

# Лабораторная работа 14

## Статическая маршрутизация в Интернете. Настройка

---

Ланцова Я. И.

Российский университет дружбы народов, Москва, Россия

# Информация

---

- Ланцова Яна Игоревна
- студентка
- Российский университет дружбы народов

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

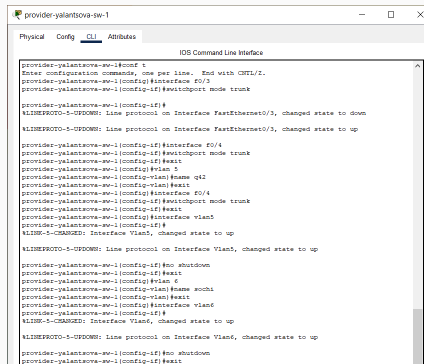
---

## Настройка линка между площадками

---



# Выполнение лабораторной работы



```
provider-yalantsova-sw-1#conf t
Enter configuration commands, one per line. End with CTRL/Z.
provider-yalantsova-sw-1(config)#interface f0/3
provider-yalantsova-sw-1(config-if)#switchport mode trunk

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

provider-yalantsova-sw-1(config-if)#interface f0/4
provider-yalantsova-sw-1(config-if)#switchport mode trunk
provider-yalantsova-sw-1(config-if)#exit
provider-yalantsova-sw-1(config)#vlan 5
provider-yalantsova-sw-1(config-vlan)#name q42
provider-yalantsova-sw-1(config-vlan)#exit
provider-yalantsova-sw-1(config)#interface f0/4
provider-yalantsova-sw-1(config-if)#switchport mode trunk
provider-yalantsova-sw-1(config-if)#exit
provider-yalantsova-sw-1(config)#interface vlan5
provider-yalantsova-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-yalantsova-sw-1(config-if)#no shutdown
provider-yalantsova-sw-1(config-if)#exit
provider-yalantsova-sw-1(config)#vlan 6
provider-yalantsova-sw-1(config-vlan)#name rochi
provider-yalantsova-sw-1(config-vlan)#exit
provider-yalantsova-sw-1(config)#interface vlan6
provider-yalantsova-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-yalantsova-sw-1(config-if)#no shutdown
provider-yalantsova-sw-1(config-if)#exit
```

Рис. 1: Настройка интерфейсов коммутатора provider-yalantsova-sw-1

# Выполнение лабораторной работы

```
msk-donskaya-yalantsova-gw-1>en
Password:
msk-donskaya-yalantsova-gw-1#interface f0/1.5
^
% Invalid input detected at '^' marker.

msk-donskaya-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-yalantsova-gw-1(config)#interface f0/1.5
msk-donskaya-yalantsova-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-yalantsova-gw-1(config-subif)#encapsulation dot1Q 5
msk-donskaya-yalantsova-gw-1(config-subif)#ip address 10.128.255.1 255.255.255.252
msk-donskaya-yalantsova-gw-1(config-subif)#description q42
msk-donskaya-yalantsova-gw-1(config-subif)#exit
msk-donskaya-yalantsova-gw-1(config)#interface f0/1.6
msk-donskaya-yalantsova-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-yalantsova-gw-1(config-subif)#encapsulation dot1Q 6
msk-donskaya-yalantsova-gw-1(config-subif)#ip address 10.128.255.5 255.255.255.252
msk-donskaya-yalantsova-gw-1(config-subif)#description sochi
msk-donskaya-yalantsova-gw-1(config-subif)#exit
```

**Рис. 2:** Настройка интерфейсов маршрутизатора msk-donskaya-yalantsova-gw-1

# Выполнение лабораторной работы

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

msk-q42-yalantsova-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-yalantsova-gw-1(config-if)#exit
msk-q42-yalantsova-gw-1(config)#interface f0/1.5
msk-q42-yalantsova-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-yalantsova-gw-1(config-subif)#encapsulation dot1Q 5
msk-q42-yalantsova-gw-1(config-subif)#ip address 10.128.255.2 255.255.255.252
msk-q42-yalantsova-gw-1(config-subif)#description donskaya
msk-q42-yalantsova-gw-1(config-subif)#exit
```

**Рис. 3:** Настройка интерфейсов маршрутизатора msk-q42-yalantsova-gw-1

# Выполнение лабораторной работы

```
sch-sochi-yalantsova-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-yalantsova-sw-1(config)#interface f0/23
sch-sochi-yalantsova-sw-1(config-if)#switchport mode trunk
sch-sochi-yalantsova-sw-1(config-if)#exit
sch-sochi-yalantsova-sw-1(config)#interface f0/24
sch-sochi-yalantsova-sw-1(config-if)#switchport mode trunk
sch-sochi-yalantsova-sw-1(config-if)#exit
sch-sochi-yalantsova-sw-1(config)#vlan 6
sch-sochi-yalantsova-sw-1(config-vlan)#name sochi
sch-sochi-yalantsova-sw-1(config-vlan)#exit
sch-sochi-yalantsova-sw-1(config)#interface vlan6
sch-sochi-yalantsova-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-yalantsova-sw-1(config-if)#no shutdown
sch-sochi-yalantsova-sw-1(config-if)#exit
```

**Рис. 4:** Настройка интерфейсов коммутатора sch-sochi-yalantsova-sw-1

# Выполнение лабораторной работы

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

sch-sochi-yalantsova-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-yalantsova-gw-1(config-if)#exit
sch-sochi-yalantsova-gw-1(config)#interface f0/0.6
sch-sochi-yalantsova-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-yalantsova-gw-1(config-subif)#encapsulation dot1Q 6
sch-sochi-yalantsova-gw-1(config-subif)#ip address 10.128.255.6 255.255.255.252
sch-sochi-yalantsova-gw-1(config-subif)#description donskaya
sch-sochi-yalantsova-gw-1(config-subif)#exit
```

**Рис. 5:** Настройка интерфейсов маршрутизатора sch-sochi-yalantsova-gw-1

## Настройка площадки 42-го квартала

---

# Выполнение лабораторной работы

```
msk-q42-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-yalantsova-gw-1(config)#interface f0/0
msk-q42-yalantsova-gw-1(config-if)#no shutdown

msk-q42-yalantsova-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

msk-q42-yalantsova-gw-1(config-if)#exit
msk-q42-yalantsova-gw-1(config)#interface f0/0.201
msk-q42-yalantsova-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-yalantsova-gw-1(config-subif)#encapsulation dot1Q 201
msk-q42-yalantsova-gw-1(config-subif)#ip address 10.129.0.1 255.255.255.0
msk-q42-yalantsova-gw-1(config-subif)#description q42main
msk-q42-yalantsova-gw-1(config-subif)#exit
msk-q42-yalantsova-gw-1(config)#interface f1/0
msk-q42-yalantsova-gw-1(config-if)#no shutdown
msk-q42-yalantsova-gw-1(config-if)#exit
msk-q42-yalantsova-gw-1(config)#interface f1/0.202
msk-q42-yalantsova-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet1/0.202, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0.202, changed state to up

msk-q42-yalantsova-gw-1(config-subif)#encapsulation dot1Q 202
msk-q42-yalantsova-gw-1(config-subif)#ip address 10.129.1.1 255.255.255.0
msk-q42-yalantsova-gw-1(config-subif)#description q42management
msk-q42-yalantsova-gw-1(config-subif)#exit
```

**Рис. 6:** Настройка интерфейсов маршрутизатора msk-q42-yalantsova-gw-1

# Выполнение лабораторной работы

```
msk-q42-yalantsova-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-yalantsova-sw-1(config)#interface f0/24
msk-q42-yalantsova-sw-1(config-if)#switchport mode trunk
msk-q42-yalantsova-sw-1(config-if)#exit
msk-q42-yalantsova-sw-1(config)#interface f0/1
msk-q42-yalantsova-sw-1(config-if)#switchport mode access
msk-q42-yalantsova-sw-1(config-if)#switchport access vlan 201
% Access VLAN does not exist. Creating vlan 201
msk-q42-yalantsova-sw-1(config-if)#exit
msk-q42-yalantsova-sw-1(config)#vlan 201
msk-q42-yalantsova-sw-1(config-vlan)#name q42main
msk-q42-yalantsova-sw-1(config-vlan)#exit
msk-q42-yalantsova-sw-1(config)#interface vlan201
msk-q42-yalantsova-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-yalantsova-sw-1(config-if)#no shutdown
```

**Рис. 7:** Настройка интерфейсов коммутатора msk-q42-yalantsova-sw-1



# Выполнение лабораторной работы

```
msk-hostel-yalantsova-gw-1(config)#interface g0/1
msk-hostel-yalantsova-gw-1(config-if)#switchport trunk encapsulation dot1q
msk-hostel-yalantsova-gw-1(config-if)#switchport mode trunk

msk-hostel-yalantsova-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-yalantsova-gw-1(config-if)#exit
msk-hostel-yalantsova-gw-1(config)#interface f0/1
msk-hostel-yalantsova-gw-1(config-if)#switchport trunk encapsulation dot1q
msk-hostel-yalantsova-gw-1(config-if)#switchport mode trunk

msk-hostel-yalantsova-gw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

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

msk-hostel-yalantsova-gw-1(config-if)#exit
msk-hostel-yalantsova-gw-1(config)#vlan 202
msk-hostel-yalantsova-gw-1(config-vlan)#name q42-management
msk-hostel-yalantsova-gw-1(config-vlan)#exit
msk-hostel-yalantsova-gw-1(config)#interface vlan202
msk-hostel-yalantsova-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-yalantsova-gw-1(config-if)#no shutdown
msk-hostel-yalantsova-gw-1(config-if)#
msk-hostel-yalantsova-gw-1(config-if)#ip address 10.129.1.2 255.255.255.0
msk-hostel-yalantsova-gw-1(config-if)#exit
msk-hostel-yalantsova-gw-1(config)#vlan 301
msk-hostel-yalantsova-gw-1(config-vlan)#name hostel main
^
% Invalid input detected at '^' marker.

msk-hostel-yalantsova-gw-1(config-vlan)#name hostel-main
msk-hostel-yalantsova-gw-1(config-vlan)#exit
msk-hostel-yalantsova-gw-1(config)#interface vlan301
msk-hostel-yalantsova-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-yalantsova-gw-1(config-if)#no shutdown
msk-hostel-yalantsova-gw-1(config-if)#ip address 10.129.128.1 255.255.255.0
msk-hostel-yalantsova-gw-1(config-if)#exit
```

**Рис. 8:** Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-yalantsova-gw-1

# Выполнение лабораторной работы

```
msk-hostel-yalantsova-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-yalantsova-sw-1(config)#interface g0/1
msk-hostel-yalantsova-sw-1(config-if)#switchport mode trunk
msk-hostel-yalantsova-sw-1(config-if)#exit
msk-hostel-yalantsova-sw-1(config)#interface f0/1
msk-hostel-yalantsova-sw-1(config-if)#switchport mode access
msk-hostel-yalantsova-sw-1(config-if)#switchport access vlan 301
% Access VLAN does not exist. Creating vlan 301
msk-hostel-yalantsova-sw-1(config-if)#exit
msk-hostel-yalantsova-sw-1(config)#vlan 301
msk-hostel-yalantsova-sw-1(config-vlan)#name hostel-main
msk-hostel-yalantsova-sw-1(config-vlan)#exit
msk-hostel-yalantsova-sw-1(config)#interface vlan301
msk-hostel-yalantsova-sw-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-yalantsova-sw-1(config-if)#no shutdown
msk-hostel-yalantsova-sw-1(config-if)#exit
```

**Рис. 9:** Настройка интерфейсов коммутатора msk-hostel-yalantsova-sw-1

## Настройка площадки в Сочи

---

# Выполнение лабораторной работы

```
sch-sochi-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-yalantsova-gw-1(config)#interface f0/0.401
sch-sochi-yalantsova-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-yalantsova-gw-1(config-subif)#encapsulation dot1Q 401
sch-sochi-yalantsova-gw-1(config-subif)#ip address 10.130.0.1 255.255.255.0
sch-sochi-yalantsova-gw-1(config-subif)#description sochi main
sch-sochi-yalantsova-gw-1(config-subif)#exit
sch-sochi-yalantsova-gw-1(config)#interface f0/0.402
sch-sochi-yalantsova-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-yalantsova-gw-1(config-subif)#encapsulation dot1Q 402
sch-sochi-yalantsova-gw-1(config-subif)#ip address 10.130.1.1 255.255.255.0
sch-sochi-yalantsova-gw-1(config-subif)#description sochi-management
sch-sochi-yalantsova-gw-1(config-subif)#exit
sch-sochi-yalantsova-gw-1(config)#exit
```

**Рис. 10:** Настройка интерфейсов маршрутизатора sch-sochi-yalantsova-gw-1

# Выполнение лабораторной работы

```
sch-sochi-yalantsova-sw-1>en
Password:
sch-sochi-yalantsova-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-yalantsova-sw-1(config)#interface f0/1
sch-sochi-yalantsova-sw-1(config-if)#switchport mode access
sch-sochi-yalantsova-sw-1(config-if)#switchport access vlan 401
% Access VLAN does not exist. Creating vlan 401
sch-sochi-yalantsova-sw-1(config-if)#exit
^
% Invalid input detected at '^' marker.

sch-sochi-yalantsova-sw-1(config-if)#exit
sch-sochi-yalantsova-sw-1(config)#vlan 401
sch-sochi-yalantsova-sw-1(config-vlan)#name sochi main
^
% Invalid input detected at '^' marker.

sch-sochi-yalantsova-sw-1(config-vlan)#name sochi-main
sch-sochi-yalantsova-sw-1(config-vlan)#exit
sch-sochi-yalantsova-sw-1(config)#interface vlan401
sch-sochi-yalantsova-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-yalantsova-sw-1(config-if)#no shutdown
sch-sochi-yalantsova-sw-1(config-if)#exit
```

Рис. 11: Настройка интерфейсов коммутатора sch-sochi-yalantsova-sw-1

## Настройка маршрутизации между площадками

---

```
msk-donskaya-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-yalantsova-gw-1(config)#ip route 10.129.0.0 255.255.0.0 10.128.255.2
msk-donskaya-yalantsova-gw-1(config)#ip route 10.130.0.0 255.255.0.0 10.128.255.6
msk-donskaya-yalantsova-gw-1(config)#exit
```

**Рис. 12:** Настройка маршрутизатора msk-donskaya-gw-1

```
msk-q42-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-yalantsova-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.128.255.1
msk-q42-yalantsova-gw-1(config)#exit
msk-q42-yalantsova-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-q42-yalantsova-gw-1#wr mem
Building configuration...
[OK]
```

**Рис. 13:** Настройка маршрутизатора msk-q42-gw-1



```
sch-sochi-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-yalantsova-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.128.255.5
sch-sochi-yalantsova-gw-1(config)#exit
sch-sochi-yalantsova-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

**Рис. 14:** Настройка маршрутизатора sch-sochi-gw-1

## Настройка маршрутизации на 42 квартале

---

```
msk-q42-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-yalantsova-gw-1(config)#ip route 10.129.128.0 255.255.128.0 10.129.1.2
msk-q42-yalantsova-gw-1(config)#exit
msk-q42-yalantsova-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-q42-yalantsova-gw-1#wr mem
Building configuration...
```

**Рис. 15:** Настройка маршрутизатора msk-q42-gw-1

```
msk-hostel-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-yalantsova-gw-1(config)#ip routing
msk-hostel-yalantsova-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.129.1.1
msk-hostel-yalantsova-gw-1(config)#exit
msk-hostel-yalantsova-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

**Рис. 16:** Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-gw-1

# Настройка NAT на маршрутизаторе msk-donskaya-gw-1

---

# Выполнение лабораторной работы

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

msk-donskaya-yalantsova-gw-1#wr mem
Building configuration...
[OK]
msk-donskaya-yalantsova-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-yalantsova-gw-1(config)#
msk-donskaya-yalantsova-gw-1(config)#interface f0/1.5
msk-donskaya-yalantsova-gw-1(config-subif)#ip nat inside
msk-donskaya-yalantsova-gw-1(config-subif)#exit
msk-donskaya-yalantsova-gw-1(config)#interface f0/1.6
msk-donskaya-yalantsova-gw-1(config-subif)#ip nat inside
msk-donskaya-yalantsova-gw-1(config-subif)#exit
msk-donskaya-yalantsova-gw-1(config)#ip access list extended natinet
msk-donskaya-yalantsova-gw-1(config)#ip access list extended natinet
^
% Invalid input detected at '^' marker.

msk-donskaya-yalantsova-gw-1(config)#ip access-list extended nat-inet
msk-donskaya-yalantsova-gw-1(config-ext-nacl)#remark q42
msk-donskaya-yalantsova-gw-1(config-ext-nacl)#permit ip host 10.129.0.200 any
msk-donskaya-yalantsova-gw-1(config-ext-nacl)#permit ip host 10.129.128.200 any
msk-donskaya-yalantsova-gw-1(config-ext-nacl)#remark sochi
msk-donskaya-yalantsova-gw-1(config-ext-nacl)#permit ip host 10.130.0.200 any
msk-donskaya-yalantsova-gw-1(config-ext-nacl)#exit
```

Рис. 17: Настройка NAT на маршрутизаторе msk-donskaya-gw-1

## Проверка настроек

---

# Выполнение лабораторной работы

```
msk-donskaya-yalantsova-gw-l#ping 10.128.255.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.128.255.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

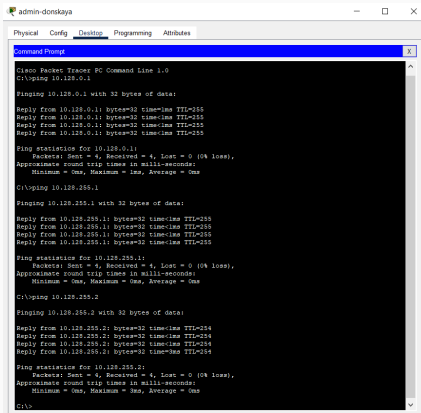
msk-donskaya-yalantsova-gw-l#ping 10.128.255.6

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.128.255.6, timeout is 2 seconds:
!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/1 ms
```

**Рис. 18:** Проверка связи между маршрутизаторами



# Выполнение лабораторной работы



```
admin-donskaya
Physical Config Desktop Programming Attributes
Command Prompt
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 = 1ms, 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

C:\>ping 10.128.255.2

Pinging 10.128.255.2 with 32 bytes of data:

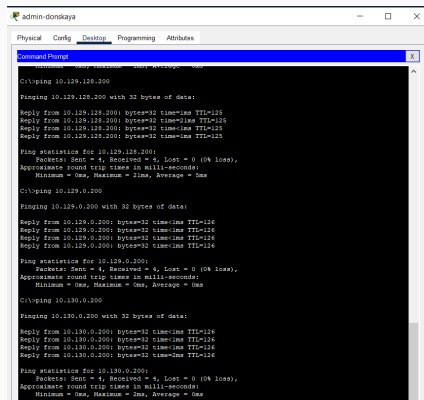
Reply from 10.128.255.2: bytes=32 time=1ms TTL=254
Reply from 10.128.255.2: bytes=32 time=1ms TTL=254
Reply from 10.128.255.2: bytes=32 time=1ms TTL=254
Reply from 10.128.255.2: bytes=32 time=1ms TTL=254

Ping statistics for 10.128.255.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 0ms

C:\>
```

**Рис. 19:** Проверка доступа администратора с Донской к маршрутизирующим устройствам

# Выполнение лабораторной работы



```
admin-donskaya
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ping 10.129.128.200

Pinging 10.129.128.200 with 32 bytes of data:

Reply from 10.129.128.200: bytes=32 time=1ms TTL=125
Reply from 10.129.128.200: bytes=32 time=2ms TTL=125
Reply from 10.129.128.200: bytes=32 time=1ms TTL=125
Reply from 10.129.128.200: bytes=32 time=1ms TTL=125

Ping statistics for 10.129.128.200:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\>ping 10.129.0.200

Pinging 10.129.0.200 with 32 bytes of data:

Reply from 10.129.0.200: bytes=32 time=1ms TTL=126
Reply from 10.129.0.200: bytes=32 time=1ms TTL=126
Reply from 10.129.0.200: bytes=32 time=1ms TTL=126
Reply from 10.129.0.200: bytes=32 time=1ms TTL=126

Ping statistics for 10.129.0.200:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.130.0.200

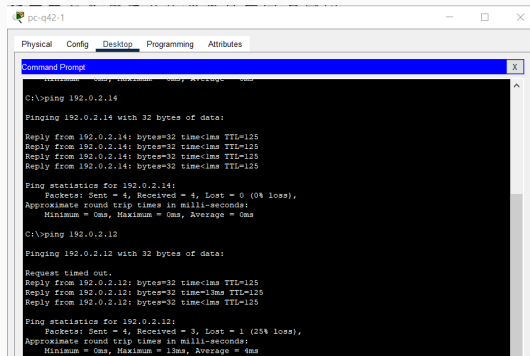
Pinging 10.130.0.200 with 32 bytes of data:

Reply from 10.130.0.200: bytes=32 time=1ms TTL=126
Reply from 10.130.0.200: bytes=32 time=1ms TTL=126
Reply from 10.130.0.200: bytes=32 time=1ms TTL=126
Reply from 10.130.0.200: bytes=32 time=2ms TTL=126

Ping statistics for 10.130.0.200:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

Рис. 20: Проверка доступа администратора с Донской к оконечным устройствам

# Выполнение лабораторной работы



```
pc-q42-1
Physical Config Desktop Programming Attributes
Command Prompt
Minimum = 0ms, Maximum = 0ms, Average = 0ms

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=125
Reply from 192.0.2.14: bytes=32 time<1ms TTL=125
Reply from 192.0.2.14: bytes=32 time<1ms TTL=125
Reply from 192.0.2.14: bytes=32 time<1ms TTL=125

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 = 0ms, Average = 0ms

C:\>ping 192.0.2.12

Pinging 192.0.2.12 with 32 bytes of data:

Request timed out.
Reply from 192.0.2.12: bytes=32 time<1ms TTL=125
Reply from 192.0.2.12: bytes=32 time=13ms TTL=125
Reply from 192.0.2.12: bytes=32 time<1ms TTL=125

Ping statistics for 192.0.2.12:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 4ms
```

Рис. 21: Проверка доступа в Интернет

## Выводы

---

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.