Миневска Ани Стоянова ИУ7И-76Б

**Расчет подсетей**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| № | К-во хостов | Сеть | Диапазон хостов | Широковещательный адрес | Маска |
| 1 | 254 | 192.168.20.0 | [192.168.20.1 - 192.168.20.254] | 192.168.20.255 | 255.255.255.0 (24) |
| 2 | 254 | 192.168.21.0 | [192.168.21.1 - 192.168.21.254] | 192.168.21.255 | 255.255.255.0 (24) |
| 3 | 254 | 192.168.22.0 | [192.168.22.1 - 192.168.22.254] | 192.168.22.255 | 255.255.255.0 (24) |
| 4 | 254 | 192.168.23.0 | [192.168.23.1 - 192.168.23.254] | 192.168.23.255 | 255.255.255.0 (24) |
| 5 | 254 | 192.168.30.0 | [192.168.30.1 - 192.168.30.254] | 192.168.30.255 | 255.255.255.0 (24) |

**Назначить адреса подсетей для стенда 1:**

**Router0**

Router>en

Router#conf t

Router(config)#int Gig0/0/0

Router(config-if)#ip address 192.168.20.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#exit

Router(config)#int Ser0/1/0

Router(config-if)#ip address 192.168.21.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#end

Router#wr

**Router2**

Router>en

Router#conf t

Router(config)#int Se0/1/0

Router(config-if)#ip address 192.168.21.2 255.255.255.0

Router(config-if)#no sh

Router(config-if)#exit

Router(config)#int Se0/1/1

Router(config-if)#ip address 192.168.22.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#end

Router#wr

**Router1**

Router>en

Router#conf t

Router(config)#int Se0/1/0

Router(config-if)#ip address 192.168.22.2 255.255.255.0

Router(config-if)#no sh

Router(config-if)#exit

Router(config)#int Gig0/0/0

Router(config-if)#ip address 192.168.23.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#end

Router#wr

**Назначить адреса подсетей для стенда 2:**

**Router7**

Router>en

Router#conf t

Router(config)#int Gig0/0/0

Router(config-if)#ip address 192.168.20.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#exit

Router(config)#int Gig0/0/1

Router(config-if)#ip address 192.168.30.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#end

Router#wr

**Router8**

Router>en

Router#conf t

Router(config)#int Gig0/0/0

Router(config-if)#ip address 192.168.21.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#exit

Router(config)#int Gig 0/0/1

Router(config-if)#ip address 192.168.30.2 255.255.255.0

Router(config-if)#no sh

Router(config-if)#end

Router#wr

**Router9**

Router>en

Router#conf t

Router(config)#int Gig0/0/0

Router(config-if)#ip address 192.168.22.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#exit

Router(config)#int Gig0/0/1

Router(config-if)#ip address 192.168.30.3 255.255.255.0

Router(config-if)#no sh

Router(config-if)#end

Router#wr

**Router10**

Router>en

Router#conf t

Router(config)#int Gig0/0/0

Router(config-if)#ip address 192.168.23.1 255.255.255.0

Router(config-if)#no sh

Router(config-if)#exit

Router(config)#int Gig0/0/1

Router(config-if)#ip address 192.168.30.4 255.255.255.0

Router(config-if)#no sh

Router(config-if)#end

Router#wr

**Конфигурация RIPv2 на стенде 1**

**Router0**

Router(config)#router rip

Router(config-router)#version 2

Router(config-router)#network 192.168.20.0

Router(config-router)#network 192.168.21.0

**Router2**

Router(config)#router rip

Router(config-router)#version 2

Router(config-router)#network 192.168.21.0

Router(config-router)#network 192.168.22.0

**Router1**

Router(config)#router rip

Router(config-router)#version 2

Router(config-router)#network 192.168.22.0

Router(config-router)#network 192.168.23.0

**Проверка**

**Router0**

Router#show ip route rip

192.168.21.0/24 is variably subnetted, 2 subnets, 2 masks

R 192.168.22.0/24 [120/1] via 192.168.21.2, 00:00:05, Serial0/1/0

R 192.168.23.0/24 [120/2] via 192.168.21.2, 00:00:05, Serial0/1/0

**Router2**

Router#show ip route rip

R 192.168.20.0/24 [120/1] via 192.168.21.1, 00:00:24, Serial0/1/0

192.168.22.0/24 is variably subnetted, 2 subnets, 2 masks

R 192.168.23.0/24 [120/1] via 192.168.22.2, 00:00:28, Serial0/1/1

**Router1**

Router#show ip route rip

R 192.168.20.0/24 [120/2] via 192.168.22.1, 00:00:26, Serial0/1/0

R 192.168.21.0/24 [120/1] via 192.168.22.1, 00:00:26, Serial0/1/0

**Конфигурация RIPv2 на стенде 1**

**Router7**

Router(config)#router ospf 20

Router(config-router)#network 192.168.20.0 0.0.0.255 area 1

Router(config-router)#network 192.168.30.0 0.0.0.255 area 0

**Router8**

Router(config)#router ospf 20

Router(config-router)#network 192.168.21.0 0.0.0.255 area 2

Router(config-router)#network 192.168.30.0 0.0.0.255 area 0

**Router9**

Router(config)#router ospf 20

Router(config-router)#network 192.168.22.0 0.0.0.255 area 3

Router(config-router)#network 192.168.30.0 0.0.0.255 area 0

**Router10**

Router(config)#router ospf 20

Router(config-router)#network 192.168.23.0 0.0.0.255 area 4

Router(config-router)#network 192.168.30.0 0.0.0.255 area 0

**Для каждого маршрутизатора была включена аутентификация**

Router(config)#int gig0/0/1

Router(config-if)#ip ospf authentication-key secret

Router(config-if)#exit

Router(config)#router ospf 20

Router(config-router)#area 0 authentication

Router(config-router)#end

Router#wr

**Проверка**

**Router7**

Router#show ip route ospf

O IA 192.168.21.0 [110/2] via 192.168.30.2, 00:01:21, GigabitEthernet0/0/1

O IA 192.168.22.0 [110/2] via 192.168.30.3, 00:01:21, GigabitEthernet0/0/1

O IA 192.168.23.0 [110/2] via 192.168.30.4, 00:01:31, GigabitEthernet0/0/1

**Router8**

Router#show ip route ospf

O IA 192.168.20.0 [110/2] via 192.168.30.1, 00:01:52, GigabitEthernet0/0/1

O IA 192.168.22.0 [110/2] via 192.168.30.3, 00:01:52, GigabitEthernet0/0/1

O IA 192.168.23.0 [110/2] via 192.168.30.4, 00:01:52, GigabitEthernet0/0/1

**Router9**

Router#show ip route ospf

O IA 192.168.20.0 [110/2] via 192.168.30.1, 00:03:32, GigabitEthernet0/0/1

O IA 192.168.21.0 [110/2] via 192.168.30.2, 00:03:32, GigabitEthernet0/0/1

O IA 192.168.23.0 [110/2] via 192.168.30.4, 00:03:42, GigabitEthernet0/0/1

**Router10**

Router#show ip route ospf

O IA 192.168.20.0 [110/2] via 192.168.30.1, 00:04:02, GigabitEthernet0/0/1

O IA 192.168.21.0 [110/2] via 192.168.30.2, 00:04:02, GigabitEthernet0/0/1

O IA 192.168.22.0 [110/2] via 192.168.30.3, 00:04:02, GigabitEthernet0/0/1