Зотов Дмитрий

Лабораторная 4

1 - 3) Выполнить планирование и документирование адресного пространства в подсетях LAN1, LAN2, LAN3 и назначить статические адреса маршрутизаторам и динамическое конфигурирование адресов для VPC.

Настроить сервер DHCP на маршрутизаторе R2 для обслуживания адресных пулов адресного пространства подсетей LAN1 и LAN2.

Настроить статическую маршрутизацию между подсетями.

R1:

```
R1(config)#int FastEthernet1/0
R1(config-if)#ip address 192.168.3.1 255.255.255.0
R1(config-if)#no shut
R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#exit
R1(config)#interface FastEthernet2/0
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#exit
R1(config)#ip route 192.168.3.0 255.255.255.0 192.168.3.2
R1(config)#int FastEthernet0/0
R1(config-if)#ip helper-address 192.168.3.2
R1(config-if)#exit
R1(config)#int FastEthernet2/0
R1(config-if)#ip helper-address 192.168.3.2
R1(config-if)#exit
R1(config)#exit
```

R2:

```
R2(config)#int FastEthernet0/0
R2(config-if)#ip address 192.168.3.2 255.255.255.0
R2(config-if)#no shut
R2(config-if)#exit
R2(config)#ip dhcp pool LAN1
R2(dhcp-config)#network 192.168.1.0 255.255.255.0
R2(dhcp-config)#default-router 192.168.1.1
R2(dhcp-config)#dns-server 8.8.8.8
R2(dhcp-config)#exit
R2(config)#ip dhcp pool LAN2
```

```
R2(dhcp-config)#network 192.168.2.0 255.255.255.0
R2(dhcp-config)#default-router 192.168.2.1
R2(dhcp-config)#dns-server 8.8.8.8
R2(dhcp-config)#exit
R2(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
R2(config)#ip dhcp excluded-address 192.168.2.1 192.168.2.10
R2(config)#ip route 192.168.1.0 255.255.255.0 192.168.3.1
R2(config)#ip route 192.168.2.0 255.255.255.0 192.168.3.1
R2(config)#exit
```

PC1:

```
PC1> ip dhcp
DDORA IP 192.168.1.11/24 GW 192.168.1.1
```

PC2:

```
PC2> ip dhcp
DDORA IP 192.168.1.12/24 GW 192.168.1.1
```

PC3:

```
PC3> ip dhcp
DDORA IP 192.168.2.11/24 GW 192.168.2.1
```

PC4:

```
PC4> ip dhcp
DDORA IP 192.168.2.12/24 GW 192.168.2.1
```

PC1 пингует PC2-4:

```
PC1> ping 192.168.1.12

84 bytes from 192.168.1.12 icmp_seq=1 ttl=64 time=4.412 ms
84 bytes from 192.168.1.12 icmp_seq=2 ttl=64 time=1.051 ms
84 bytes from 192.168.1.12 icmp_seq=3 ttl=64 time=2.043 ms
84 bytes from 192.168.1.12 icmp_seq=4 ttl=64 time=2.906 ms
84 bytes from 192.168.1.12 icmp_seq=5 ttl=64 time=4.724 ms

PC1> echo PC3
PC3
PC1> ping 192.168.2.11

84 bytes from 192.168.2.11 icmp_seq=1 ttl=63 time=29.330 ms
84 bytes from 192.168.2.11 icmp_seq=2 ttl=63 time=16.494 ms
84 bytes from 192.168.2.11 icmp_seq=3 ttl=63 time=16.016 ms
84 bytes from 192.168.2.11 icmp_seq=4 ttl=63 time=17.245 ms
84 bytes from 192.168.2.11 icmp_seq=5 ttl=63 time=16.867 ms

PC1> ping 192.168.2.12

84 bytes from 192.168.2.12 icmp_seq=1 ttl=63 time=39.755 ms
84 bytes from 192.168.2.12 icmp_seq=2 ttl=63 time=17.305 ms
84 bytes from 192.168.2.12 icmp_seq=3 ttl=63 time=17.195 ms
84 bytes from 192.168.2.12 icmp_seq=4 ttl=63 time=18.494 ms
84 bytes from 192.168.2.12 icmp_seq=5 ttl=63 time=17.919 ms

PC1>
```

PC2 пингует PC1 & PC3-4:

```
PC2> ping 192.168.1.11

84 bytes from 192.168.1.11 icmp_seq=1 ttl=64 time=0.560 ms
84 bytes from 192.168.1.11 icmp_seq=2 ttl=64 time=8.119 ms
84 bytes from 192.168.1.11 icmp_seq=3 ttl=64 time=0.861 ms
84 bytes from 192.168.1.11 icmp_seq=4 ttl=64 time=4.976 ms
84 bytes from 192.168.1.11 icmp_seq=5 ttl=64 time=5.598 ms

PC2> ping 192.168.2.11

84 bytes from 192.168.2.11 icmp_seq=1 ttl=63 time=30.397 ms
84 bytes from 192.168.2.11 icmp_seq=2 ttl=63 time=11.930 ms
84 bytes from 192.168.2.11 icmp_seq=3 ttl=63 time=16.622 ms
84 bytes from 192.168.2.11 icmp_seq=4 ttl=63 time=19.455 ms
84 bytes from 192.168.2.11 icmp_seq=5 ttl=63 time=16.549 ms

PC2> ping 192.168.2.12

84 bytes from 192.168.2.12 icmp_seq=1 ttl=63 time=26.987 ms
84 bytes from 192.168.2.12 icmp_seq=2 ttl=63 time=17.836 ms
84 bytes from 192.168.2.12 icmp_seq=3 ttl=63 time=16.654 ms
84 bytes from 192.168.2.12 icmp_seq=4 ttl=63 time=16.686 ms
84 bytes from 192.168.2.12 icmp_seq=5 ttl=63 time=17.231 ms

PC2>
```

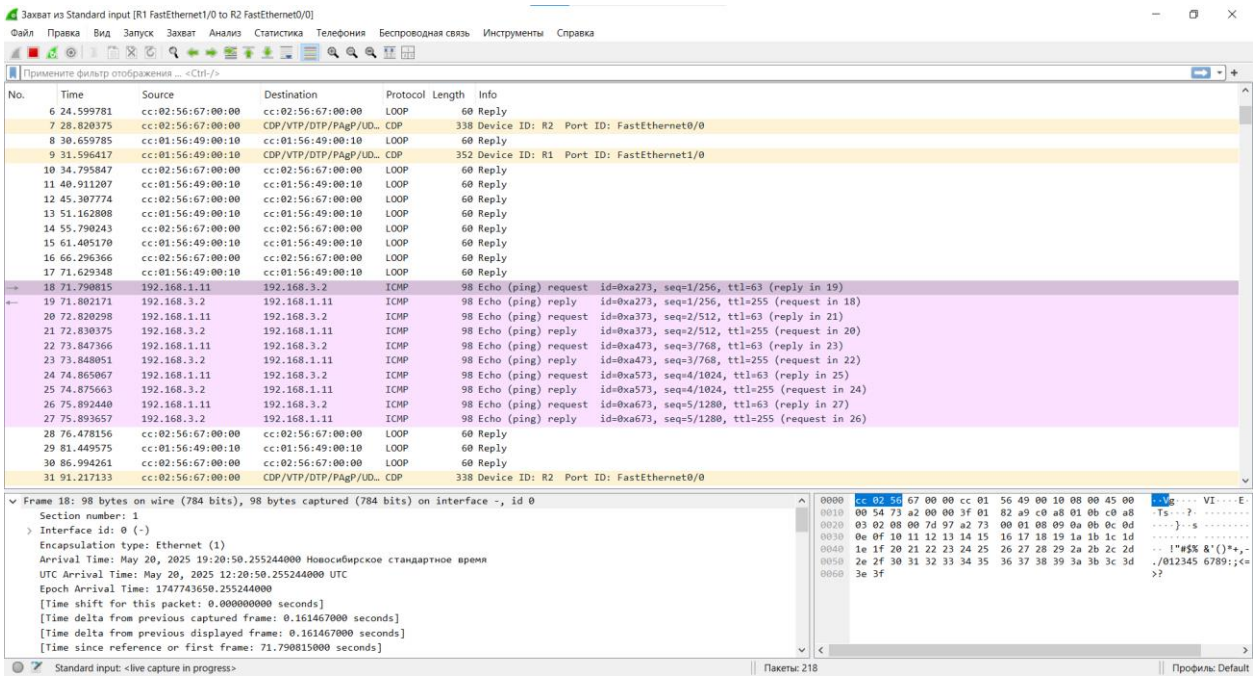
PC3 пингует PC1-2 & PC4:

```
PC3> ping 192.168.1.11

84 bytes from 192.168.1.11 icmp_seq=1 ttl=63 time=30.035 ms
84 bytes from 192.168.1.11 icmp_seq=2 ttl=63 time=17.750 ms
84 bytes from 192.168.1.11 icmp_seq=3 ttl=63 time=11.875 ms
84 bytes from 192.168.1.11 icmp_seq=4 ttl=63 time=27.345 ms
84 bytes from 192.168.1.11 icmp_seq=5 ttl=63 time=16.109 ms

PC3> ping 192.168.1.12

84 bytes from 192.168.1.12 icmp_seq=1 ttl=63 time=22.512 ms
84 bytes from 192.168.1.12 icmp_seq=2 ttl=63 time=17.704 ms
84 bytes from 192.168.1.12 icmp_seq=3 ttl=63 time=13.673 ms
84 bytes from 192.168.1.12 icmp_seq=4 ttl=63 time=17.139 ms
84 bytes from 192.168.1.12 icmp_seq=5 ttl=63 time=29.571 ms

PC3> ping 192.168.2.12

84 bytes from 192.168.2.12 icmp_seq=1 ttl=64 time=8.889 ms
84 bytes from 192.168.2.12 icmp_seq=2 ttl=64 time=0.756 ms
84 bytes from 192.168.2.12 icmp_seq=3 ttl=64 time=0.896 ms
84 bytes from 192.168.2.12 icmp_seq=4 ttl=64 time=6.396 ms
84 bytes from 192.168.2.12 icmp_seq=5 ttl=64 time=0.594 ms

PC3>
```

PC4 пингует PC1-3:

```
PC4> ping 192.168.1.11

84 bytes from 192.168.1.11 icmp_seq=1 ttl=63 time=19.537 ms
84 bytes from 192.168.1.11 icmp_seq=2 ttl=63 time=16.972 ms
84 bytes from 192.168.1.11 icmp_seq=3 ttl=63 time=16.676 ms
84 bytes from 192.168.1.11 icmp_seq=4 ttl=63 time=16.862 ms
84 bytes from 192.168.1.11 icmp_seq=5 ttl=63 time=17.672 ms

PC4> ping 192.168.1.12

84 bytes from 192.168.1.12 icmp_seq=1 ttl=63 time=15.102 ms
84 bytes from 192.168.1.12 icmp_seq=2 ttl=63 time=18.245 ms
84 bytes from 192.168.1.12 icmp_seq=3 ttl=63 time=18.122 ms
84 bytes from 192.168.1.12 icmp_seq=4 ttl=63 time=17.253 ms
84 bytes from 192.168.1.12 icmp_seq=5 ttl=63 time=18.090 ms

PC4> ping 192.168.2.11

84 bytes from 192.168.2.11 icmp_seq=1 ttl=64 time=14.367 ms
84 bytes from 192.168.2.11 icmp_seq=2 ttl=64 time=3.469 ms
84 bytes from 192.168.2.11 icmp_seq=3 ttl=64 time=6.085 ms
84 bytes from 192.168.2.11 icmp_seq=4 ttl=64 time=5.558 ms
84 bytes from 192.168.2.11 icmp_seq=5 ttl=64 time=3.687 ms

PC4>
```

PING R2:



Seq=1/256 – порядковый номер ICPM запроса, 1 – порядковый номер, 256 – максимум запросов

ttl = 63 – это time to live время жизни пакета