

Лабораторная работа №14

Статическая маршрутизация в Интернете. Настройка

Шуваев С. А.

Российский университет дружбы народов, Москва, Россия

Информация

- Шуваев Сергей Александрович
- студент
- Российский университет дружбы народов
- 1032224269@pfur.ru
- <https://Grinders060050.github.io/ru/>



Настроить взаимодействие через сеть провайдера посредством статической маршрутизации локальной сети организации с сетью основного здания, расположенного в 42-м квартале в Москве, и сетью филиала, расположенного в г. Сочи.

1. Настроить связь между территориями.
2. Настроить оборудование, расположенное в квартале 42 в Москве.
3. Настроить оборудование, расположенное в филиале в г. Сочи.
4. Настроить статическую маршрутизацию между территориями.
5. Настроить статическую маршрутизацию на территории квартала 42 в г. Москве.
6. Настроить NAT на маршрутизаторе msk-donskaya-gw-1.
7. При выполнении работы необходимо учитывать соглашение об именовании.

Выполнение лабораторной работы

Настройка линка между площадками

```
provider-shuvayev-sw-1>
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to do

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

provider-shuvayev-sw-1>en
Password:
provider-shuvayev-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
provider-shuvayev-sw-1(config)#interface f0/3
provider-shuvayev-sw-1(config-if)#switchport mode trunk

provider-shuvayev-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to do

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

provider-shuvayev-sw-1(config-if)#exit
provider-shuvayev-sw-1(config)#interface f0/4
provider-shuvayev-sw-1(config-if)#switchport mode trunk
provider-shuvayev-sw-1(config-if)#exit
provider-shuvayev-sw-1(config)#vlan 5
provider-shuvayev-sw-1(config-vlan)#name q42
provider-shuvayev-sw-1(config-vlan)#exit
provider-shuvayev-sw-1(config)#interface vlan5
provider-shuvayev-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan5, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan5, changed state to up

provider-shuvayev-sw-1(config-if)#no shutdown
provider-shuvayev-sw-1(config-if)#exit
provider-shuvayev-sw-1(config)#vlan 6
provider-shuvayev-sw-1(config-vlan)#name sochi
provider-shuvayev-sw-1(config-vlan)#exit
provider-shuvayev-sw-1(config)#interface vlan6
provider-shuvayev-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan6, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan6, changed state to up

provider-shuvayev-sw-1(config-if)#no shutdown
provider-shuvayev-sw-1(config-if)#exit
provider-shuvayev-sw-1(config)#exit
provider-shuvayev-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
provider-shuvayev-sw-1#
```

Figure 1: Настройка интерфейсов коммутатора provider-shuvayev-sw-1

Настройка линка между площадками

```
User Access Verification

Password:

msk-donskaya-shuvayev-gw-1>en
Password:
msk-donskaya-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-shuvayev-gw-1(config)#interface f0/1.5
msk-donskaya-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/1.5, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.5, changed state to up

msk-donskaya-shuvayev-gw-1(config-subif)#encapsulation dot1Q 5
msk-donskaya-shuvayev-gw-1(config-subif)#ip address 10.128.255.1 255.255.255.252
msk-donskaya-shuvayev-gw-1(config-subif)#description q42
msk-donskaya-shuvayev-gw-1(config-subif)#exit
msk-donskaya-shuvayev-gw-1(config)#interface f0/1.6
msk-donskaya-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/1.6, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.6, changed state to up

msk-donskaya-shuvayev-gw-1(config-subif)#encapsulation dot1Q 6
msk-donskaya-shuvayev-gw-1(config-subif)#ip address 10.128.255.5 255.255.255.252
msk-donskaya-shuvayev-gw-1(config-subif)#description sochi
msk-donskaya-shuvayev-gw-1(config-subif)#exit
msk-donskaya-shuvayev-gw-1(config)#exit
msk-donskaya-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
```

Figure 2: Настройка интерфейсов маршрутизатора msk-donskaya-shuvayev-gw-1

Настройка линка между площадками

```
User Access Verification

Password:

msk-q42-shuvayev-gw-1>en
Password:
msk-q42-shuvayev-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-q42-shuvayev-gw-1(config)#interface f0/1
msk-q42-shuvayev-gw-1(config-if)#no shutdown

msk-q42-shuvayev-gw-1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

msk-q42-shuvayev-gw-1(config-if)#exit
msk-q42-shuvayev-gw-1(config)#interface f0/1.5
msk-q42-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/1.5, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.5, changed state to up

msk-q42-shuvayev-gw-1(config-subif)#encapsulation dot1Q 5
msk-q42-shuvayev-gw-1(config-subif)#ip address 10.128.255.2 255.255.255.252
msk-q42-shuvayev-gw-1(config-subif)#description donskaya
msk-q42-shuvayev-gw-1(config-subif)#exit
msk-q42-shuvayev-gw-1(config)#exit
msk-q42-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
```

Figure 3: Настройка интерфейсов маршрутизатора msk-q42-shuvayev-gw-1

Настройка линка между площадками

```
User Access Verification

Password:

sch-sochi-shuvayev-sw-1>en
Password:
sch-sochi-shuvayev-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-shuvayev-sw-1(config)#interface f0/23
sch-sochi-shuvayev-sw-1(config-if)#switchport mode trunk
sch-sochi-shuvayev-sw-1(config-if)#exit
sch-sochi-shuvayev-sw-1(config)#interface f0/24
sch-sochi-shuvayev-sw-1(config-if)#switchport mode trunk
sch-sochi-shuvayev-sw-1(config-if)#exit
sch-sochi-shuvayev-sw-1(config)#vlan 6
sch-sochi-shuvayev-sw-1(config-vlan)#name sochi
sch-sochi-shuvayev-sw-1(config-vlan)#exit
sch-sochi-shuvayev-sw-1(config)#interface vlan6
sch-sochi-shuvayev-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan6, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan6, changed state to up

sch-sochi-shuvayev-sw-1(config-if)#no shutdown
sch-sochi-shuvayev-sw-1(config-if)#exit
sch-sochi-shuvayev-sw-1(config)#exit
sch-sochi-shuvayev-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
```

Figure 4: Настройка интерфейсов коммутатора sch-sochi-shuvayev-sw-1

Настройка линка между площадками

```
User Access Verification
Password: Password:
Password:

sch-sochi-shuvayev-gw-1>en
Password:
sch-sochi-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-shuvayev-gw-1(config)#interface f0/0
sch-sochi-shuvayev-gw-1(config-if)#no shutdown

sch-sochi-shuvayev-gw-1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

sch-sochi-shuvayev-gw-1(config-if)#exit
sch-sochi-shuvayev-gw-1(config)#interface f0/0.6
sch-sochi-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.6, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.6, changed state to up

sch-sochi-shuvayev-gw-1(config-subif)#encapsulation dot1Q 6
sch-sochi-shuvayev-gw-1(config-subif)#ip address 10.128.255.6 255.255.255.252
sch-sochi-shuvayev-gw-1(config-subif)#description donskaya
sch-sochi-shuvayev-gw-1(config-subif)#exit
sch-sochi-shuvayev-gw-1(config)#exit
sch-sochi-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
```

Figure 5: Настройка интерфейсов маршрутизатора sch-sochi-shuvayev-gw-1

Настройка площадки 42-го квартала

```
msk-q42-shuvayev-gw-1(config-if)#exit
msk-q42-shuvayev-gw-1(config)#interface f0/0.201
msk-q42-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.201, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.201, changed state to up

msk-q42-shuvayev-gw-1(config-subif)#encapsulation dot1Q 201
msk-q42-shuvayev-gw-1(config-subif)#ip address 10.129.0.1 255.255.255.0
msk-q42-shuvayev-gw-1(config-subif)#description q42-main
msk-q42-shuvayev-gw-1(config-subif)#exit
msk-q42-shuvayev-gw-1(config)#interface f1/0
%Invalid interface type and number
msk-q42-shuvayev-gw-1(config)#interface f1/0
%Invalid interface type and number
msk-q42-shuvayev-gw-1(config)#int f1/0
%Invalid interface type and number
msk-q42-shuvayev-gw-1(config)#exit
msk-q42-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-q42-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-shuvayev-gw-1(config)#int f1/0
%Invalid interface type and number
msk-q42-shuvayev-gw-1(config)#int f0/1
msk-q42-shuvayev-gw-1(config-if)#no shutdown
msk-q42-shuvayev-gw-1(config-if)#exit
msk-q42-shuvayev-gw-1(config)#interface f1/0.202
%Invalid interface type and number
msk-q42-shuvayev-gw-1(config)#interface f0/0.202
msk-q42-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.202, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.202, changed state to up

msk-q42-shuvayev-gw-1(config-subif)#encapsulation dot1Q 202
msk-q42-shuvayev-gw-1(config-subif)#ip address 10.129.1.1 255.255.255.0
msk-q42-shuvayev-gw-1(config-subif)#description q42management
msk-q42-shuvayev-gw-1(config-subif)#exit
msk-q42-shuvayev-gw-1(config)#interface f1/0.202
%Invalid interface type and number
msk-q42-shuvayev-gw-1(config)#exit
msk-q42-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
```

Figure 6: Настройка интерфейсов маршрутизатора msk-q42-shuvayev-gw-1

Настройка площадки 42-го квартала

```
User Access Verification
Password:

msk-q42-shuvayev-sw-1>en
Password:
msk-q42-shuvayev-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-shuvayev-sw-1(config)#interface f0/24
msk-q42-shuvayev-sw-1(config-if)#switchport mode trunk
msk-q42-shuvayev-sw-1(config-if)#exit
msk-q42-shuvayev-sw-1(config)#interface f0/1
msk-q42-shuvayev-sw-1(config-if)#switchport mode access
msk-q42-shuvayev-sw-1(config-if)#switchport access vlan 201
% Access VLAN does not exist. Creating vlan 201
msk-q42-shuvayev-sw-1(config-if)#exit
msk-q42-shuvayev-sw-1(config)#vlan 201
msk-q42-shuvayev-sw-1(config-vlan)#name q42-main
msk-q42-shuvayev-sw-1(config-vlan)#exit
msk-q42-shuvayev-sw-1(config)#interface vlan201
msk-q42-shuvayev-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan201, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan201, changed state to up

msk-q42-shuvayev-sw-1(config-if)#no shutdown
msk-q42-shuvayev-sw-1(config-if)#exit
msk-q42-shuvayev-sw-1(config)#exit
msk-q42-shuvayev-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-q42-shuvayev-sw-1#
```

Figure 7: Настройка интерфейсов коммутатора msk-q42-shuvayev-sw-1

Настройка площадки 42-го квартала

```
msk-hostel-shuvayev-gw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

msk-hostel-shuvayev-gw-1(config-if)#exit
msk-hostel-shuvayev-gw-1(config)#interface f0/1
msk-hostel-shuvayev-gw-1(config-if)#switchport trunk encapsulation dot1q
msk-hostel-shuvayev-gw-1(config-if)#switchport mode trunk
msk-hostel-shuvayev-gw-1(config-if)#exit
msk-hostel-shuvayev-gw-1(config)#vlan 202
msk-hostel-shuvayev-gw-1(config-vlan)#name q42-management
msk-hostel-shuvayev-gw-1(config-vlan)#exit
msk-hostel-shuvayev-gw-1(config)#interface vlan202
msk-hostel-shuvayev-gw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan202, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan202, changed state to up

msk-hostel-shuvayev-gw-1(config-if)#no shutdown
msk-hostel-shuvayev-gw-1(config-if)#ip address 10.129.1.2 255.255.255.0
msk-hostel-shuvayev-gw-1(config-if)#exit
msk-hostel-shuvayev-gw-1(config)#vlan 301
msk-hostel-shuvayev-gw-1(config-vlan)#name hostel-main
msk-hostel-shuvayev-gw-1(config-vlan)#exit
msk-hostel-shuvayev-gw-1(config)#interface vlan301
msk-hostel-shuvayev-gw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan301, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan301, changed state to up

msk-hostel-shuvayev-gw-1(config-if)#no shutdown
msk-hostel-shuvayev-gw-1(config-if)#ip address 10.129.128.1 255.255.255.0
msk-hostel-shuvayev-gw-1(config-if)#exit
msk-hostel-shuvayev-gw-1(config)#exit
msk-hostel-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-hostel-shuvayev-gw-1#
```

Figure 8: Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-shuvayev-gw-1

Настройка площадки 42-го квартала

```
Password:
msk-hostel-sw-1>enable
Password:
msk-hostel-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-sw-1(config)#hostname msk-hostel-shuvayev-sw-1
msk-hostel-shuvayev-sw-1(config)#
msk-hostel-shuvayev-sw-1(config)#exit
msk-hostel-shuvayev-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-hostel-shuvayev-sw-1#en
msk-hostel-shuvayev-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-shuvayev-sw-1(config)#interface g0/1
msk-hostel-shuvayev-sw-1(config-if)#switchport mode trunk
msk-hostel-shuvayev-sw-1(config-if)#exit
msk-hostel-shuvayev-sw-1(config)#interface f0/1
msk-hostel-shuvayev-sw-1(config-if)#switchport mode access
msk-hostel-shuvayev-sw-1(config-if)#switchport access vlan 301
% Access VLAN does not exist. Creating vlan 301
msk-hostel-shuvayev-sw-1(config-if)#exit
msk-hostel-shuvayev-sw-1(config)#vlan 301
msk-hostel-shuvayev-sw-1(config-vlan)#name hostel-main
msk-hostel-shuvayev-sw-1(config-vlan)#exit
msk-hostel-shuvayev-sw-1(config)#interface vlan301
msk-hostel-shuvayev-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan301, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan301, changed state

msk-hostel-shuvayev-sw-1(config-if)#no shutdown
msk-hostel-shuvayev-sw-1(config-if)#exit
msk-hostel-shuvayev-sw-1(config)#exit
msk-hostel-shuvayev-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-hostel-shuvayev-sw-1#
```

```
sch-sochi-shuvayev-gw-1#en
sch-sochi-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-shuvayev-gw-1(config)#interface f0/0.401
sch-sochi-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.401, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.401, changed state to up

sch-sochi-shuvayev-gw-1(config-subif)#encapsulation dot1Q 401
sch-sochi-shuvayev-gw-1(config-subif)#ip address 10.130.0.1 255.255.255.0
sch-sochi-shuvayev-gw-1(config-subif)#description sochi-main
sch-sochi-shuvayev-gw-1(config-subif)#exit
sch-sochi-shuvayev-gw-1(config)#interface f0/0.402
sch-sochi-shuvayev-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.402, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.402, changed state to up

sch-sochi-shuvayev-gw-1(config-subif)#encapsulation dot1Q 402
sch-sochi-shuvayev-gw-1(config-subif)#ip address 10.130.1.1 255.255.255.0
sch-sochi-shuvayev-gw-1(config-subif)#description sochi management
sch-sochi-shuvayev-gw-1(config-subif)#exit
sch-sochi-shuvayev-gw-1(config)#exit
sch-sochi-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
sch-sochi-shuvayev-gw-1#
```

Figure 10: Настройка интерфейсов маршрутизатора sch-sochi-shuvayev-gw-1


```
-----
User Access Verification

Password:

sch-sochi-shuvayev-sw-1>en
Password:
sch-sochi-shuvayev-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-shuvayev-sw-1(config)#interface f0/1
sch-sochi-shuvayev-sw-1(config-if)#switchport mode access
sch-sochi-shuvayev-sw-1(config-if)#switchport access vlan 401
% Access VLAN does not exist. Creating vlan 401
sch-sochi-shuvayev-sw-1(config-if)#exit
sch-sochi-shuvayev-sw-1(config)#vlan 401
sch-sochi-shuvayev-sw-1(config-vlan)#name sochi-main
sch-sochi-shuvayev-sw-1(config-vlan)#exit
sch-sochi-shuvayev-sw-1(config)#interface vlan401
sch-sochi-shuvayev-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan401, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan401, changed state to up

sch-sochi-shuvayev-sw-1(config-if)#interface vlan401
sch-sochi-shuvayev-sw-1(config-if)#no shutdown
sch-sochi-shuvayev-sw-1(config-if)#exit
sch-sochi-shuvayev-sw-1(config)#
```

Figure 11: Настройка интерфейсов коммутатора sch-sochi-sw-1

Настройка маршрутизации между площадками

```
msk-donskaya-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-shuvayev-gw-1(config)#ip route 10.129.0.0 255.255.0.0 10.128.255.2
msk-donskaya-shuvayev-gw-1(config)#ip route 10.130.0.0 255.255.0.0 10.128.255.6
msk-donskaya-shuvayev-gw-1(config)#exit
msk-donskaya-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
```

Figure 12: Настройка маршрутизатора msk-donskaya-gw-1

Настройка маршрутизации между площадками

```
msk-q42-shuvayev-gw-1~  
msk-q42-shuvayev-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.128.255.1  
msk-q42-shuvayev-gw-1(config)#exit  
msk-q42-shuvayev-gw-1#  
%SYS-5-CONFIG_I: Configured from console by console  
write m  
Building configuration...  
[OK]
```

Figure 13: Настройка маршрутизатора msk-q42-gw-1

Настройка маршрутизации между площадками

```
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-shuvayev-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.128.255.5
sch-sochi-shuvayev-gw-1(config)#exit
sch-sochi-shuvayev-gw-1#
%SYS-S-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
sch-sochi-shuvayev-gw-1#
```

Figure 14: Настройка маршрутизатора sch-sochi-gw-1

```
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-shuvayev-gw-1(config)#ip route 10.129.128.0 255.255.128.0 10.129.1.2
msk-q42-shuvayev-gw-1(config)#exit
msk-q42-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-q42-shuvayev-gw-1#
```

Figure 15: Настройка маршрутизатора msk-q42-gw-1

Настройка маршрутизации на 42 квартале

```
User Access Verification

Password:

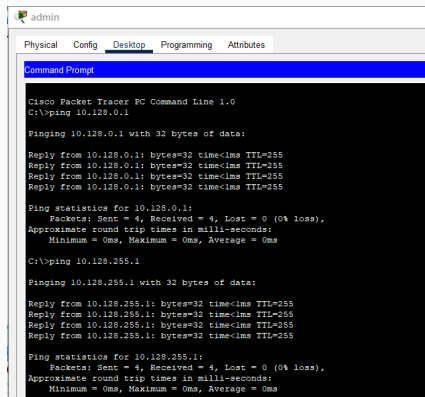
msk-hostel-shuvayev-gw-1>en
Password:
msk-hostel-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-shuvayev-gw-1(config)#ip routing
msk-hostel-shuvayev-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.129.1.1
msk-hostel-shuvayev-gw-1(config)#exit
msk-hostel-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-hostel-shuvayev-gw-1#
```

Figure 16: Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-gw-1

Настройка NAT на маршрутизаторе msk-donskaya-gw-1

```
msk-donskaya-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-shuvayev-gw-1(config)#ip route 10.128.0.0 255.255.0.0 10.128.255.2
msk-donskaya-shuvayev-gw-1(config)#ip route 10.130.0.0 255.255.0.0 10.128.255.6
msk-donskaya-shuvayev-gw-1(config)#exit
msk-donskaya-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-donskaya-shuvayev-gw-1#en
msk-donskaya-shuvayev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-shuvayev-gw-1(config)#interface f0/1.5
msk-donskaya-shuvayev-gw-1(config-subif)#ip nat inside
msk-donskaya-shuvayev-gw-1(config-subif)#exit
msk-donskaya-shuvayev-gw-1(config)#interface f0/1.6
msk-donskaya-shuvayev-gw-1(config-subif)#ip nat inside
msk-donskaya-shuvayev-gw-1(config-subif)#exit
msk-donskaya-shuvayev-gw-1(config)#ip access-list extended nat-inet
msk-donskaya-shuvayev-gw-1(config-ext-nacl)#remark q42
msk-donskaya-shuvayev-gw-1(config-ext-nacl)#permit ip host 10.129.0.200 any
msk-donskaya-shuvayev-gw-1(config-ext-nacl)#permit ip host 10.129.128.200 any
msk-donskaya-shuvayev-gw-1(config-ext-nacl)#remark sochi
msk-donskaya-shuvayev-gw-1(config-ext-nacl)#permit ip host 10.130.0.200 any
msk-donskaya-shuvayev-gw-1(config-ext-nacl)#exit
msk-donskaya-shuvayev-gw-1(config)#exit
msk-donskaya-shuvayev-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write m
Building configuration...
[OK]
msk-donskaya-shuvayev-gw-1#
```

Figure 17: Настройка NAT на маршрутизаторе msk-donskaya-gw-1



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device named 'admin'. The 'Desktop' tab is selected. The command prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.128.0.1

Pinging 10.128.0.1 with 32 bytes of data:

Reply from 10.128.0.1: bytes=32 time<1ms TTL=255
Reply from 10.128.0.1: bytes=32 time<1ms TTL=255
Reply from 10.128.0.1: bytes=32 time<1ms TTL=255
Reply from 10.128.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 10.128.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.128.255.1

Pinging 10.128.255.1 with 32 bytes of data:

Reply from 10.128.255.1: bytes=32 time<1ms TTL=255
Reply from 10.128.255.1: bytes=32 time<1ms TTL=255
Reply from 10.128.255.1: bytes=32 time<1ms TTL=255
Reply from 10.128.255.1: bytes=32 time<1ms TTL=255

Ping statistics for 10.128.255.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Figure 18: Проверка доступа администратора с Донской к маршрутизирующим устройствам


```
C:\>ping 192.0.2.14

Pinging 192.0.2.14 with 32 bytes of data:

Reply from 192.0.2.14: bytes=32 time<1ms TTL=126
Reply from 192.0.2.14: bytes=32 time=1ms TTL=126
Reply from 192.0.2.14: bytes=32 time<1ms TTL=126
Reply from 192.0.2.14: bytes=32 time<1ms TTL=126

Ping statistics for 192.0.2.14:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

Figure 19: Проверка доступа в Интернет

В результате выполнения лабораторной были приобретены практические навыки по настройке взаимодействия через сеть провайдера посредством статической маршрутизации локальной сети организации с сетью основного здания, расположенного в 42-м квартале в Москве, и сетью филиала, расположенного в г. Сочи.