

# Лаборатория работа 14

Статическая маршрутизация в Интернете.  
Настройка

ПОДГОТОВИЛА: КИМ РЕАЧНА  
ГРУППА: НПИБД-02-20

# Цель работы:

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.

# Задание:

- Настроить связь между территориями.
- Настроить оборудование, расположенное в квартале 42 в Москве
- Настроить оборудование, расположенное в филиале в г. Сочи
- Настроить статическую маршрутизацию между территориями
- Настроить статическую маршрутизацию на территории квартала 42 в г. Москве
- Настроить NAT на маршрутизаторе msk-donskaya-gw-1

# Настроить связь между территориями

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

provider-kim-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-kim-sw-1(config-if)#exit
provider-kim-sw-1(config)#int f0/4
provider-kim-sw-1(config-if)#switchport mode trunk

provider-kim-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down

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

provider-kim-sw-1(config-if)#exit
provider-kim-sw-1(config)#vlan 5
provider-kim-sw-1(config-vlan)#name q42
provider-kim-sw-1(config-vlan)#exit
provider-kim-sw-1(config)#int vlan5
provider-kim-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-kim-sw-1(config-if)#no shutdown
provider-kim-sw-1(config-if)#exit
provider-kim-sw-1(config)#vlan 6
provider-kim-sw-1(config-vlan)#name sochi
provider-kim-sw-1(config-vlan)#exit
provider-kim-sw-1(config)#int vlan6
provider-kim-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-kim-sw-1(config-if)#no shutdown
provider-kim-sw-1(config-if)#exit
```

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

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

# Настроить площадки 42-го квартала

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

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

msk-q42-kim-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-kim-gw-1(config-if)#exit
msk-q42-kim-gw-1(config)#int f1/0.202
msk-q42-kim-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-kim-gw-1(config-subif)#encapsulation dot1Q 202
msk-q42-kim-gw-1(config-subif)#ip address 10.129.1.1 255.255.255.0
msk-q42-kim-gw-1(config-subif)#description q42-management
msk-q42-kim-gw-1(config-subif)#exit
msk-q42-kim-gw-1(config)#exit
msk-q42-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

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

```
msk-q42-kim-sw-1>en
Password:
msk-q42-kim-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-kim-sw-1(config)#int f0/24
msk-q42-kim-sw-1(config-if)#switchport mode trunk

msk-q42-kim-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up

msk-q42-kim-sw-1(config-if)#exit
msk-q42-kim-sw-1(config)#int f0/1
msk-q42-kim-sw-1(config-if)#switchport mode access
msk-q42-kim-sw-1(config-if)#switchport access vlan 201
% Access VLAN does not exist. Creating vlan 201
msk-q42-kim-sw-1(config-if)#exit
msk-q42-kim-sw-1(config)#vlan 201
msk-q42-kim-sw-1(config-vlan)#name q42-main
msk-q42-kim-sw-1(config-vlan)#exit
msk-q42-kim-sw-1(config)#int vlan201
msk-q42-kim-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-kim-sw-1(config-if)#no shutdown
msk-q42-kim-sw-1(config-if)#^Z
msk-q42-kim-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

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



## Настроить площадки в Сочи

```
sch-sochi-kim-gw-1>en
Password:
sch-sochi-kim-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-kim-gw-1(config)#int f0/0.401
sch-sochi-kim-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-kim-gw-1(config-subif)#encapsulation dot1Q 401
sch-sochi-kim-gw-1(config-subif)#ip address 10.130.0.1 255.255.255.0
sch-sochi-kim-gw-1(config-subif)#description sochi-main
sch-sochi-kim-gw-1(config-subif)#exit
sch-sochi-kim-gw-1(config)#int f0/0.402
sch-sochi-kim-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-kim-gw-1(config-subif)#encapsulation dot1Q 402
sch-sochi-kim-gw-1(config-subif)#ip address 10.130.1.1 255.255.255.0
sch-sochi-kim-gw-1(config-subif)#description sochi-management
sch-sochi-kim-gw-1(config-subif)#exit
sch-sochi-kim-gw-1(config)#exit
sch-sochi-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

```
sch-sochi-kim-gw-1#wr m
Building configuration...
```

```
sch-sochi-kim-sw-1>en
Password:
sch-sochi-kim-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-kim-sw-1(config)#int f0/1
sch-sochi-kim-sw-1(config-if)#switchport mode access
sch-sochi-kim-sw-1(config-if)#switchport access vlan 401
% Access VLAN does not exist. Creating vlan 401
sch-sochi-kim-sw-1(config-if)#exit
sch-sochi-kim-sw-1(config)#vlan 401
sch-sochi-kim-sw-1(config-vlan)#name sochi-main
sch-sochi-kim-sw-1(config-vlan)#exit
sch-sochi-kim-sw-1(config)#int vlan401
sch-sochi-kim-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-kim-sw-1(config-if)#no shutdown
sch-sochi-kim-sw-1(config-if)#exit
sch-sochi-kim-sw-1(config)#exit
sch-sochi-kim-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

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

## Настроить статическую маршрутизацию между территориями

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

```
msk-donskaya-kim-gw-1#wr m
Building configuration...
```

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

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

```
sch-sochi-kim-gw-1#wr m
Building configuration...
```

## Настроить статическую маршрутизацию на территории квартала 42 в г. Москве

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

msk-q42-kim-gw-1#wr m
```

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

msk-hostel-kim-gw-1#wr m
Building configuration...
```



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

```
msk-donskaya-kim-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-kim-gw-1(config)#int f0/1.5
msk-donskaya-kim-gw-1(config-subif)#ip nat inside
msk-donskaya-kim-gw-1(config-subif)#exit
msk-donskaya-kim-gw-1(config)#int f0/1.6
msk-donskaya-kim-gw-1(config-subif)#ip nat inside
msk-donskaya-kim-gw-1(config-subif)#exit
msk-donskaya-kim-gw-1(config)#ip access-list extended nat-inet
msk-donskaya-kim-gw-1(config-ext-nacl)#remark q42
msk-donskaya-kim-gw-1(config-ext-nacl)#permit ip host 10.129.0.200 any
msk-donskaya-kim-gw-1(config-ext-nacl)#permit ip host 10.129.128.200 any
msk-donskaya-kim-gw-1(config-ext-nacl)#remark sochi
msk-donskaya-kim-gw-1(config-ext-nacl)#permit ip host 10.130.0.200 any
msk-donskaya-kim-gw-1(config-ext-nacl)#exit
msk-donskaya-kim-gw-1(config)#exit
```



# Вывод

Настроила 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.

**Спасибо за внимание!**