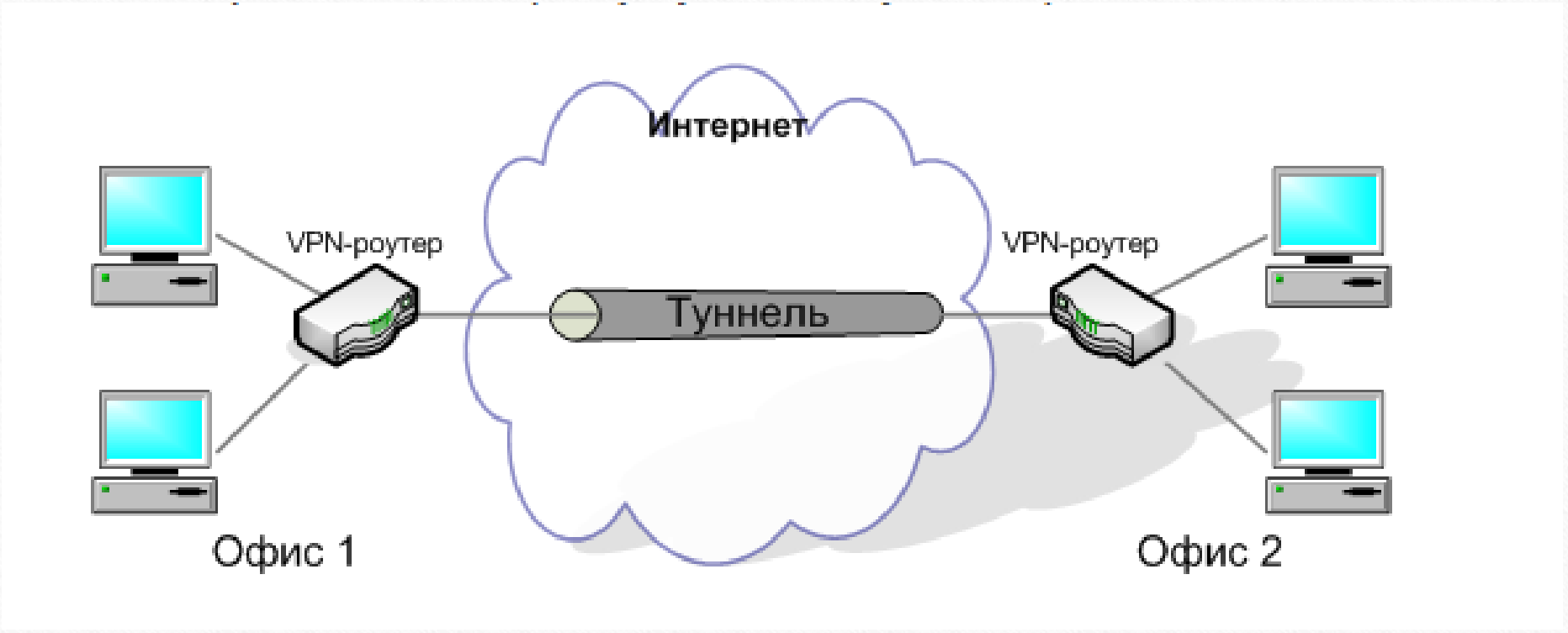
Building VPN using OSPF 50 remote location

Mikro *Tik* RB900 series

Что использовалось при построение VPN ?

- GRE - Generic Routing Encapsulation
- IPSEC - IP Security
- ROUTING - is the process of selecting best paths in a network

VPN – Virtual Private Network



IPSEC – IP Security

Набор протоколов для обеспечения защиты данных, передаваемых по межсетевому протоколу IP. Позволяет осуществлять подтверждение подлинности (аутентификацию), проверку целостности и/или шифрование IP-пакетов. IPsec также включает в себя протоколы для защищённого обмена ключами в сети Интернет. В основном, применяется для организации VPN -соединений.

OSPF - Open Shortest Path First

Оборудование

RB951Ui-2HnD

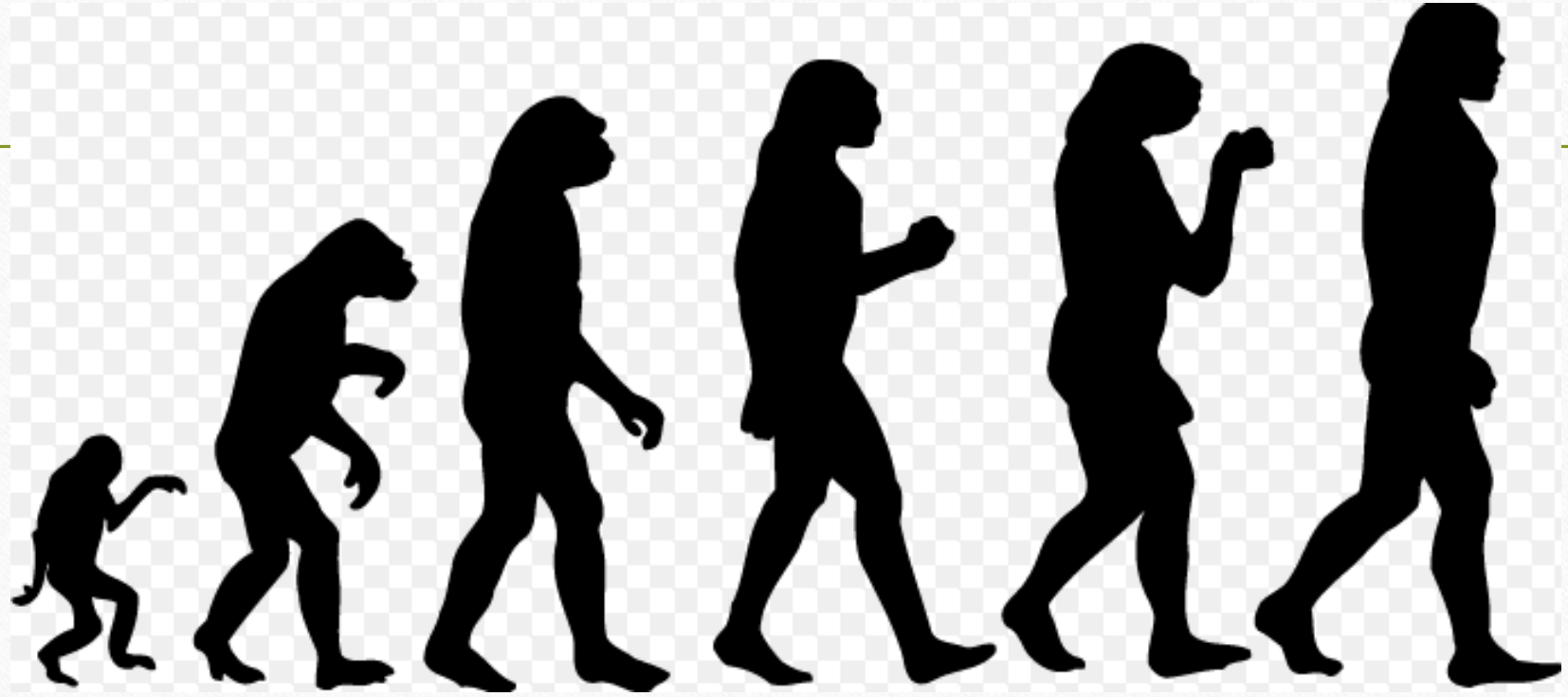
CISCO 3900

+

RB951Ui-2HnD

Product code	RB951Ui-2HnD
CPU nominal frequency	600 MHz
CPU core count	1
Size of RAM	128 MB
License level	4

Пред история



Аренда VPN от частного провайдера

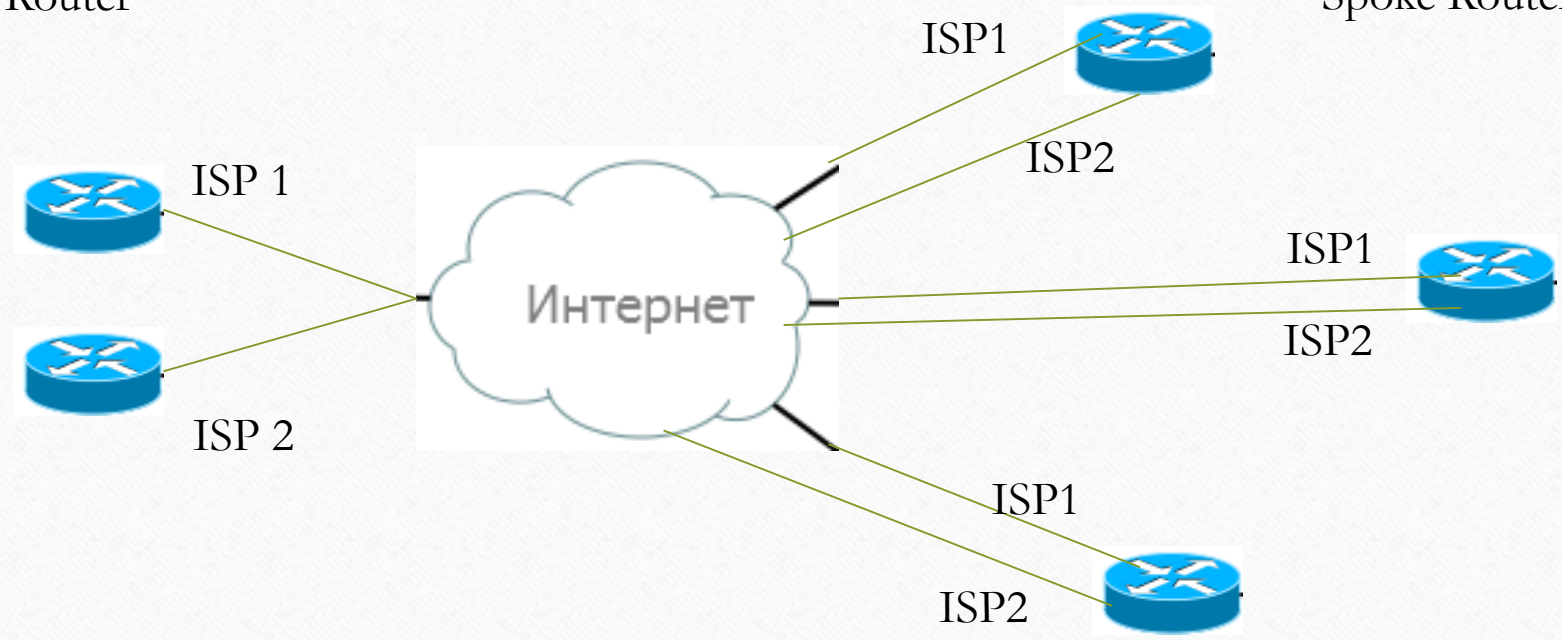
Построение VPN используя CISCO

Построение VPN используя оборудование MikroTIK

Схема сети

Main Office
HUB Router

Branch Office
Spoke Router



Настройка VPN OSPF **RB951Ui-2HnD**

- Настраиваем GRE туннель, IPsec, OSPF на HUB маршрутизаторе CISCO , пример настройки OSPF на CISCO .

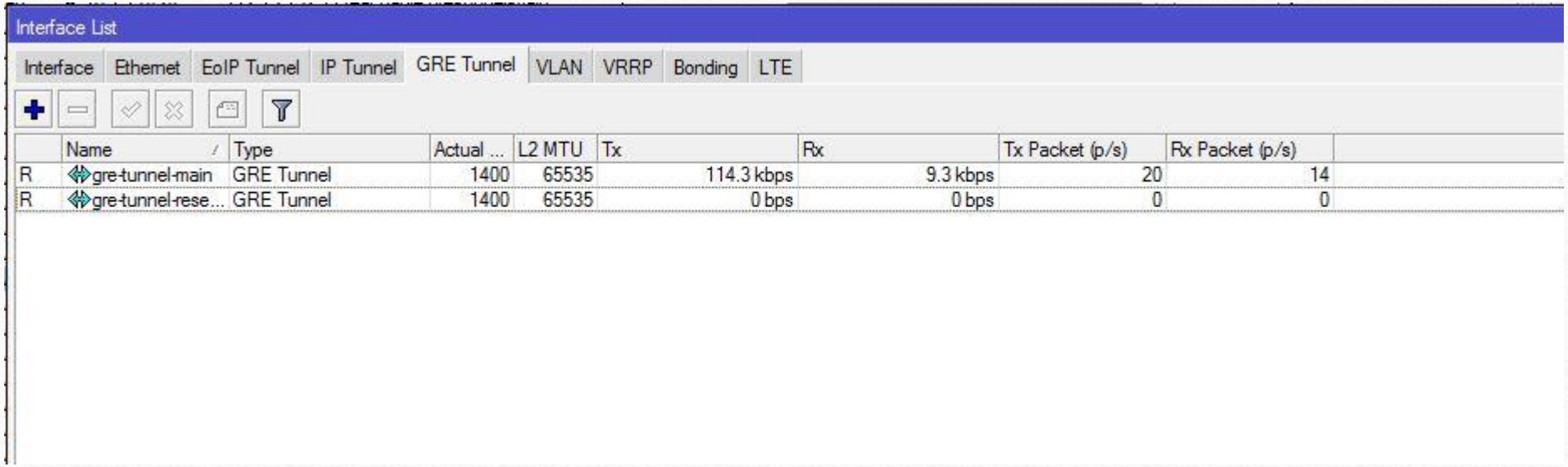
```
router ospf 1
 router-id 10.0.0.70
 passive-interface default
 no passive-interface GigabitEthernet0/0
 no passive-interface Tunnel1
 no passive-interface Tunnel2
```

```
interface Tunnel2
 description
 ip address 172.19.152.77 255.255.255.252
 no ip redirects
 ip mtu 1400
 ip ospf cost 15
 tunnel source 79.
 tunnel destination 31.
 tunnel protection ipsec profile MICROTIK_Profile2
```

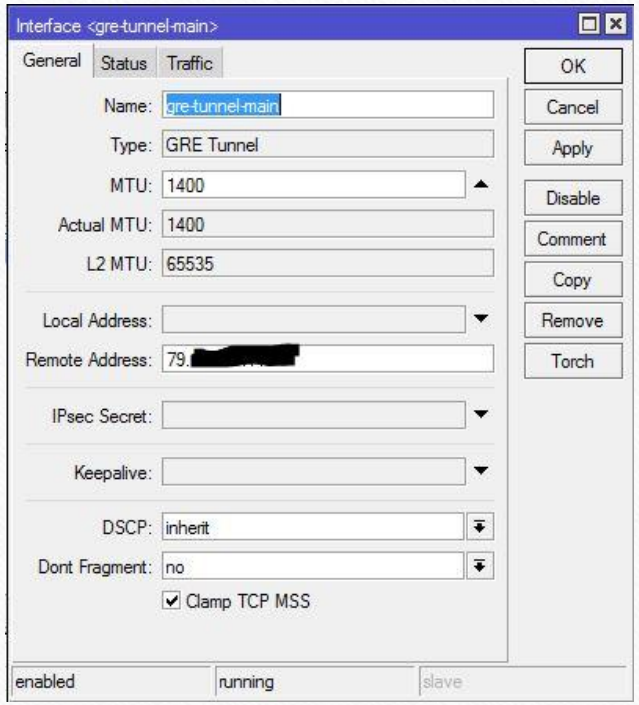
Пример настройки GRE tunnel на CISCO

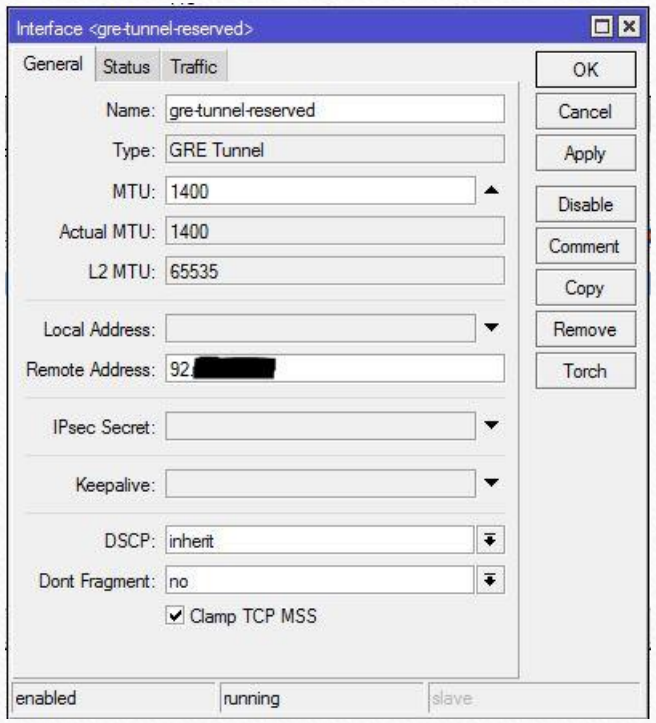
```
interface Tunnel2
 description Aktobe6
 ip address 172.19.153.77 255.255.255.252
 no ip redirects
 ip mtu 1400
 ip ospf cost 20
 tunnel source 92.
 tunnel destination 31.
 tunnel protection ipsec profile MICROTIK_Profile2
!
```

GRE tunnel на MikroTIK

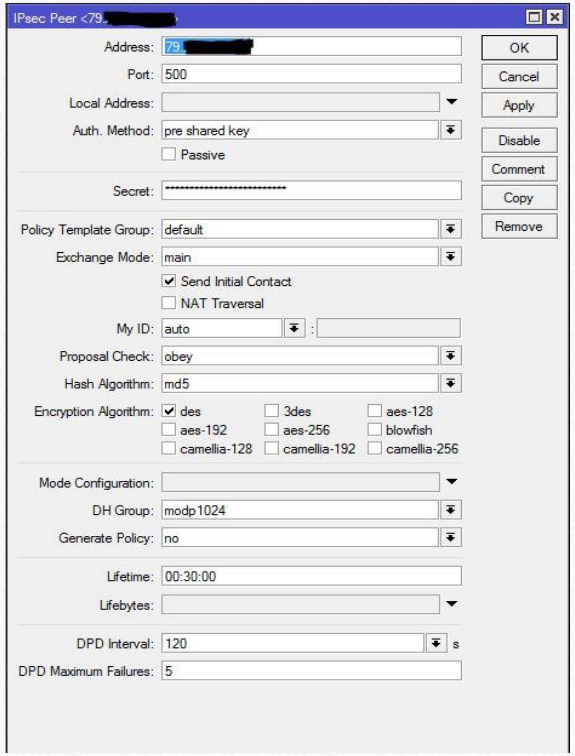


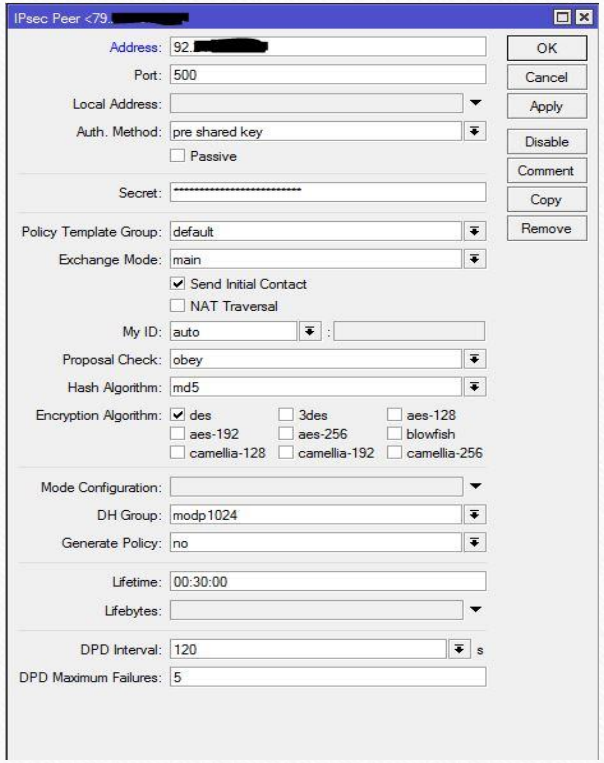
Настройка GRE туннеля основного и резервного



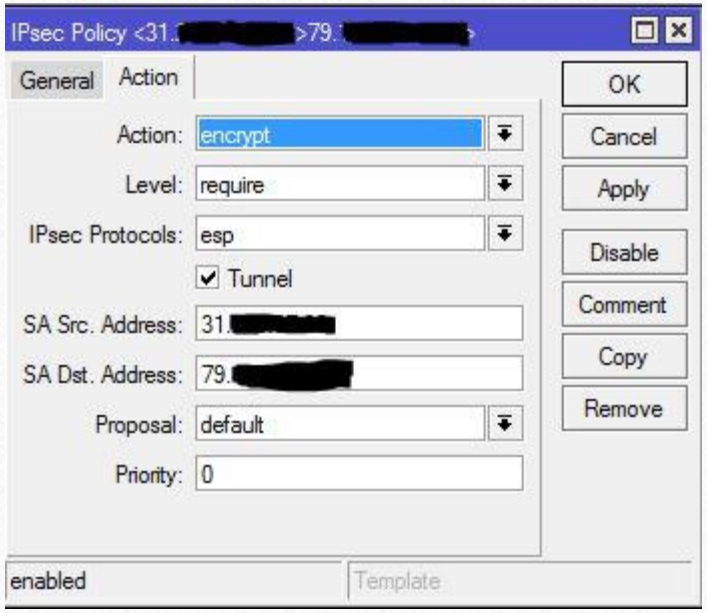


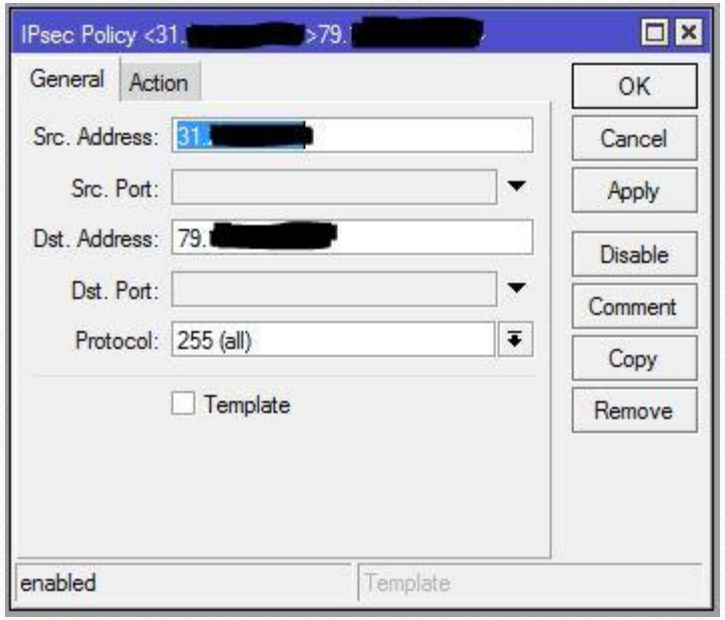
Настройка IPsec peer основной и резервный



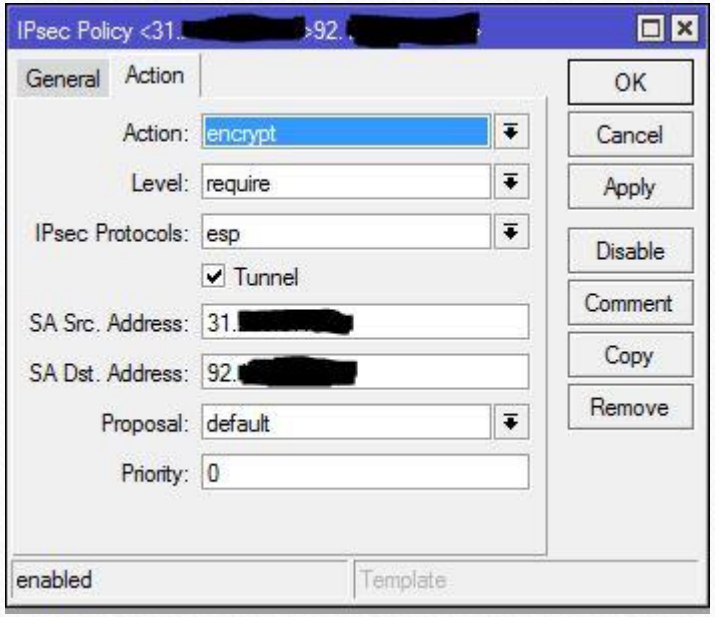


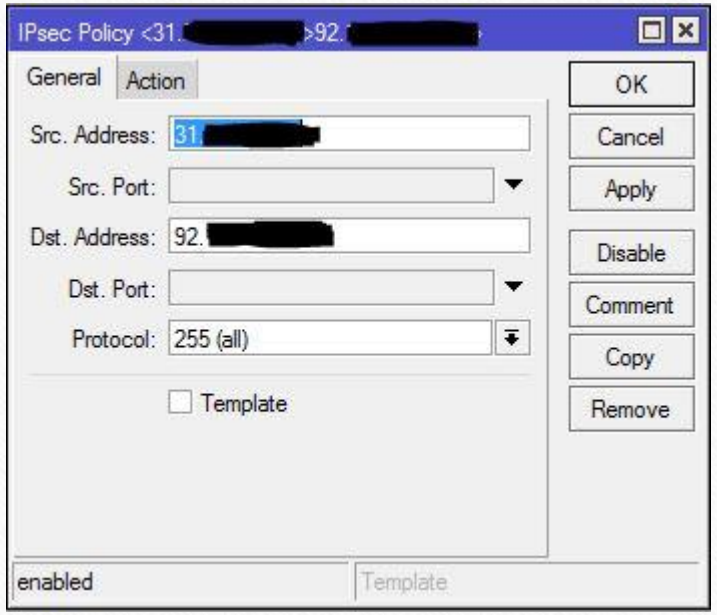
Настройка IPsec Policy основной



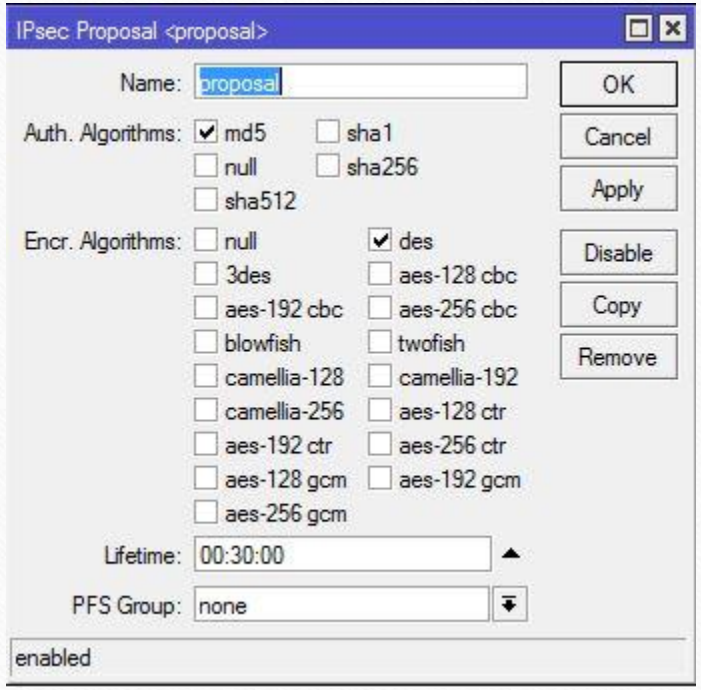


Настройка IPsec policy резервный

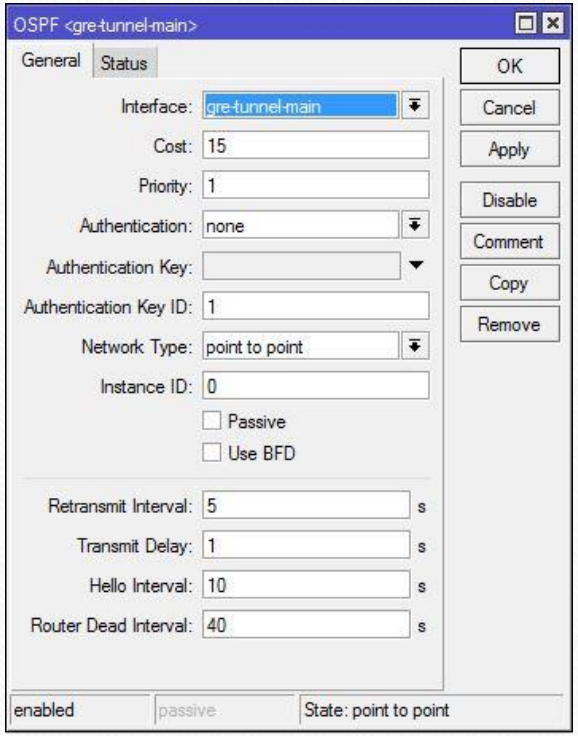


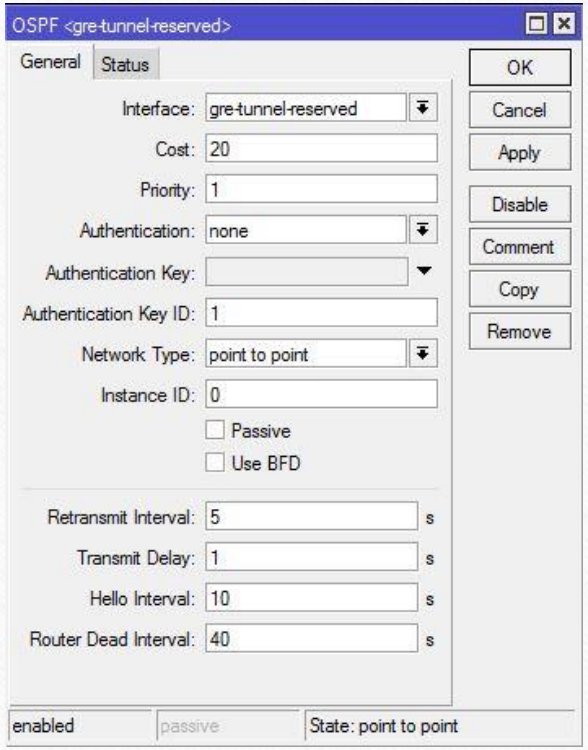


Настройка IPsec Proposal

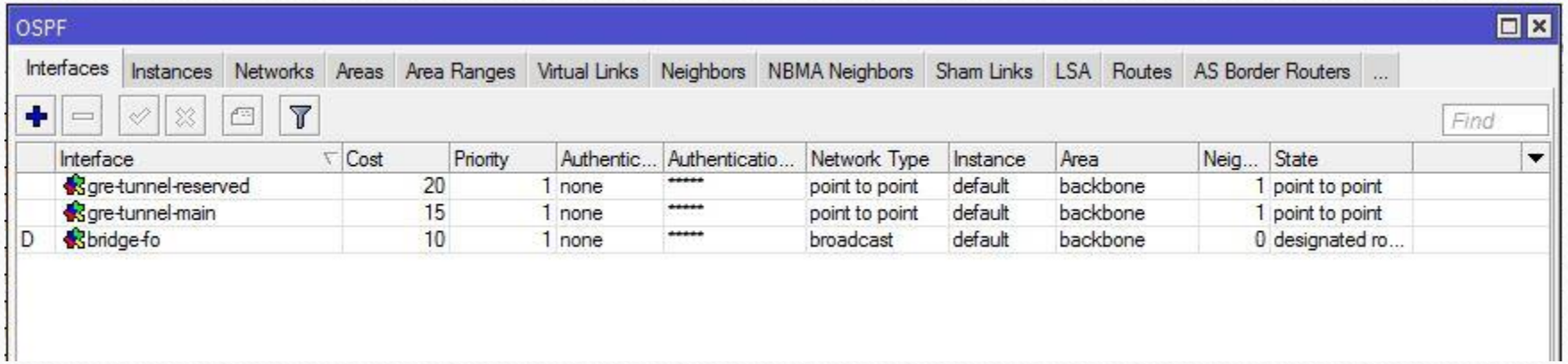


Настройка OSPF ROUTING выбираем интерфейсы, присваиваем стоимость, выбираем тип сети

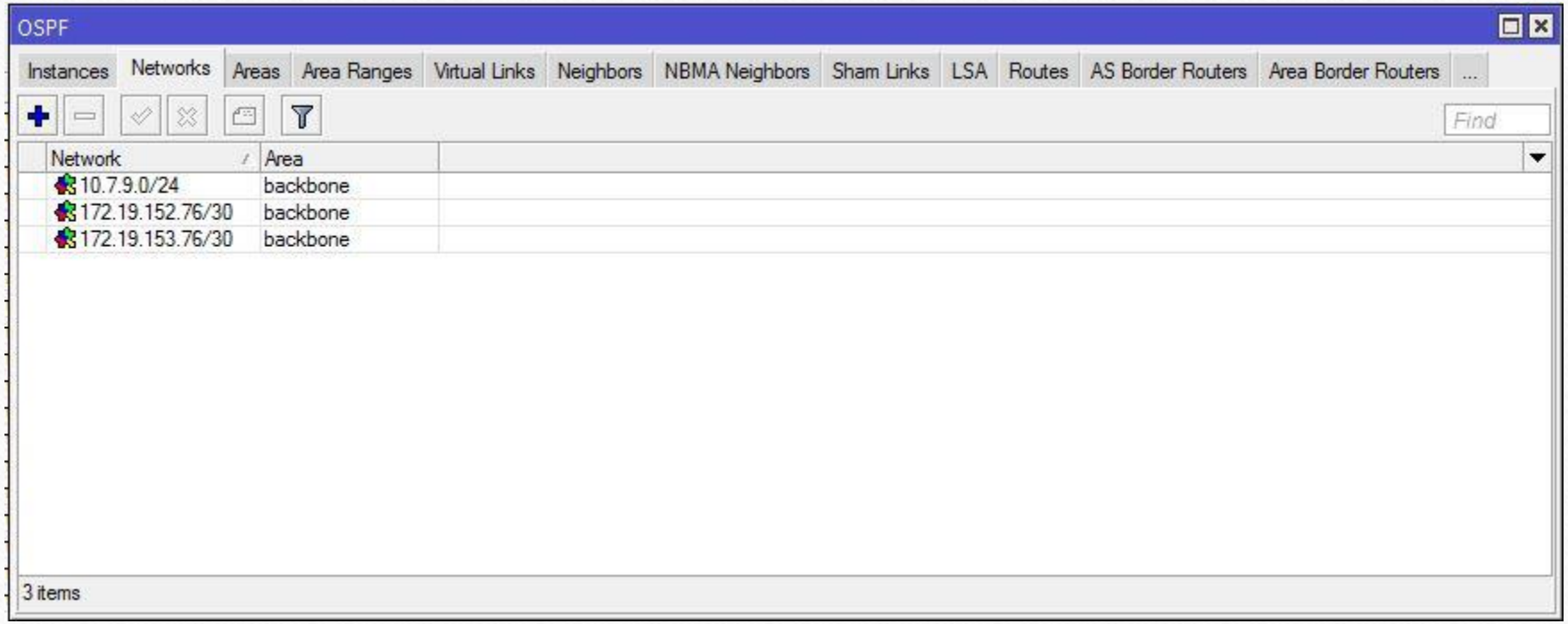




Созданные интерфейсы в OSPF



Создаем Area указываем PTP сети



Анонсированы Router ID

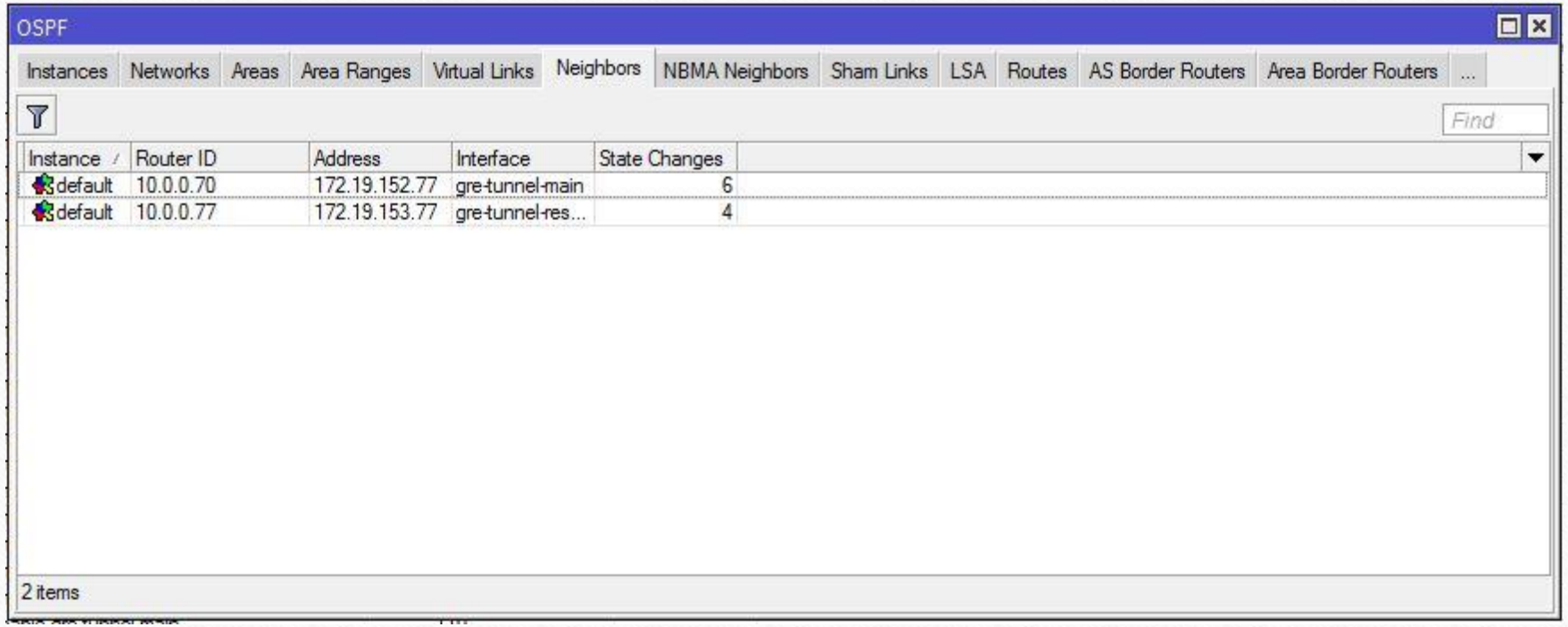
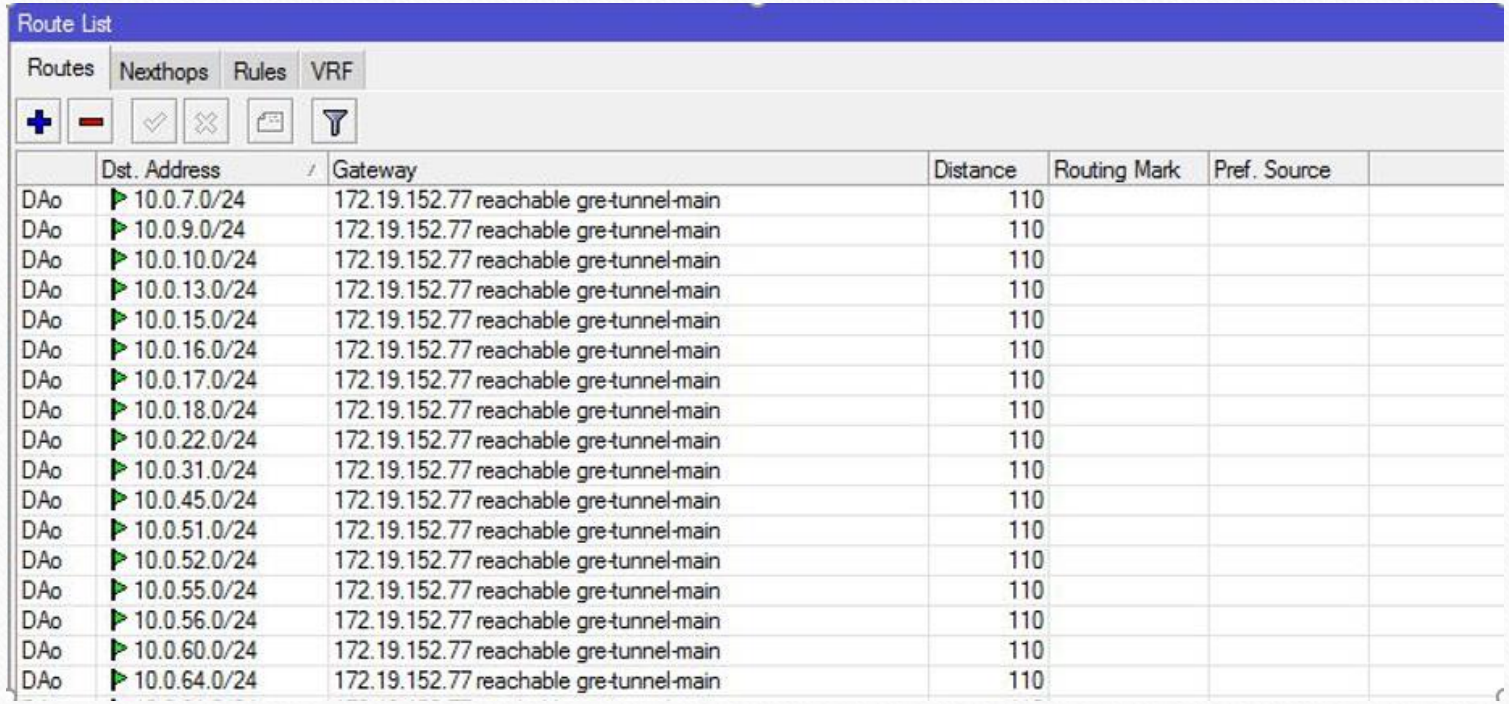
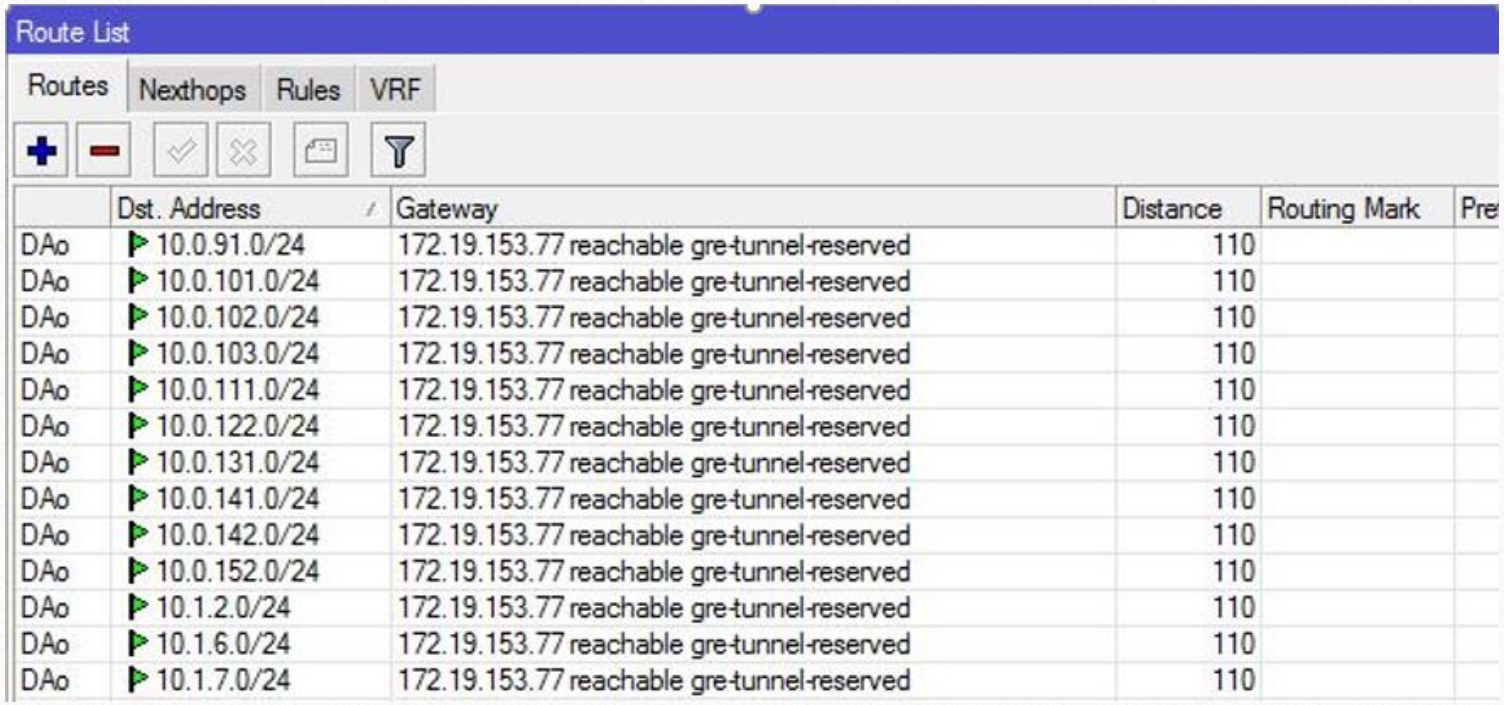


Таблица маршрутизации на основном канале связи



	Dst. Address	Gateway	Distance	Routing Mark	Pref. Source
DAo	10.0.7.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.9.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.10.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.13.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.15.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.16.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.17.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.18.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.22.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.31.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.45.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.51.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.52.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.55.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.56.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.60.0/24	172.19.152.77 reachable gre-tunnel-main	110		
DAo	10.0.64.0/24	172.19.152.77 reachable gre-tunnel-main	110		

Таблица маршрутизации на резервном канале связи



	Dst. Address	Gateway	Distance	Routing Mark	Pre
DAo	10.0.91.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.101.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.102.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.103.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.111.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.122.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.131.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.141.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.142.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.0.152.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.1.2.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.1.6.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		
DAo	10.1.7.0/24	172.19.153.77 reachable gre-tunnel-reserved	110		

Спасибо за внимание !!!