ip address 192.168.1.254 255.255.255.0
 ip nat inside
 ip virtual-reassembly
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 200.1.1.1 255.255.255.0
 ip nat outside
 ip virtual-reassembly
 duplex auto
 speed auto
!
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 200.1.1.2
ip route 192.168.1.0 255.255.255.0 192.168.1.1
ip route 192.168.1.0 255.255.255.0 192.168.1.2
ip route 192.168.1.0 255.255.255.0 192.168.1.3
!
!
ip http server
no ip http secure-server
ip alias 200.1.1.100 80
ip nat pool NAT 192.168.1.1 192.168.1.3 prefix-length 24 type rotary
ip nat inside destination list LOADBALANCE pool NAT
!
ip access-list extended LOADBALANCE
 permit tcp any host 200.1.1.100 eq www
!
access-list 10 permit 200.1.1.100
!
!
!
control-plane
!
!
!
!

```

Figure 2: Router R4 configuration

Figure 2 shows the ip address configuration of Router 4. Static route are also configured after the addresses has been set. Ip address of Router 4 in interface fa0/0 is 192.168.1.254 with subnet mask of 255.255.255.0 and interface fa0/1 is 200.1.1.1 with subnet mask of 255.255.255.0. We configure interface fa0/0 as the inside network with the command “ip nat inside” and interface fa0/1 as the outside network with the command “ip nat outside”. All the traffic that comes from Router 5 has to go through Router 4 in order to reach Router 1, Router 2 or Router 3 with the command “ip route 192.168.1.0 255.255.255.0 192.168.1.1” for Router 1, “ip route 192.168.1.0 255.255.255.0 192.168.1.1” for Router 2, and “ip route 192.168.1.0 255.255.255.0 192.168.1.3” for Router 3. The default route (“ip route 0.0.0.0 0.0.0.0 200.1.1.2”) are used for packets that travel from the inside to the outside. First of all, we define a pool of address that contain the address of the router (“ip nat pool NAT 192.168.1.1 192.168.1.3 prefix-length 24 type rotary”). Next, we create an extended access-list named “LOADBALANCE” that permits the address of the router (“permit tcp any host 200.1.1.100 eq www ”). Then, we enable a dynamic translation of inside destination addresses (“ip nat inside destination list LOADBALANCE pool NAT”). With this configuration the traffic from outside network will able to take turn to access the router of the inside network accordingly.

Question 2 (c)

```
R4#show ip nat tr
Pro Inside global      Inside local      Outside local      Outside global
tcp 200.1.1.100:80      192.168.1.1:80      200.1.1.2:37081      200.1.1.2:37081
R4#show ip nat tr
Pro Inside global      Inside local      Outside local      Outside global
tcp 200.1.1.100:80      192.168.1.1:80      200.1.1.2:37081      200.1.1.2:37081
tcp 200.1.1.100:80      192.168.1.2:80      200.1.1.2:46618      200.1.1.2:46618
R4#show ip nat tr
Pro Inside global      Inside local      Outside local      Outside global
tcp 200.1.1.100:80      192.168.1.1:80      200.1.1.2:37081      200.1.1.2:37081
tcp 200.1.1.100:80      192.168.1.2:80      200.1.1.2:46618      200.1.1.2:46618
tcp 200.1.1.100:80      192.168.1.3:80      200.1.1.2:59507      200.1.1.2:59507
R4#
```

Figure 4

The figure above show the NAT translation in Router 4.

No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port
10	42.3823640	200.1.1.2	200.1.1.100	TCP	60	47119 > http [SYN] Seq=0 Win=4128 Len=0 MSS=1460	47119	http
11	42.4424040	200.1.1.100	200.1.1.2	TCP	58	http > 47119 [SYN, ACK] Seq=0 Ack=1 Win=4128 Len=0	http	47119
12	42.4724240	200.1.1.2	200.1.1.100	TCP	60	47119 > http [ACK] Seq=1 Ack=1 Win=4128 Len=0	47119	http
13	42.4824310	200.1.1.2	200.1.1.100	TCP	60	[TCP Dup ACK 12#1] 47119 > http [ACK] Seq=1 Ack=1	47119	http
19	57.4672480	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	47119	http
20	57.6073410	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	47119	http
21	57.6303560	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	47119
22	57.6403630	200.1.1.100	200.1.1.2	TCP	54	http > 47119 [FIN, PSH, ACK] Seq=123 Ack=4 Win=0	http	47119
23	57.6473680	200.1.1.2	200.1.1.100	TCP	60	47119 > http [ACK] Seq=4 Ack=124 Win=4006 Len=0	47119	http
24	57.6673820	200.1.1.2	200.1.1.100	TCP	60	47119 > http [FIN, PSH, ACK] Seq=4 Ack=124 Win=0	47119	http
25	57.6903970	200.1.1.100	200.1.1.2	TCP	54	http > 47119 [ACK] Seq=124 Ack=5 Win=4125 Len=0	http	47119
50	156.996236	200.1.1.2	200.1.1.100	TCP	60	22385 > http [SYN] Seq=0 Win=4128 Len=0 MSS=1460	22385	http
51	157.050272	200.1.1.100	200.1.1.2	TCP	58	http > 22385 [SYN, ACK] Seq=0 Ack=1 Win=4128 Len=0	http	22385
52	157.067284	200.1.1.2	200.1.1.100	TCP	60	22385 > http [ACK] Seq=1 Ack=1 Win=4128 Len=0	22385	http
53	157.087297	200.1.1.2	200.1.1.100	TCP	60	[TCP Dup ACK 52#1] 22385 > http [ACK] Seq=1 Ack=1	22385	http
65	204.770731	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	22385	http
67	204.880805	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	22385	http
68	204.904822	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	22385
69	204.914828	200.1.1.100	200.1.1.2	TCP	54	http > 22385 [FIN, PSH, ACK] Seq=123 Ack=4 Win=0	http	22385
70	204.920832	200.1.1.2	200.1.1.100	TCP	60	22385 > http [ACK] Seq=4 Ack=124 Win=4006 Len=0	22385	http
71	204.930839	200.1.1.2	200.1.1.100	TCP	60	22385 > http [FIN, PSH, ACK] Seq=4 Ack=124 Win=0	22385	http
72	204.954854	200.1.1.100	200.1.1.2	TCP	54	http > 22385 [ACK] Seq=124 Ack=5 Win=4125 Len=0	http	22385
73	206.591946	200.1.1.2	200.1.1.100	TCP	60	21753 > http [SYN] Seq=0 Win=4128 Len=0 MSS=1460	21753	http
74	206.645983	200.1.1.100	200.1.1.2	TCP	58	http > 21753 [SYN, ACK] Seq=0 Ack=1 Win=4128 Len=0	http	21753
75	206.672000	200.1.1.2	200.1.1.100	TCP	60	21753 > http [ACK] Seq=1 Ack=1 Win=4128 Len=0	21753	http
76	206.682007	200.1.1.2	200.1.1.100	TCP	60	[TCP Dup ACK 75#1] 21753 > http [ACK] Seq=1 Ack=1	21753	http
77	207.332441	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	21753	http
78	207.556590	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [ACK] Seq=1 Ack=2 Win=4127 Len=0	http	21753
79	208.032908	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	21753	http
80	208.066932	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	21753
81	208.076938	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [FIN, PSH, ACK] Seq=123 Ack=4 Win=0	http	21753
82	208.082942	200.1.1.2	200.1.1.100	TCP	60	21753 > http [ACK] Seq=4 Ack=124 Win=4006 Len=0	21753	http
83	208.112962	200.1.1.2	200.1.1.100	TCP	60	21753 > http [FIN, PSH, ACK] Seq=4 Ack=124 Win=0	21753	http
84	208.146984	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [ACK] Seq=124 Ack=5 Win=4125 Len=0	http	21753

Figure 1 (capture at Router 5)

No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port
8	37.6992410	200.1.1.2	192.168.1.1	TCP	58	47119 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	47119	http
9	37.7392680	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	47119
10	37.7893010	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	47119	http
11	37.7993080	200.1.1.2	192.168.1.1	TCP	54	[TCP Dup ACK 10#1] 47119 > http [ACK] Seq=1 Ack=1	47119	http
15	52.7871270	200.1.1.2	192.168.1.1	TCP	55	[TCP segment of a reassembled PDU]	47119	http
16	52.9172130	200.1.1.2	192.168.1.1	HTTP	56	Continuation or non-HTTP traffic	47119	http
17	52.9272210	192.168.1.1	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	47119
18	52.9372260	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	http	47119
19	52.9572400	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	47119	http
20	52.9772540	200.1.1.2	192.168.1.1	TCP	54	47119 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	47119	http
21	52.9872610	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	47119
40	152.317115	200.1.1.2	192.168.1.2	TCP	58	22385 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	22385	http
41	152.347137	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	22385
42	152.378157	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	22385	http
43	152.381370	200.1.1.2	192.168.1.2	TCP	54	[TCP Dup ACK 42#1] 22385 > http [ACK] Seq=1 Ack=1	22385	http
53	200.091611	200.1.1.2	192.168.1.2	TCP	55	[TCP segment of a reassembled PDU]	22385	http
54	200.191678	200.1.1.2	192.168.1.2	HTTP	56	Continuation or non-HTTP traffic	22385	http
55	200.201685	192.168.1.2	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	22385
56	200.211692	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	http	22385
57	200.231705	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	22385	http
58	200.241711	200.1.1.2	192.168.1.2	TCP	54	22385 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	22385	http
59	200.251718	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	22385
60	201.912826	200.1.1.2	192.168.1.3	TCP	58	21753 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	21753	http
61	201.942846	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	21753
62	201.982873	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	21753	http
63	201.992880	200.1.1.2	192.168.1.3	TCP	54	[TCP Dup ACK 62#1] 21753 > http [ACK] Seq=1 Ack=1	21753	http
64	202.643314	200.1.1.2	192.168.1.3	TCP	55	[TCP segment of a reassembled PDU]	21753	http
65	202.853454	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=1 Ack=2 win=4127 Len=0	http	21753
66	203.343780	200.1.1.2	192.168.1.3	HTTP	56	Continuation or non-HTTP traffic	21753	http
67	203.363795	192.168.1.3	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	21753
68	203.373802	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	http	21753
69	203.393815	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	21753	http
70	203.423835	200.1.1.2	192.168.1.3	TCP	54	21753 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	21753	http
71	203.443848	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	21753

Figure 2 (capture at Router 4)

No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port
8	33.9744390	200.1.1.2	192.168.1.1	TCP	58	47119 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	47119	http
9	34.0144660	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	47119
10	34.0644990	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	47119	http
11	34.0745060	200.1.1.2	192.168.1.1	TCP	54	[TCP Dup ACK 10#1] 47119 > http [ACK] Seq=1 Ack=1	47119	http
14	49.0623250	200.1.1.2	192.168.1.1	TCP	55	[TCP segment of a reassembled PDU]	47119	http
15	49.1924110	200.1.1.2	192.168.1.1	HTTP	56	Continuation or non-HTTP traffic	47119	http
16	49.2024190	192.168.1.1	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	47119
17	49.2124240	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	http	47119
18	49.2324380	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	47119	http
19	49.2524520	200.1.1.2	192.168.1.1	TCP	54	47119 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	47119	http
20	49.2624590	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	47119

Frame 8: 58 bytes on wire (464 bits), 58 bytes captured (464 bits) on interface 0
 Ethernet II, Src: c4:09:2d:d4:00:00 (c4:09:2d:d4:00:00), Dst: c4:06:2d:d4:00:00 (c4:06:2d:d4:00:00)
 Internet Protocol Version 4, Src: 200.1.1.2 (200.1.1.2), Dst: 192.168.1.1 (192.168.1.1)
 Transmission Control Protocol, Src Port: 47119 (47119), Dst Port: http (80), Seq: 0, Len: 0

```

0000  c4 06 2d d4 00 00 c4 09 2d d4 00 00 08 00 45 c0  ..E.....
0010  00 2c 7d bf 00 00 fe 06 b3 9f c8 01 01 02 c0 a8  ..}.....
0020  01 01 08 0f 00 00 6a d8 5d 00 00 00 00 00 60 02  ..P.....
0030  10 20 4d af 00 00 02 04 05 b4  ..M.....
  
```

Figure 3 (capture at Router 1)

Figure 1, 2 and 3 shows that when telnet occur, Router 4 will redirect the packet to Router 1. Figure 1 show that when telnet 200.1.1.100, the packet will firstly travel to Router 4 and then it will be forwarded according to the NAT translation table based on Round Robin algorithm as shown in Figure 2 which in this case it will be forwarded to Router 1. Figure 3 shows that Router 1 receive the packet from the source address (200.1.1.2).

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help										
Filter: tcp Expression... Clear Apply Save										
No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port		
10	42.3823640	200.1.1.2	200.1.1.100	TCP	60	47119 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	47119	http		
11	42.4424040	200.1.1.100	200.1.1.2	TCP	58	http > 47119 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	47119		
12	42.4724240	200.1.1.2	200.1.1.100	TCP	60	47119 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	47119	http		
13	42.4834410	200.1.1.100	200.1.1.2	TCP	60	[TCP Dup ACK 10#1] 47119 > http [ACK] Seq=1 Ack=1	47119	http		
19	57.4672480	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	47119	http		
20	57.6073410	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	47119	http		
21	57.6303560	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	47119		
22	57.6403630	200.1.1.100	200.1.1.2	TCP	54	http > 47119 [FIN, PSH, ACK] Seq=123 Ack=4 win=0	http	47119		
23	57.6473680	200.1.1.2	200.1.1.100	TCP	60	47119 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	47119	http		
24	57.6673820	200.1.1.2	200.1.1.100	TCP	60	47119 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=0	47119	http		
25	57.6803230	200.1.1.100	200.1.1.2	TCP	54	http > 47119 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	47119		
50	156.996236	200.1.1.2	200.1.1.100	TCP	60	22385 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	22385	http		
51	157.050272	200.1.1.100	200.1.1.2	TCP	58	http > 22385 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	22385		
52	157.067284	200.1.1.2	200.1.1.100	TCP	60	22385 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	22385	http		
53	157.087297	200.1.1.100	200.1.1.2	TCP	60	[TCP Dup ACK 52#1] 22385 > http [ACK] Seq=1 Ack=1	22385	http		
65	204.770731	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	22385	http		
67	204.880805	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	22385	http		
68	204.904822	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	22385		
69	204.914828	200.1.1.100	200.1.1.2	TCP	54	http > 22385 [FIN, PSH, ACK] Seq=123 Ack=4 win=0	http	22385		
70	204.920832	200.1.1.2	200.1.1.100	TCP	60	22385 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	22385	http		
71	204.930839	200.1.1.2	200.1.1.100	TCP	60	22385 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=0	22385	http		
72	204.954854	200.1.1.100	200.1.1.2	TCP	54	http > 22385 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	22385		
73	206.591946	200.1.1.2	200.1.1.100	TCP	60	21753 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	21753	http		
74	206.645983	200.1.1.100	200.1.1.2	TCP	58	http > 21753 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	21753		
75	206.672000	200.1.1.2	200.1.1.100	TCP	60	21753 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	21753	http		
76	206.682007	200.1.1.100	200.1.1.2	TCP	60	[TCP Dup ACK 75#1] 21753 > http [ACK] Seq=1 Ack=1	21753	http		
77	207.332441	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	21753	http		
78	207.556590	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [ACK] Seq=1 Ack=2 win=4127 Len=0	http	21753		
79	208.032908	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	21753	http		
80	208.066932	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	21753		
81	208.076938	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [FIN, PSH, ACK] Seq=123 Ack=4 win=0	http	21753		
82	208.082942	200.1.1.2	200.1.1.100	TCP	60	21753 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	21753	http		
83	208.112962	200.1.1.2	200.1.1.100	TCP	60	21753 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=0	21753	http		
84	208.146984	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	21753		

Figure 4 (capture at Router 5)

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help										
Filter: tcp Expression... Clear Apply Save										
No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port		
8	37.6992410	200.1.1.2	192.168.1.1	TCP	58	47119 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	47119	http		
9	37.7392680	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	47119		
10	37.7893010	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	47119	http		
11	37.7993080	200.1.1.2	192.168.1.1	TCP	54	[TCP Dup ACK 10#1] 47119 > http [ACK] Seq=1 Ack=1	47119	http		
15	52.7871270	200.1.1.2	192.168.1.1	TCP	55	[TCP segment of a reassembled PDU]	47119	http		
16	52.912130	200.1.1.2	192.168.1.1	HTTP	56	Continuation or non-HTTP traffic	47119	http		
17	52.9272210	192.168.1.1	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	47119		
18	52.9372260	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [FIN, PSH, ACK] Seq=123 Ack=4 win=0	http	47119		
19	52.9572400	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	47119	http		
20	52.9772540	200.1.1.2	192.168.1.1	TCP	54	47119 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=0	47119	http		
21	52.9872610	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	47119		
40	152.317115	200.1.1.2	192.168.1.2	TCP	58	22385 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	22385	http		
41	152.347137	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	22385		
42	152.378157	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	22385	http		
43	152.398170	200.1.1.2	192.168.1.2	TCP	54	[TCP Dup ACK 42#1] 22385 > http [ACK] Seq=1 Ack=1	22385	http		
53	200.091611	200.1.1.2	192.168.1.2	TCP	55	[TCP segment of a reassembled PDU]	22385	http		
54	200.191678	200.1.1.2	192.168.1.2	HTTP	56	Continuation or non-HTTP traffic	22385	http		
55	200.201685	192.168.1.2	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	22385		
56	200.211692	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [FIN, PSH, ACK] Seq=123 Ack=4 win=0	http	22385		
57	200.231705	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	22385	http		
58	200.241711	200.1.1.2	192.168.1.2	TCP	54	22385 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=0	22385	http		
59	200.251718	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	22385		
60	201.912826	200.1.1.2	192.168.1.3	TCP	58	21753 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	21753	http		
61	201.942846	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	21753		
62	201.982873	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	21753	http		
63	201.992880	200.1.1.2	192.168.1.3	TCP	54	[TCP Dup ACK 62#1] 21753 > http [ACK] Seq=1 Ack=1	21753	http		
64	202.643314	200.1.1.2	192.168.1.3	TCP	55	[TCP segment of a reassembled PDU]	21753	http		
65	202.853454	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=1 Ack=2 win=4127 Len=0	21753	http		
66	203.343780	200.1.1.2	192.168.1.3	HTTP	56	Continuation or non-HTTP traffic	21753	http		
67	203.363795	192.168.1.3	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	21753		
68	203.373802	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [FIN, PSH, ACK] Seq=123 Ack=4 win=0	http	21753		
69	203.393815	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	21753	http		
70	203.423835	200.1.1.2	192.168.1.3	TCP	54	21753 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=0	21753	http		
71	203.443848	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	21753		

Figure 5 (capture at Router 4)

No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port
29	154.138330	200.1.1.2	192.168.1.2	TCP	58	22385 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	22385	http
30	154.168352	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	22385
31	154.199372	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	22385	http
32	154.219385	200.1.1.2	192.168.1.2	TCP	54	[TCP Dup ACK 31#1] 22385 > http [ACK] Seq=1 Ack=1	22385	http
42	201.912826	200.1.1.2	192.168.1.2	TCP	55	[TCP segment of a reassembled PDU]	22385	http
43	202.012893	200.1.1.2	192.168.1.2	HTTP	56	Continuation or non-HTTP traffic	22385	http
44	202.022900	192.168.1.2	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	22385	22385
45	202.032907	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [FIN, PSH, ACK] Seq=123 Ack=4 win=4	http	22385
46	202.052920	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	22385	http
47	202.062926	200.1.1.2	192.168.1.2	TCP	54	22385 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4	22385	http
48	202.072933	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	22385

Frame 29: 58 bytes on wire (464 bits), 58 bytes captured (464 bits) on interface 0

Ethernet II, Src: c4:09:2d:d4:00:00 (c4:09:2d:d4:00:00), Dst: c4:07:2d:d4:00:00 (c4:07:2d:d4:00:00)

Internet Protocol Version 4, Src: 200.1.1.2 (200.1.1.2), Dst: 192.168.1.2 (192.168.1.2)

Transmission Control Protocol, Src Port: 22385 (22385), Dst Port: http (80), Seq: 0, Len: 0


```

0000  c4 07 2d d4 00 00 c4 09 2d d4 00 00 08 00 45 c0  ..-.-.-.-.-E-
0010  00 2c e1 e2 00 00 fe 06 4f 7b c8 01 01 02 c0 a8  .....O[.....
0020  01 02 57 f1 00 50 54 3e 5f 9a 00 00 00 00 60 02  ..Wq.PT>.....
0030  10 20 f1 be 00 00 02 04 05 b4  ..-.-.-.-.-

```

Figure 6 (capture at Router 2)

Figure 4, 5 and 6 shows that when telnet occur, Router 4 will redirect the packet to Router 2. Figure 4 show that when telnet 200.1.1.100, the packet will firstly travel to Router 4 and then it will be forwarded according to the NAT translation table based on Round Robin algorithm as shown in Figure 5 which in this case it will be forwarded to Router 2. Figure 6 shows that Router 2 receive the packet from the source address (200.1.1.2).

No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port
10	42.3823640	200.1.1.2	200.1.1.100	TCP	60	47119 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	47119	http
11	42.4424040	200.1.1.100	200.1.1.2	TCP	58	http > 47119 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	47119
12	42.4724240	200.1.1.2	200.1.1.100	TCP	60	47119 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	47119	http
13	42.4824310	200.1.1.2	200.1.1.100	TCP	60	[TCP Dup ACK 12#1] 47119 > http [ACK] Seq=1 Ack=1	47119	http
19	57.4672480	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	47119	http
20	57.6073410	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	47119	http
21	57.6303560	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	47119	47119
22	57.6403630	200.1.1.100	200.1.1.2	TCP	54	http > 47119 [FIN, PSH, ACK] Seq=123 Ack=4 win=4	http	47119
23	57.6473680	200.1.1.2	200.1.1.100	TCP	60	47119 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	47119	http
24	57.6673820	200.1.1.2	200.1.1.100	TCP	60	47119 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4	47119	http
25	57.6903970	200.1.1.100	200.1.1.2	TCP	54	http > 47119 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	47119
50	156.996236	200.1.1.2	200.1.1.100	TCP	60	22385 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	22385	http
51	157.050272	200.1.1.100	200.1.1.2	TCP	58	http > 22385 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	22385
52	157.067284	200.1.1.2	200.1.1.100	TCP	60	22385 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	22385	http
53	157.077297	200.1.1.2	200.1.1.100	TCP	60	[TCP Dup ACK 52#1] 22385 > http [ACK] Seq=1 Ack=1	22385	http
65	204.770731	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	22385	http
67	204.880805	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	22385	http
68	204.904822	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	22385	22385
69	204.914828	200.1.1.100	200.1.1.2	TCP	54	http > 22385 [FIN, PSH, ACK] Seq=123 Ack=4 win=4	http	22385
70	204.920832	200.1.1.2	200.1.1.100	TCP	60	22385 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	22385	22385
71	204.930839	200.1.1.2	200.1.1.100	TCP	60	22385 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4	22385	http
72	204.954854	200.1.1.100	200.1.1.2	TCP	54	http > 22385 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	22385
73	206.591946	200.1.1.2	200.1.1.100	TCP	60	21753 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	21753	http
74	206.645983	200.1.1.100	200.1.1.2	TCP	58	http > 21753 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	21753
75	206.672000	200.1.1.2	200.1.1.100	TCP	60	21753 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	21753	http
76	206.682007	200.1.1.2	200.1.1.100	TCP	60	[TCP Dup ACK 75#1] 21753 > http [ACK] Seq=1 Ack=1	21753	http
77	207.332441	200.1.1.2	200.1.1.100	TCP	60	[TCP segment of a reassembled PDU]	21753	http
78	207.556590	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [ACK] Seq=1 Ack=2 win=4127 Len=0	http	21753
79	208.032908	200.1.1.2	200.1.1.100	HTTP	60	Continuation or non-HTTP traffic	21753	http
80	208.066932	200.1.1.100	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	21753	21753
81	208.076938	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [FIN, PSH, ACK] Seq=123 Ack=4 win=4	21753	21753
82	208.082942	200.1.1.2	200.1.1.100	TCP	60	21753 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	21753	http
83	208.112962	200.1.1.2	200.1.1.100	TCP	60	21753 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4	21753	http
84	208.146984	200.1.1.100	200.1.1.2	TCP	54	http > 21753 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	21753

Figure 7 (capture at Router 5)

No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port
8	37.6992410	200.1.1.2	192.168.1.1	TCP	58	47119 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	47119	http
9	37.7392680	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	47119
10	37.7893010	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	47119	http
11	37.7992680	200.1.1.2	192.168.1.1	TCP	54	[TCP Dup ACK 42#1] 47119 > http [ACK] Seq=1 Ack=1	47119	http
15	52.7871270	200.1.1.2	192.168.1.1	TCP	55	[TCP segment of a reassembled PDU]	47119	http
16	52.9172130	200.1.1.2	192.168.1.1	HTTP	56	Continuation or non-HTTP traffic	47119	http
17	52.9272210	192.168.1.1	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	47119
18	52.9372260	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	47119	http
19	52.9572400	200.1.1.2	192.168.1.1	TCP	54	47119 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	47119	http
20	52.9772540	200.1.1.2	192.168.1.1	TCP	54	47119 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	47119	http
21	52.9872610	192.168.1.1	200.1.1.2	TCP	60	http > 47119 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	47119
40	152.317115	200.1.1.2	192.168.1.2	TCP	58	22385 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	22385	http
41	152.347137	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	22385
42	152.378157	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	22385	http
43	152.398170	200.1.1.2	192.168.1.2	TCP	54	[TCP Dup ACK 42#1] 22385 > http [ACK] Seq=1 Ack=1	22385	http
53	200.091611	200.1.1.2	192.168.1.2	TCP	55	[TCP segment of a reassembled PDU]	22385	http
54	200.191678	200.1.1.2	192.168.1.2	HTTP	56	Continuation or non-HTTP traffic	22385	http
55	200.201685	192.168.1.2	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	22385
56	200.211692	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	http	22385
57	200.231705	200.1.1.2	192.168.1.2	TCP	54	22385 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	22385	http
58	200.241711	200.1.1.2	192.168.1.2	TCP	54	22385 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	22385	http
59	200.251718	192.168.1.2	200.1.1.2	TCP	60	http > 22385 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	22385
60	201.912826	200.1.1.2	192.168.1.3	TCP	58	21753 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	21753	http
61	201.942846	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	21753
62	201.982873	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	21753	http
63	201.992880	200.1.1.2	192.168.1.3	TCP	54	[TCP Dup ACK 62#1] 21753 > http [ACK] Seq=1 Ack=1	21753	http
64	202.043314	200.1.1.2	192.168.1.3	TCP	55	[TCP segment of a reassembled PDU]	21753	http
65	202.853454	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=1 Ack=2 win=4127 Len=0	http	21753
66	203.343780	200.1.1.2	192.168.1.3	HTTP	56	Continuation or non-HTTP traffic	21753	http
67	203.363795	192.168.1.3	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	21753
68	203.373802	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	http	21753
69	203.393815	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	21753	http
70	203.423835	200.1.1.2	192.168.1.3	TCP	54	21753 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	21753	http
71	203.443848	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	21753

Figure 8 (capture at Router 4)

No.	Time	Source	Destination	Protocol	Length	Info	Source Port	Dest Port
38	200.081604	200.1.1.2	192.168.1.3	TCP	58	21753 > http [SYN] Seq=0 win=4128 Len=0 MSS=1460	21753	http
39	200.111624	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [SYN, ACK] Seq=0 Ack=1 win=4128 Len=0	http	21753
40	200.151651	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=1 Ack=1 win=4128 Len=0	21753	http
41	200.161658	200.1.1.2	192.168.1.3	TCP	54	[TCP Dup ACK 40#1] 21753 > http [ACK] Seq=1 Ack=1	21753	http
42	200.812092	200.1.1.2	192.168.1.3	TCP	55	[TCP segment of a reassembled PDU]	21753	http
43	201.022232	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=1 Ack=2 win=4127 Len=0	http	21753
44	201.512558	200.1.1.2	192.168.1.3	HTTP	56	Continuation or non-HTTP traffic	21753	http
45	201.532573	192.168.1.3	200.1.1.2	HTTP	176	HTTP/1.1 400 Bad Request	http	21753
46	201.542580	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [FIN, PSH, ACK] Seq=123 Ack=4 win=4128	http	21753
47	201.562593	200.1.1.2	192.168.1.3	TCP	54	21753 > http [ACK] Seq=4 Ack=124 win=4006 Len=0	21753	http
48	201.592613	200.1.1.2	192.168.1.3	TCP	54	21753 > http [FIN, PSH, ACK] Seq=4 Ack=124 win=4128	21753	http
49	201.612626	192.168.1.3	200.1.1.2	TCP	60	http > 21753 [ACK] Seq=124 Ack=5 win=4125 Len=0	http	21753

Frame 38: 58 bytes on wire (464 bits), 58 bytes captured (464 bits) on interface 0	
Ethernet II, Src: c4:09:2d:d4:00:00 (c4:09:2d:d4:00:00), Dst: c4:08:2d:d4:00:00 (c4:08:2d:d4:00:00)	
Internet Protocol Version 4, Src: 200.1.1.2 (200.1.1.2), Dst: 192.168.1.3 (192.168.1.3)	
Transmission Control Protocol, Src Port: 21753 (21753), Dst Port: http (80), Seq: 0, Len: 0	

0000	c4 08 2d d4 00 00 c4 09 2d d4 00 00 08 00 45 c0E.
0010	00 2c 24 c0 00 00 fe 06 0c 92 c8 01 01 02 c0 a8	..\$......
0020	01 03 54 f9 00 00 50 99 3d fb b1 00 00 00 60 02	..T...P.....
0030	10 20 13 1f 00 00 02 04 05 b4

Figure 9 (capture at Router 3)

Figure 7, 8 and 9 shows that when telnet occur, Router 4 will redirect the packet to Router 3. Figure 7 show that when telnet 200.1.1.100, the packet will firstly travel to Router 4 and then it will be forwarded according to the NAT translation table based on Round Robin algorithm as shown in Figure 8 which in this case it will be forwarded to Router 3. Figure 9 shows that Router 3 receive the packet from the source address (200.1.1.2).