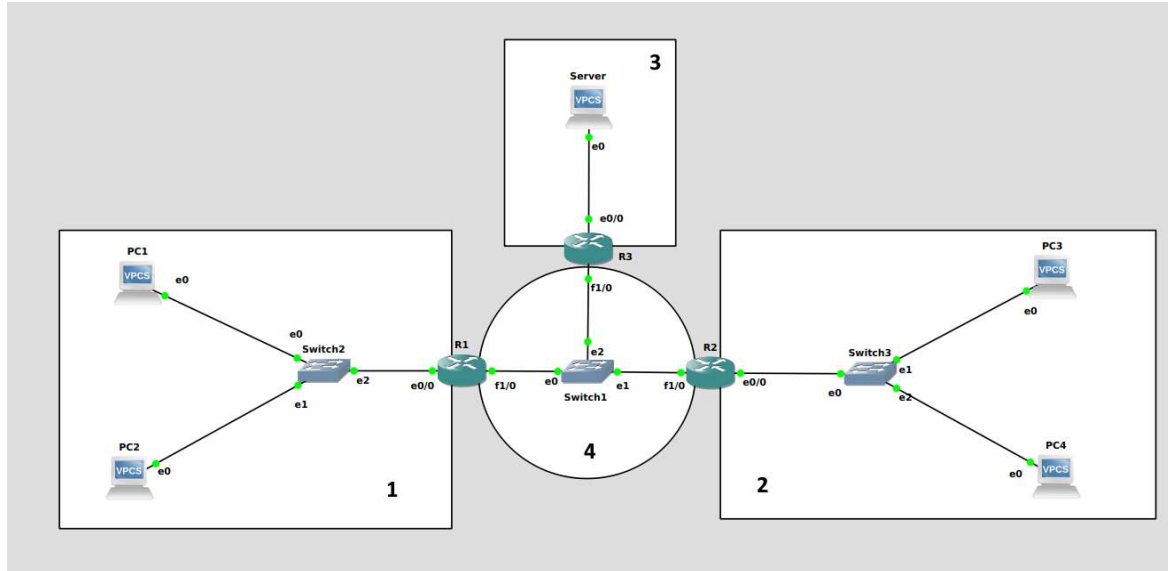


Redes de Comunicação 2020/2021

Relatório da meta intermédia

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1

Network – 193.136.212.128/26

- **R1** – 193.136.212.190/26
- **PC1** – 193.136.212.129/26
- **PC2** – 193.136.212.130

3

Network – 10.90.0.0/24

- **R3** – 10.90.0.245/24
- **Server** – 10.90.0.1/24

2

Network – 193.136.212.192/27

- **R2** – 193.136.212.222/27
- **PC3** – 193.136.212.193/27
- **PC4** – 193.136.212.194/27

4

Network – 193.136.212.224/29

- **R1** – 193.136.212.225/29
- **R2** – 193.136.212.226/29
- **R3** – 193.136.212.227/29

Comandos de configuração:

R1:

```
conf t
interface e0/0
ip address 193.136.212.190 255.255.255.192
no shut
exit
interface f1/0
ip address 193.136.212.225 255.255.255.248
no shut
exit
ip route 193.136.212.192 255.255.255.224 193.136.212.226
exit
```

R2:

```
conf t
interface e0/0
ip address 193.136.212.222 255.255.255.224
no shut
exit
interface f1/0
ip address 193.136.212.226 255.255.255.248
no shut
exit
ip route 193.136.212.128 255.255.255.192 193.136.212.225
exit
```

R3:

```
conf t
interface e0/0
ip address 10.90.0.254 255.255.255.0
ip nat inside
no shut
exit
interface f1/0
ip address 193.136.212.227 255.255.255.248
ip nat outside
no shut
exit
ip route 193.136.212.128 255.255.255.192 193.136.212.225
ip route 193.136.212.192 255.255.255.224 193.136.212.226
access-list 1 permit 10.90.0.0 0.0.0.255
ip nat inside source list 1 interface f1/0 overload
ip nat inside source static tcp 10.90.0.1 80 193.136.212.227 80
exit
```

PC1: ip 193.136.212.129/26 193.136.212.190

PC2: ip 193.136.212.130/26 193.136.212.190

PC3: ip 193.136.212.193/27 193.136.212.222

PC4: ip 193.136.212.194/27 193.136.212.222

Server: ip 10.90.0.1/24 10.90.0.254

Ping PC1 -> (PC3 e Server)

```
PC1> ping 193.136.212.227 -3 -p 80

Connect 800193.136.212.227 seq=1 ttl=62 time=21.689 ms
SendData 800193.136.212.227 seq=1 ttl=62 time=27.655 ms
Close 800193.136.212.227 seq=1 ttl=62 time=27.655 ms
Connect 800193.136.212.227 seq=2 ttl=62 time=27.613 ms
SendData 800193.136.212.227 seq=2 ttl=62 time=24.410 ms
Close 800193.136.212.227 seq=2 ttl=62 time=24.429 ms
Connect 800193.136.212.227 seq=3 ttl=62 time=26.673 ms
SendData 800193.136.212.227 seq=3 ttl=62 time=24.457 ms
Close 800193.136.212.227 seq=3 ttl=62 time=25.643 ms
Connect 800193.136.212.227 seq=4 ttl=62 time=26.295 ms
SendData 800193.136.212.227 seq=4 ttl=62 time=24.608 ms
Close 800193.136.212.227 seq=4 ttl=62 time=25.690 ms
Connect 800193.136.212.227 seq=5 ttl=62 time=26.609 ms
SendData 800193.136.212.227 seq=5 ttl=62 time=25.574 ms
Close 800193.136.212.227 seq=5 ttl=62 time=25.709 ms

PC1> ping 193.136.212.193

84 bytes from 193.136.212.193 icmp_seq=1 ttl=62 time=21.836 ms
84 bytes from 193.136.212.193 icmp_seq=2 ttl=62 time=27.263 ms
84 bytes from 193.136.212.193 icmp_seq=3 ttl=62 time=26.799 ms
84 bytes from 193.136.212.193 icmp_seq=4 ttl=62 time=28.345 ms
84 bytes from 193.136.212.193 icmp_seq=5 ttl=62 time=28.848 ms
```

Ping PC3 -> (PC1 e Server)

```
PC3> ping 193.136.212.227 -3 -p 80

Connect 800193.136.212.227 seq=1 ttl=62 time=49.924 ms
SendData 800193.136.212.227 seq=1 ttl=62 time=31.844 ms
Close 800193.136.212.227 seq=1 ttl=62 time=42.385 ms
Connect 800193.136.212.227 seq=2 ttl=62 time=26.574 ms
SendData 800193.136.212.227 seq=2 ttl=62 time=25.558 ms
Close 800193.136.212.227 seq=2 ttl=62 time=25.878 ms
Connect 800193.136.212.227 seq=3 ttl=62 time=27.612 ms
SendData 800193.136.212.227 seq=3 ttl=62 time=24.374 ms
Close 800193.136.212.227 seq=3 ttl=62 time=25.465 ms
Connect 800193.136.212.227 seq=4 ttl=62 time=36.948 ms
SendData 800193.136.212.227 seq=4 ttl=62 time=39.248 ms
Close 800193.136.212.227 seq=4 ttl=62 time=40.443 ms
Connect 800193.136.212.227 seq=5 ttl=62 time=37.745 ms
SendData 800193.136.212.227 seq=5 ttl=62 time=37.614 ms
Close 800193.136.212.227 seq=5 ttl=62 time=39.398 ms

PC3> ping 193.136.212.129

84 bytes from 193.136.212.129 icmp_seq=1 ttl=62 time=38.473 ms
84 bytes from 193.136.212.129 icmp_seq=2 ttl=62 time=27.150 ms
84 bytes from 193.136.212.129 icmp_seq=3 ttl=62 time=27.489 ms
84 bytes from 193.136.212.129 icmp_seq=4 ttl=62 time=28.317 ms
```

Ping Server -> (PC1 e PC3)

```
Server> ping 193.136.212.129

84 bytes from 193.136.212.129 icmp_seq=1 ttl=62 time=40.106 ms
84 bytes from 193.136.212.129 icmp_seq=2 ttl=62 time=26.677 ms
84 bytes from 193.136.212.129 icmp_seq=3 ttl=62 time=26.867 ms
84 bytes from 193.136.212.129 icmp_seq=4 ttl=62 time=26.227 ms
84 bytes from 193.136.212.129 icmp_seq=5 ttl=62 time=27.110 ms

Server> ping 193.136.212.193

193.136.212.193 icmp_seq=1 timeout
84 bytes from 193.136.212.193 icmp_seq=2 ttl=62 time=38.033 ms
84 bytes from 193.136.212.193 icmp_seq=3 ttl=62 time=27.542 ms
84 bytes from 193.136.212.193 icmp_seq=4 ttl=62 time=27.477 ms
84 bytes from 193.136.212.193 icmp_seq=5 ttl=62 time=27.906 ms
```

Teste DNAT

The image shows a Wireshark capture of network traffic. The top pane displays a list of captured packets, filtered for PC1 (193.136.212.129). The bottom pane shows the details of the selected packet, which is an ICMP Echo (ping) request from PC1 to the Server (193.136.212.129). The packet is captured on the Ethernet0/0 interface of the Server. The packet details show the Ethernet II header, Internet Protocol Version 4 header, and ICMP Echo (ping) request. The packet is 84 bytes long and has a TTL of 62. The packet is captured on the Ethernet0/0 interface of the Server.

Teste SNAT

The image shows a Wireshark capture of network traffic. The top pane displays a list of captured packets, filtered for PC1 (193.136.212.129). The bottom pane shows the details of the selected packet, which is an ICMP Echo (ping) request from PC1 to the Server (193.136.212.129). The packet is captured on the Ethernet0/0 interface of the Server. The packet details show the Ethernet II header, Internet Protocol Version 4 header, and ICMP Echo (ping) request. The packet is 84 bytes long and has a TTL of 62. The packet is captured on the Ethernet0/0 interface of the Server.