

# Презентация по лабораторной работе №14

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## Цель и задачи

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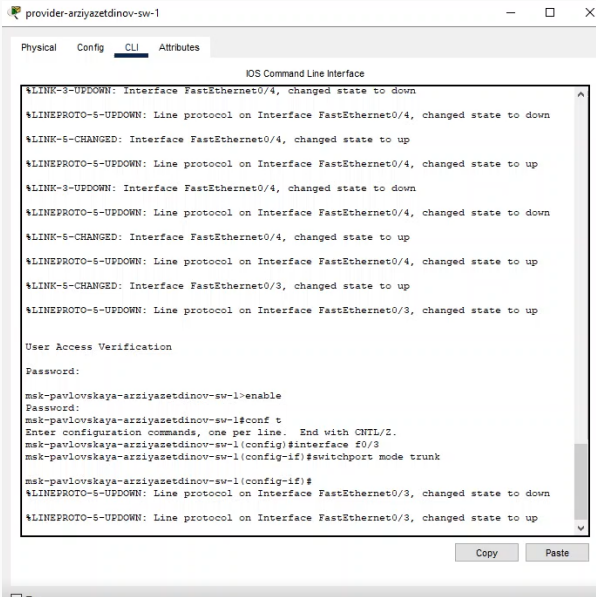
Настроить взаимодействие через сеть провайдера посредством статической маршрутизации локальной сети организации с сетью основного здания, расположенного в 42-м квартале в Москве, и сетью филиала, расположенного в г. Сочи.

1. Настроить связь между территориями (см. раздел 14.3.1).
2. Настроить оборудование, расположенное в квартале 42 в Москве (см. раздел 14.3.2).
3. Настроить оборудование, расположенное в филиале в г. Сочи (см. раздел 14.3.3).
4. Настроить статическую маршрутизацию между территориями (см. раздел 14.3.4).
5. Настроить статическую маршрутизацию на территории квартала 42 в г. Москве (см. раздел 14.3.5).
6. Настроить NAT на маршрутизаторе msk-donskaya-gw-1 (см. раздел 14.3.6).
7. При выполнении работы необходимо учитывать соглашение об именовании (см. раздел 2.5).

## Процесс выполнения лабораторной работы

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# Настройка интерфейсов коммутатора provider-sw-1



provider-arziyazetdinov-sw-1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINK-3-UPDOWN: Interface FastEthernet0/4, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-3-UPDOWN: Interface FastEthernet0/4, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

User Access Verification

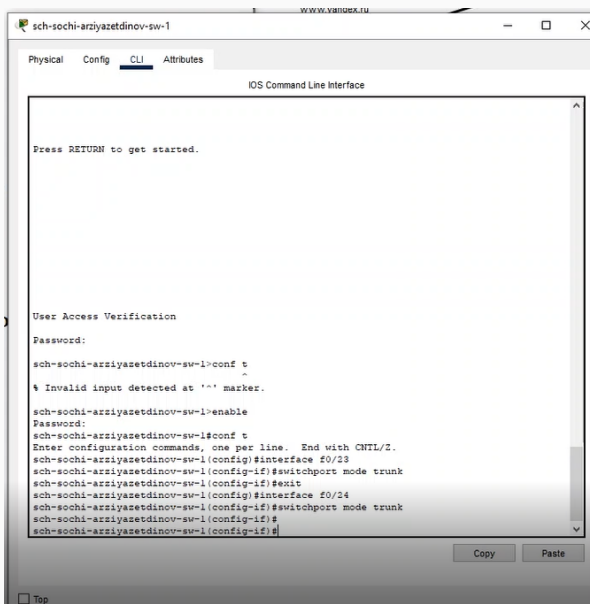
Password:

msk-pavlovskaya-arziyazetdinov-sw-1>enable
Password:
msk-pavlovskaya-arziyazetdinov-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-pavlovskaya-arziyazetdinov-sw-1(config)#interface #0/3
msk-pavlovskaya-arziyazetdinov-sw-1(config-if)#switchport mode trunk

msk-pavlovskaya-arziyazetdinov-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
```

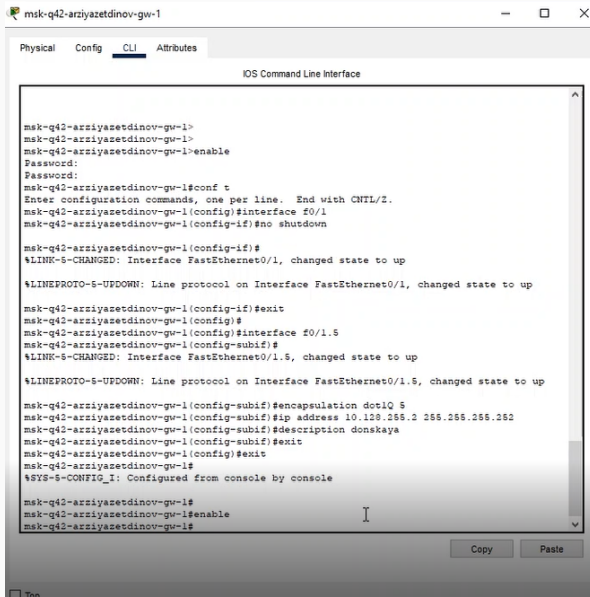
Copy Paste

# Настройка интерфейсов маршрутизатора msk-donskaya-gw-1





# Настройка интерфейсов маршрутизатора msk-q42-gw-1



The screenshot shows a network configuration window titled "msk-q42-arziyazetdinov-gw-1". It has four tabs: "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is selected, showing the "IOS Command Line Interface". The interface displays a series of commands and their outputs:

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

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

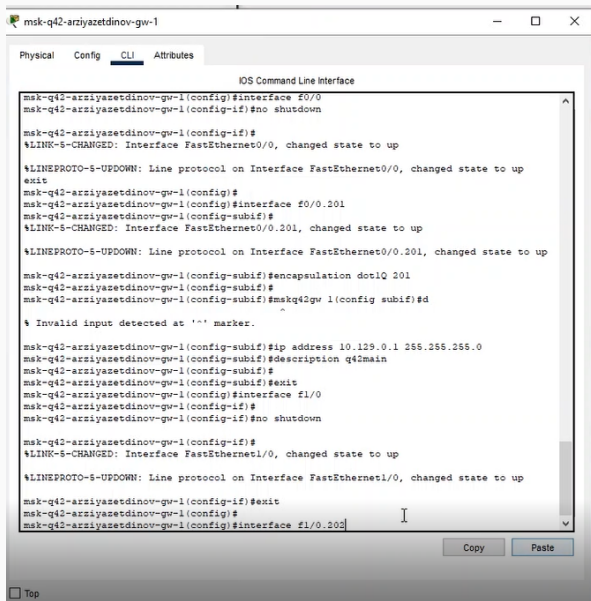
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.5, changed state to up

msk-q42-arziyazetdinov-gw-1(config-subif)#encapsulation dot1Q 5
msk-q42-arziyazetdinov-gw-1(config-subif)#ip address 10.120.255.2 255.255.255.252
msk-q42-arziyazetdinov-gw-1(config-subif)#description donskaya
msk-q42-arziyazetdinov-gw-1(config-subif)#exit
msk-q42-arziyazetdinov-gw-1(config)#exit
msk-q42-arziyazetdinov-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-q42-arziyazetdinov-gw-1#
msk-q42-arziyazetdinov-gw-1#enable
msk-q42-arziyazetdinov-gw-1#
```

At the bottom of the window, there are "Copy" and "Paste" buttons.

# Настройка интерфейсов маршрутизатора msk-q42-gw-1



The screenshot shows a network configuration window titled "msk-q42-arziyazetdinov-gw-1". It has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" selected. The main area displays the "IOS Command Line Interface" with a series of configuration commands and their outputs. The commands configure interfaces f0/0 and f1/0, including setting them to no shutdown, configuring subinterfaces 201 and 202, setting encapsulation to dot1Q, and assigning IP addresses. Status messages indicate that the interfaces and line protocols are up.

```
msk-q42-arziyazetdinov-gw-1(config)#interface f0/0
msk-q42-arziyazetdinov-gw-1(config-if)#no shutdown

msk-q42-arziyazetdinov-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
exit
msk-q42-arziyazetdinov-gw-1(config)#
msk-q42-arziyazetdinov-gw-1(config)#interface f0/0.201
msk-q42-arziyazetdinov-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-arziyazetdinov-gw-1(config-subif)#encapsulation dot1Q 201
msk-q42-arziyazetdinov-gw-1(config-subif)#
msk-q42-arziyazetdinov-gw-1(config-subif)#mskq42gw 1(config subif)#d
^
% Invalid input detected at '^' marker.

msk-q42-arziyazetdinov-gw-1(config-subif)#ip address 10.129.0.1 255.255.255.0
msk-q42-arziyazetdinov-gw-1(config-subif)#description q42main
msk-q42-arziyazetdinov-gw-1(config-subif)#
msk-q42-arziyazetdinov-gw-1(config-subif)#exit
msk-q42-arziyazetdinov-gw-1(config)#interface f1/0
msk-q42-arziyazetdinov-gw-1(config-if)#
msk-q42-arziyazetdinov-gw-1(config-if)#no shutdown

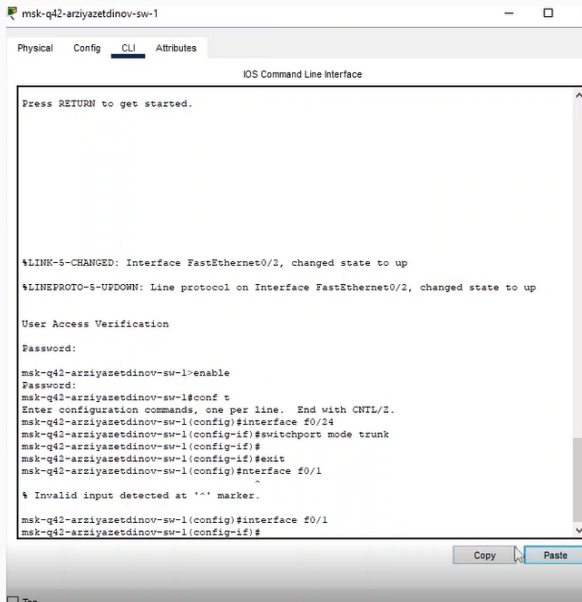
msk-q42-arziyazetdinov-gw-1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

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

msk-q42-arziyazetdinov-gw-1(config-if)#exit
msk-q42-arziyazetdinov-gw-1(config)#
msk-q42-arziyazetdinov-gw-1(config)#interface f1/0.202
```

At the bottom right of the CLI window, there are "Copy" and "Paste" buttons.

# Настройка интерфейсов коммутатора sch-sochi-sw-1



The screenshot shows a web-based configuration interface for a network switch. The title bar indicates the device is 'msk-q42-arziyazetdinov-sw-1'. The interface has tabs for 'Physical', 'Config', 'CLI', and 'Attributes', with 'CLI' currently selected. The main area is titled 'IOS Command Line Interface' and contains a terminal window. The terminal shows the following text:

```
Press RETURN to get started.
```

%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

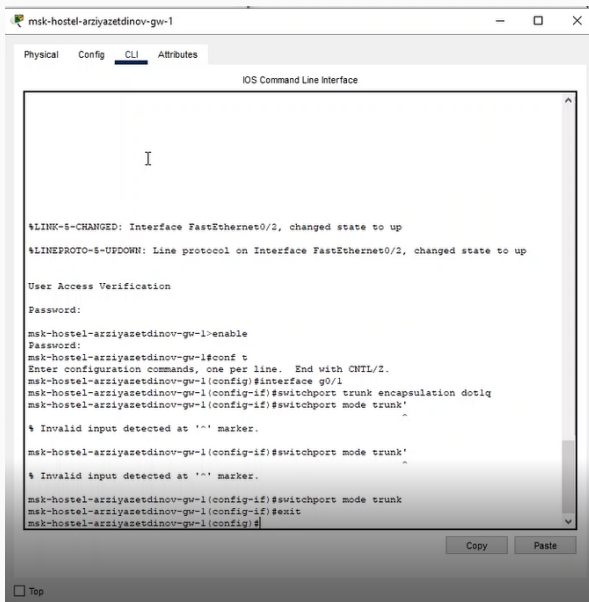
User Access Verification

Password:

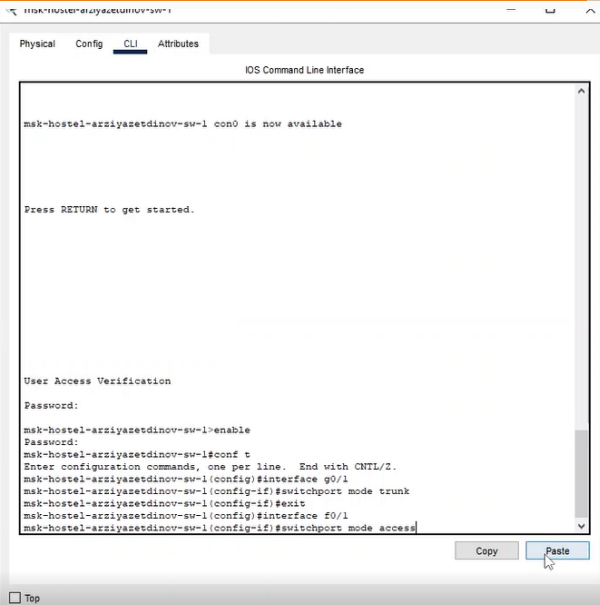
```
msk-q42-arziyazetdinov-sw-1>enable
Password:
msk-q42-arziyazetdinov-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-arziyazetdinov-sw-1(config)#interface f0/24
msk-q42-arziyazetdinov-sw-1(config-if)#switchport mode trunk
msk-q42-arziyazetdinov-sw-1(config-if)#
msk-q42-arziyazetdinov-sw-1(config-if)#exit
msk-q42-arziyazetdinov-sw-1(config)#interface f0/1
msk-q42-arziyazetdinov-sw-1(config)#
^
% Invalid input detected at '^' marker.
msk-q42-arziyazetdinov-sw-1(config)#interface f0/1
msk-q42-arziyazetdinov-sw-1(config-if)#
```

At the bottom of the terminal window, there are 'Copy' and 'Paste' buttons.

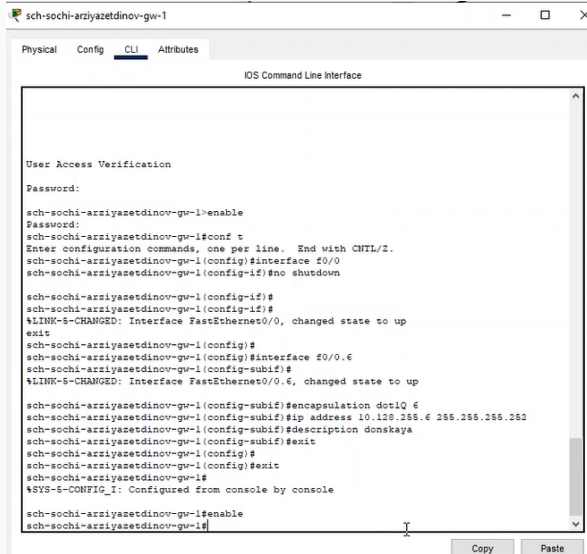
# Настройка интерфейсов маршрутизатора sch-sochi-gw-1



# Настройка площадки 42-го квартала. Настройка интерфейсов коммутатора msk-q42-sw-1



# Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-gw-1



The screenshot shows a terminal window titled 'sch-sochi-arziyazetdinov-gw-1'. At the top, there are tabs for 'Physical', 'Config', 'CLI' (which is selected), and 'Attributes'. Below the tabs, the text 'IOS Command Line Interface' is displayed. The terminal content shows a sequence of commands and system responses:

```
User Access Verification

Password:

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

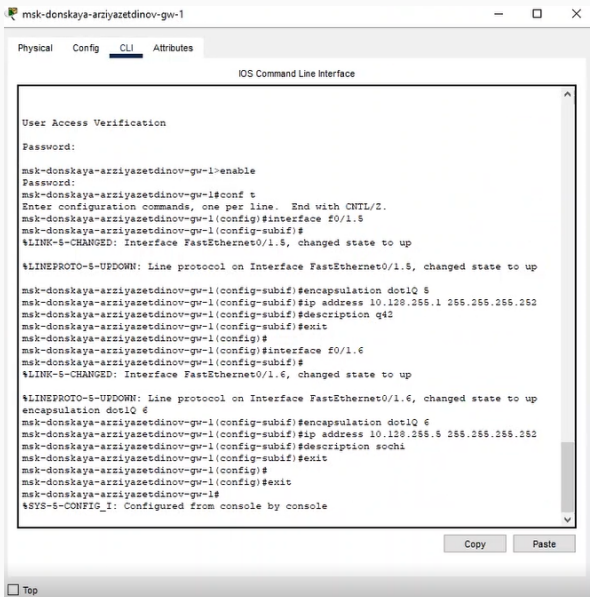
sch-sochi-arziyazetdinov-gw-1(config-if)#
sch-sochi-arziyazetdinov-gw-1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
exit
sch-sochi-arziyazetdinov-gw-1(config)#
sch-sochi-arziyazetdinov-gw-1(config)#interface f0/0.6
sch-sochi-arziyazetdinov-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.6, changed state to up

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

sch-sochi-arziyazetdinov-gw-1#enable
sch-sochi-arziyazetdinov-gw-1#
```

At the bottom of the terminal window, there are 'Copy' and 'Paste' buttons.

# Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-gw-1



The screenshot shows a window titled "msk-donskaya-arziyazetdinov-gw-1" with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the "IOS Command Line Interface". The interface shows a series of commands and their outputs:

```
User Access Verification
Password:

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

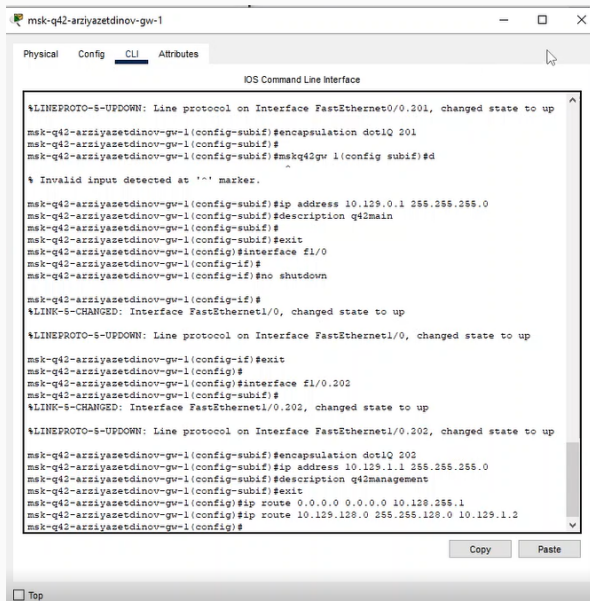
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.5, changed state to up

msk-donskaya-arziyazetdinov-gw-1(config-subif)#encapsulation dot1Q 5
msk-donskaya-arziyazetdinov-gw-1(config-subif)#ip address 10.128.255.1 255.255.255.252
msk-donskaya-arziyazetdinov-gw-1(config-subif)#description q42
msk-donskaya-arziyazetdinov-gw-1(config-subif)#exit
msk-donskaya-arziyazetdinov-gw-1(config)#
msk-donskaya-arziyazetdinov-gw-1(config)#interface f0/1.6
msk-donskaya-arziyazetdinov-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
encapsulation dot1Q 6
msk-donskaya-arziyazetdinov-gw-1(config-subif)#encapsulation dot1Q 6
msk-donskaya-arziyazetdinov-gw-1(config-subif)#ip address 10.128.255.5 255.255.255.252
msk-donskaya-arziyazetdinov-gw-1(config-subif)#description sochi
msk-donskaya-arziyazetdinov-gw-1(config-subif)#exit
msk-donskaya-arziyazetdinov-gw-1(config)#
msk-donskaya-arziyazetdinov-gw-1(config)#exit
msk-donskaya-arziyazetdinov-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

At the bottom right of the CLI window, there are "Copy" and "Paste" buttons. At the bottom left of the window, there is a "Top" button.

# Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-gw-1



The screenshot shows a network configuration window titled "msk-q42-arziyazetdinov-gw-1". It has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" selected. The main area displays the "IOS Command Line Interface" with a scrollable list of commands and system messages. The commands configure two interfaces, FastEthernet0/0.201 and FastEthernet1/0.202, with various settings like encapsulation, IP addresses, descriptions, and routes. System messages indicate the state changes for these interfaces.

```
msk-q42-arziyazetdinov-gw-1(config-subif)#encapsulation dot1Q 201
msk-q42-arziyazetdinov-gw-1(config-subif)#
msk-q42-arziyazetdinov-gw-1(config-subif)#mskq42gw 1(config subif)#d

% Invalid input detected at '^' marker.

msk-q42-arziyazetdinov-gw-1(config-subif)#ip address 10.129.0.1 255.255.255.0
msk-q42-arziyazetdinov-gw-1(config-subif)#description q42main
msk-q42-arziyazetdinov-gw-1(config-subif)#
msk-q42-arziyazetdinov-gw-1(config-subif)#exit
msk-q42-arziyazetdinov-gw-1(config)#interface f1/0
msk-q42-arziyazetdinov-gw-1(config-if)#
msk-q42-arziyazetdinov-gw-1(config-if)#no shutdown

msk-q42-arziyazetdinov-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-arziyazetdinov-gw-1(config-if)#exit
msk-q42-arziyazetdinov-gw-1(config)#
msk-q42-arziyazetdinov-gw-1(config)#interface f1/0.202
msk-q42-arziyazetdinov-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-arziyazetdinov-gw-1(config-subif)#encapsulation dot1Q 202
msk-q42-arziyazetdinov-gw-1(config-subif)#ip address 10.129.1.1 255.255.255.0
msk-q42-arziyazetdinov-gw-1(config-subif)#description q42management
msk-q42-arziyazetdinov-gw-1(config-subif)#exit
msk-q42-arziyazetdinov-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.128.255.1
msk-q42-arziyazetdinov-gw-1(config)#ip route 10.129.128.0 255.255.128.0 10.129.1.2
msk-q42-arziyazetdinov-gw-1(config)#
```

Copy Paste



## Выводы по проделанной работе

---

Благодаря выполнению данной лабораторной работы мы настроили 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.