

Лабораторная работа №14

Статическая маршрутизация в Интернете. Настройка

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Информация

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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.

Настроим интерфейсы маршрутизатора provider-cahanqirov-gw-1: поднимем и сделаем транковыми интерфейсы f0/3 и f0/4 (рис. ??).

Выполнение лабораторной работы

```
provider-cahanqirov-sw-1
Physical Config CLI Attributes

Password:
provider-cahanqirov-sw-1#interface f0/3
^
% Invalid input detected at '^' marker.

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

provider-cahanqirov-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-cahanqirov-sw-1(config-if)#exit
provider-cahanqirov-sw-1(config)#interface f0/4
provider-cahanqirov-sw-1(config-if)#switchport mode trunk
provider-cahanqirov-sw-1(config-if)#exit
provider-cahanqirov-sw-1(config)#int vlan5
provider-cahanqirov-sw-1(config-if)#name q42
^
% Invalid input detected at '^' marker.

provider-cahanqirov-sw-1(config-if)#exit
provider-cahanqirov-sw-1(config)#vlan5
^
% Invalid input detected at '^' marker.

provider-cahanqirov-sw-1(config)#vlan 5
provider-cahanqirov-sw-1(config-vlan)#
%LINK-5-CHANGED: Interface Vlan5, changed state to up

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

provider-cahanqirov-sw-1(config-vlan)#name q42
provider-cahanqirov-sw-1(config-vlan)#exit
provider-cahanqirov-sw-1(config)#interface vlan5
provider-cahanqirov-sw-1(config-if)#no shutdown
provider-cahanqirov-sw-1(config-if)#exit
provider-cahanqirov-sw-1(config)#vlan 6
provider-cahanqirov-sw-1(config-vlan)#name sochi
provider-cahanqirov-sw-1(config-vlan)#exit
provider-cahanqirov-sw-1(config)#interface vlan6
provider-cahanqirov-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-cahanqirov-sw-1(config-if)#no shutdown
provider-cahanqirov-sw-1(config-if)#exit
provider-cahanqirov-sw-1(config-if)#exit
provider-cahanqirov-sw-1(config)#
```


Выполнение лабораторной работы

```
msk-donskaya-cahanqirov-gw-1>en
Password:
msk-donskaya-cahanqirov-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-cahanqirov-gw-1(config)#interface f0/1.5
msk-donskaya-cahanqirov-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-cahanqirov-gw-1(config-subif)#encapsulation dot1Q 5
msk-donskaya-cahanqirov-gw-1(config-subif)#ip address 10.128.255.1 255.255.255.252
msk-donskaya-cahanqirov-gw-1(config-subif)#description q42
msk-donskaya-cahanqirov-gw-1(config-subif)#exit
msk-donskaya-cahanqirov-gw-1(config)#interface f0/1.6
msk-donskaya-cahanqirov-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-cahanqirov-gw-1(config-subif)#encapsulation dot1Q 6
msk-donskaya-cahanqirov-gw-1(config-subif)#ip address 10.128.255.5 255.255.255.252
msk-donskaya-cahanqirov-gw-1(config-subif)#description sochi
msk-donskaya-cahanqirov-gw-1(config-subif)#exit
msk-donskaya-cahanqirov-gw-1(config)#exit
msk-donskaya-cahanqirov-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

Выполнение лабораторной работы

```
mks-q42-cahanqirov-gw-1>en
Password:
mks-q42-cahanqirov-gw-1#interface f0/1
      ^
% Invalid input detected at '^' marker.

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

mks-q42-cahanqirov-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

mks-q42-cahanqirov-gw-1(config-if)#exit
mks-q42-cahanqirov-gw-1(config)#interface f0/1.5
mks-q42-cahanqirov-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

mks-q42-cahanqirov-gw-1(config-subif)#encapsulation dot1Q 5
mks-q42-cahanqirov-gw-1(config-subif)#ip address 10.128.255.2 255.255.255.252
mks-q42-cahanqirov-gw-1(config-subif)#description donskaya
mks-q42-cahanqirov-gw-1(config-subif)#exit
mks-q42-cahanqirov-gw-1(config)#exit
mks-q42-cahanqirov-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

mks-q42-cahanqirov-gw-1#wr m
Building configuration...
[OK]
mks-q42-cahanqirov-gw-1#
```

Выполнение лабораторной работы

```
sch-sochi-cahanqirov-sw-1>en
Password:
sch-sochi-cahanqirov-sw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
sch-sochi-cahanqirov-sw-1(config)#interface f0/23
sch-sochi-cahanqirov-sw-1(config-if)#switchport mode trunk
sch-sochi-cahanqirov-sw-1(config-if)#exit
sch-sochi-cahanqirov-sw-1(config)#interface f0/24
sch-sochi-cahanqirov-sw-1(config-if)#switchport mode trunk
sch-sochi-cahanqirov-sw-1(config-if)#exit
sch-sochi-cahanqirov-sw-1(config)#vlan 6
sch-sochi-cahanqirov-sw-1(config-vlan)#name soch
sch-sochi-cahanqirov-sw-1(config-vlan)#exit
sch-sochi-cahanqirov-sw-1(config)#interface vlan6
sch-sochi-cahanqirov-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-cahanqirov-sw-1(config-if)#no shutdown
sch-sochi-cahanqirov-sw-1(config-if)#exit
sch-sochi-cahanqirov-sw-1(config)#^Z
sch-sochi-cahanqirov-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

sch-sochi-cahanqirov-sw-1#wr m
Building configuration...
[OK]
sch-sochi-cahanqirov-sw-1#
```

Выполнение лабораторной работы

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

sch-sochi-cahanqirov-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-cahanqirov-gw-1(config-if)#exit
sch-sochi-cahanqirov-gw-1(config)#interface f0/0.6
sch-sochi-cahanqirov-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-cahanqirov-gw-1(config-subif)#encapsulation dot1Q 6
sch-sochi-cahanqirov-gw-1(config-subif)#ip address 10.128.255.6 255.255.255.252
sch-sochi-cahanqirov-gw-1(config-subif)#description donskaya
sch-sochi-cahanqirov-gw-1(config-subif)#exit
sch-sochi-cahanqirov-gw-1(config)#exit
sch-sochi-cahanqirov-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

sch-sochi-cahanqirov-gw-1#wr m
Building configuration...
[OK]
sch-sochi-cahanqirov-gw-1#
```

Настроим интерфейсы маршрутизатора msk-q42-sahanqirov-gw-1: поднимем интерфейс f0/0, создадим субинтерфейс f0/0.201 для 201 vlan(основной на этой территории) и зададим ip-адрес, создадим субинтерфейс f0/0.202 для 202 vlan(для управления устройствами территории) и зададим ip-адрес(рис. ??).

Выполнение лабораторной работы

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

msk-q42-cahanqirov-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-cahanqirov-gw-1(config-if)#exit
msk-q42-cahanqirov-gw-1(config)#interface f0/0.201
msk-q42-cahanqirov-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-cahanqirov-gw-1(config-subif)#encapsulation dot1Q 201
msk-q42-cahanqirov-gw-1(config-subif)#ip address 10.129.0.1 255.255.255.0
msk-q42-cahanqirov-gw-1(config-subif)#description q42-main
msk-q42-cahanqirov-gw-1(config-subif)#exit
msk-q42-cahanqirov-gw-1(config)#interface f1/0
msk-q42-cahanqirov-gw-1(config-if)#no shutdown

msk-q42-cahanqirov-gw-1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

msk-q42-cahanqirov-gw-1(config-if)#exit
msk-q42-cahanqirov-gw-1(config)#interface f1/0.202
msk-q42-cahanqirov-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-cahanqirov-gw-1(config-subif)#encapsulation dot1Q 202
msk-q42-cahanqirov-gw-1(config-subif)#ip address 10.129.1.1 255.255.255.0
msk-q42-cahanqirov-gw-1(config-subif)#description q42management
msk-q42-cahanqirov-gw-1(config-subif)#description q42-management
msk-q42-cahanqirov-gw-1(config-subif)#exit
```

Выполнение лабораторной работы

```
Password:

msk-q42-cahanqirov-sw-1>en
Password:
msk-q42-cahanqirov-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-cahanqirov-sw-1(config)#interface f0/24
msk-q42-cahanqirov-sw-1(config-if)#switchport mode trunk
msk-q42-cahanqirov-sw-1(config-if)#exit
msk-q42-cahanqirov-sw-1(config)#interface f0/1
msk-q42-cahanqirov-sw-1(config-if)#switchport mode access
msk-q42-cahanqirov-sw-1(config-if)#switchport access vlan 201
% Access VLAN does not exist. Creating vlan 201
msk-q42-cahanqirov-sw-1(config-if)#exit
msk-q42-cahanqirov-sw-1(config)#vlan 201
msk-q42-cahanqirov-sw-1(config-vlan)#name q42-main
msk-q42-cahanqirov-sw-1(config-vlan)#exit
msk-q42-cahanqirov-sw-1(config)#interface vlan201
msk-q42-cahanqirov-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-cahanqirov-sw-1(config-if)#no shutdown
msk-q42-cahanqirov-sw-1(config-if)#exit
msk-q42-cahanqirov-sw-1(config)#^Z
msk-q42-cahanqirov-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-q42-cahanqirov-sw-1#wr m
Building configuration...
[OK]
msk-q42-cahanqirov-sw-1#
```

Выполнение лабораторной работы

```
msk-hostel-cahanqirov-gw-1>en
Password:
Password:
msk-hostel-cahanqirov-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-cahanqirov-gw-1(config)#interface g0/1
msk-hostel-cahanqirov-gw-1(config-if)#switchport trunk encapsulation dot1q
msk-hostel-cahanqirov-gw-1(config-if)#switchport mode trunk

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

msk-hostel-cahanqirov-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-cahanqirov-gw-1(config-if)#exit
msk-hostel-cahanqirov-gw-1(config)#vlan 202
msk-hostel-cahanqirov-gw-1(config-vlan)#name q42-management
msk-hostel-cahanqirov-gw-1(config-vlan)#exit
msk-hostel-cahanqirov-gw-1(config)#interface vlan202
msk-hostel-cahanqirov-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-cahanqirov-gw-1(config-if)#no shutdown
msk-hostel-cahanqirov-gw-1(config-if)#ip address 10.129.1.2 255.255.255.0
msk-hostel-cahanqirov-gw-1(config-if)#exit
msk-hostel-cahanqirov-gw-1(config)#vlan 301
msk-hostel-cahanqirov-gw-1(config-vlan)#name hostel-main
msk-hostel-cahanqirov-gw-1(config-vlan)#exit
msk-hostel-cahanqirov-gw-1(config)#interface vlan301
msk-hostel-cahanqirov-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-cahanqirov-gw-1(config-if)#no shutdown
msk-hostel-cahanqirov-gw-1(config-if)#ip address 10.129.128.1 255.255.255.0
msk-hostel-cahanqirov-gw-1(config-if)#exit
msk-hostel-cahanqirov-gw-1(config)#
```


Выполнение лабораторной работы

```
Password:

msk-hostel-cahanqirov-1>en
Password:
msk-hostel-cahanqirov-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-hostel-cahanqirov-1(config)#interface g0/1
msk-hostel-cahanqirov-1(config-if)#switchport mode trunk
msk-hostel-cahanqirov-1(config-if)#exit
msk-hostel-cahanqirov-1(config)#interface f0/1
msk-hostel-cahanqirov-1(config-if)#switchport mode access
msk-hostel-cahanqirov-1(config-if)#switchport access vlan 301
% Access VLAN does not exist. Creating vlan 301
msk-hostel-cahanqirov-1(config-if)#exit
msk-hostel-cahanqirov-1(config)#vlan 301
msk-hostel-cahanqirov-1(config-vlan)#name hostel-main
msk-hostel-cahanqirov-1(config-vlan)#exit
msk-hostel-cahanqirov-1(config)#interface vlan301
msk-hostel-cahanqirov-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-cahanqirov-1(config-if)#no shutdown
msk-hostel-cahanqirov-1(config-if)#exit
msk-hostel-cahanqirov-1(config)#^Z
msk-hostel-cahanqirov-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-hostel-cahanqirov-1#wr m
Building configuration...
[OK]
msk-hostel-cahanqirov-1#
```

Настроим интерфейсы маршрутизатора sch-sochi-cahanqirov-gw-1: создадим субинтерфейс f0/0.401 для 401 vlan(основной на этой территории) и зададим ip-адрес, создадим субинтерфейс f0/0.402 для 402 vlan(для управления устройствами территории) и зададим ip-адрес(рис. ??):

Выполнение лабораторной работы

```
Password:

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

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

sch-sochi-cahanqirov-gw-1(config-subif)#encapsulation dot1Q 402
sch-sochi-cahanqirov-gw-1(config-subif)#ip address 10.130.1.1 255.255.255.0
sch-sochi-cahanqirov-gw-1(config-subif)#description sochi-management
sch-sochi-cahanqirov-gw-1(config-subif)#exit
sch-sochi-cahanqirov-gw-1(config)#^Z
sch-sochi-cahanqirov-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

sch-sochi-cahanqirov-gw-1#wr m
Building configuration...
[OK]
sch-sochi-cahanqirov-gw-1#
```

Выполнение лабораторной работы

Password:

```
sch-sochi-cahanqirov-sw-1>en
```

Password:

```
sch-sochi-cahanqirov-sw-1#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
sch-sochi-cahanqirov-sw-1(config)#interface f0/1
```

```
sch-sochi-cahanqirov-sw-1(config-if)#switchport mode access
```

```
sch-sochi-cahanqirov-sw-1(config-if)#switchport access vlan 401
```

```
% Access VLAN does not exist. Creating vlan 401
```

```
sch-sochi-cahanqirov-sw-1(config-if)#exit
```

```
sch-sochi-cahanqirov-sw-1(config)#vlan 401
```

```
sch-sochi-cahanqirov-sw-1(config-vlan)#name sochi-main
```

```
sch-sochi-cahanqirov-sw-1(config-vlan)#exit
```

```
sch-sochi-cahanqirov-sw-1(config)#interface vlan401
```

```
sch-sochi-cahanqirov-sw-1(config-if)#
```

```
%LINK-5-CHANGED: Interface Vlan401, changed state to up
```

```
sch-sochi-cahanqirov-sw-1(config-if)#no shutdown
```

```
sch-sochi-cahanqirov-sw-1(config-if)#exit
```

```
sch-sochi-cahanqirov-sw-1(config)#^Z
```

```
sch-sochi-cahanqirov-sw-1#
```

```
%SYS-5-CONFIG_I: Configured from console by console
```

```
sch-sochi-cahanqirov-sw-1#wr m
```

```
Building configuration...
```

```
[OK]
```

```
sch-sochi-cahanqirov-sw-1#
```

```
##
```

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

msk-donskaya-cahanqirov-gw-1#wr m
Building configuration...
[OK]
msk-donskaya-cahanqirov-gw-1#
```

Figure 11: Настройка маршрутизатора msk-donskaya-gw-1

```
Password:

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

msk-q42-cahanqirov-gw-1#wr m
Building configuration...
[OK]
msk-q42-cahanqirov-gw-1#
```

Figure 12: Настройка маршрутизатора msk-q42-gw-1

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

sch-sochi-cahanqirov-gw-1#wr m
Building configuration...
[OK]
sch-sochi-cahanqirov-gw-1#
```

Figure 13: Настройка маршрутизатора sch-sochi-gw-1

Настроим маршруты между маршрутизаторами на 42 квартале(рис. ??, ??).


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

msk-q42-cahanqirov-gw-1#wr m
Building configuration...
[OK]
msk-q42-cahanqirov-gw-1#
```

Figure 14: Настройка маршрутизатора msk-q42-gw-1

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

msk-hostel-cahanqirov-gw-1#wr m
Building configuration...
[OK]
msk-hostel-cahanqirov-gw-1#
```

Figure 15: Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-gw-1

Настроим NAT на маршрутизаторе msk-donskaya-gw-1, дополним список доступа к интернет-ресурсам (разрешим конечным устройствам с обеих территорий доступ ко всему) (рис. ??):

Выполнение лабораторной работы

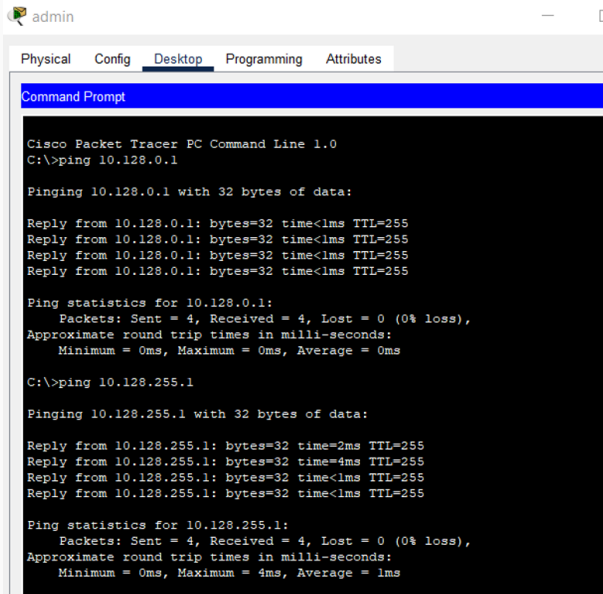
```
msk-donskaya-cahanqirov-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-cahanqirov-gw-1(config)#interface f0/1.5
msk-donskaya-cahanqirov-gw-1(config-subif)#ip nat inside
msk-donskaya-cahanqirov-gw-1(config-subif)#exit
msk-donskaya-cahanqirov-gw-1(config)#interface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

msk-donskaya-cahanqirov-gw-1(config)#ip access-list extended nat-inet
msk-donskaya-cahanqirov-gw-1(config-ext-nacl)#remark q42
msk-donskaya-cahanqirov-gw-1(config-ext-nacl)#permit ip host 10.129.0.200 any
msk-donskaya-cahanqirov-gw-1(config-ext-nacl)#permit ip host 10.129.128.200 any
msk-donskaya-cahanqirov-gw-1(config-ext-nacl)#remark sochi
msk-donskaya-cahanqirov-gw-1(config-ext-nacl)#
msk-donskaya-cahanqirov-gw-1(config-ext-nacl)#permit ip host 10.130.0.200 any
msk-donskaya-cahanqirov-gw-1(config-ext-nacl)#exit
msk-donskaya-cahanqirov-gw-1(config)#^Z
msk-donskaya-cahanqirov-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-cahanqirov-gw-1#wr m
Building configuration...
[OK]
msk-donskaya-cahanqirov-gw-1#
```

Проверим связь между администратором с Донской и маршрутизаторами на 42 квартале и в Сочи (рис. ??):

Выполнение лабораторной работы



The screenshot shows a Cisco Packet Tracer PC Command Line window. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, and the Command Prompt is open. The command prompt shows the execution of two ping commands. The first command is 'ping 10.128.0.1', which results in four successful replies with 32 bytes of data, a time of less than 1ms, and a TTL of 255. The statistics for 10.128.0.1 show 4 packets sent, 4 received, 0 lost, and 0% loss, with approximate round trip times of 0ms. The second command is 'ping 10.128.255.1', which also results in four successful replies with 32 bytes of data, a time of less than 1ms, and a TTL of 255. The statistics for 10.128.255.1 show 4 packets sent, 4 received, 0 lost, and 0% loss, with approximate round trip times of 4ms.

```
admin
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

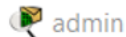
Ping statistics for 10.128.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

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=2ms TTL=255
Reply from 10.128.255.1: bytes=32 time=4ms 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 = 4ms, Average = 1ms
```



Physical Config Desktop Programming Attributes

Command Prompt

```
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=17ms TTL=126
```

```
Reply from 192.0.2.14: bytes=32 time=22ms TTL=126
```

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

```
Reply from 192.0.2.14: bytes=32 time=10ms 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 = 1ms, Maximum = 22ms, Average = 12ms
```

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.