

Лабораторная Работа №14. Статическая маршрутизация в Интернете. Настройка.

Администрирование локальных сетей

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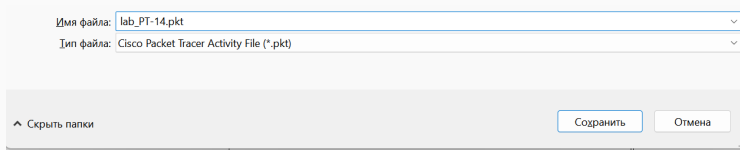
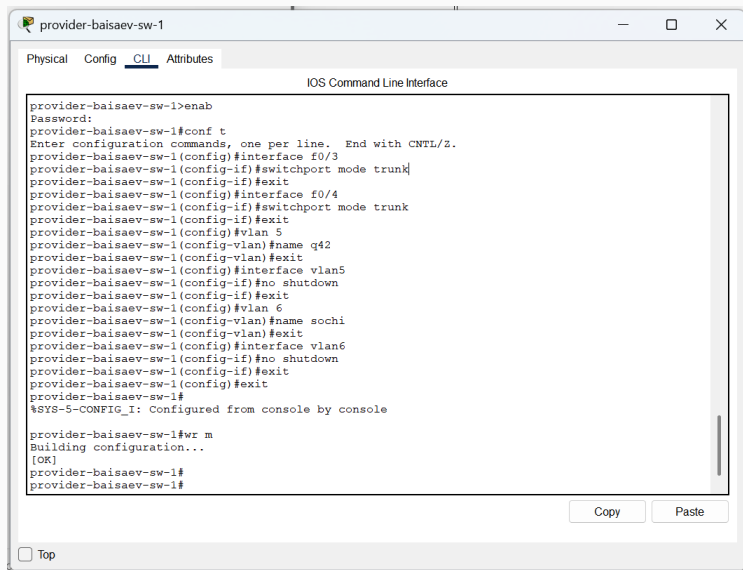


Figure 1: Открытие проекта lab_PT-14.pkt.

Настройка линка между площадками



provider-baisaev-sw-1

Physical Config CLI Attributes

IOS Command Line Interface

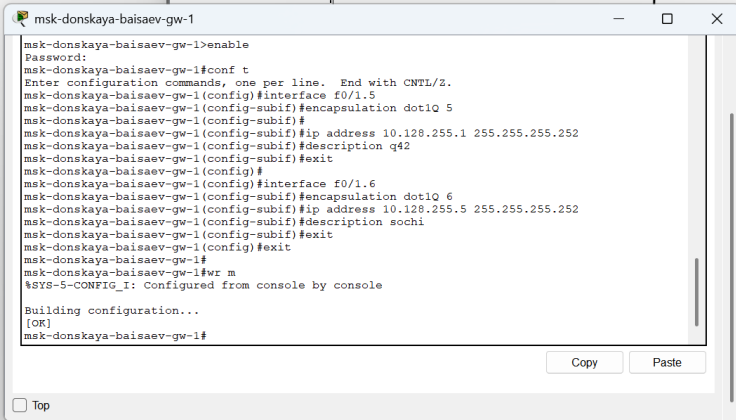
```
provider-baisaev-sw-1>enab
Password:
provider-baisaev-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
provider-baisaev-sw-1(config)#interface f0/3
provider-baisaev-sw-1(config-if)#switchport mode trunk
provider-baisaev-sw-1(config-if)#exit
provider-baisaev-sw-1(config)#interface f0/4
provider-baisaev-sw-1(config-if)#switchport mode trunk
provider-baisaev-sw-1(config-if)#exit
provider-baisaev-sw-1(config)#vlan 5
provider-baisaev-sw-1(config-vlan)#name q42
provider-baisaev-sw-1(config-vlan)#exit
provider-baisaev-sw-1(config)#interface vlan5
provider-baisaev-sw-1(config-if)#no shutdown
provider-baisaev-sw-1(config-if)#exit
provider-baisaev-sw-1(config)#vlan 6
provider-baisaev-sw-1(config-vlan)#name sochi
provider-baisaev-sw-1(config-vlan)#exit
provider-baisaev-sw-1(config)#interface vlan6
provider-baisaev-sw-1(config-if)#no shutdown
provider-baisaev-sw-1(config-if)#exit
provider-baisaev-sw-1(config)#exit
provider-baisaev-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

provider-baisaev-sw-1#wr m
Building configuration...
[OK]
provider-baisaev-sw-1#
provider-baisaev-sw-1#
```

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Настройка линка между площадками



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

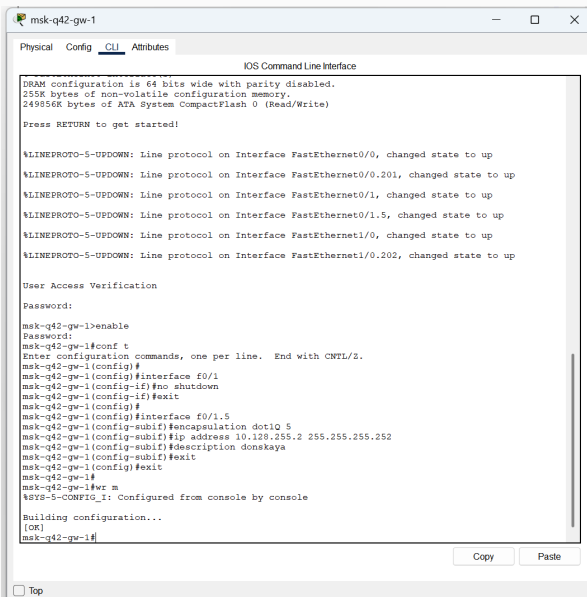
Building configuration...
[OK]
msk-donskaya-baisaev-gw-1#
```

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Figure 3: Настройка интерфейсов маршрутизатора msk-donskaya-baisaev-gw-1.

Настройка линка между площадками



The screenshot shows a terminal window for a network device named 'msk-q42-gw-1'. The window has tabs for 'Physical', 'Config', 'CLI' (selected), and 'Attributes'. The main area displays the 'IOS Command Line Interface' with various status messages and configuration commands. The messages indicate that the line protocol is up on several interfaces. The configuration commands show the user enabling the device, entering configuration mode, and configuring interface f0/1 with no shutdown, encapsulation dot1Q 5, and IP address 10.128.255.2. The window also shows the user exiting configuration mode and saving the configuration.

```
msk-q42-gw-1
Physical Config CLI Attributes
IOS Command Line Interface

DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)

Press RETURN to get started!

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.201, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.5, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0.202, changed state to up

User Access Verification

Password:

msk-q42-gw-1>enable
Password:
msk-q42-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-gw-1(config)#
msk-q42-gw-1(config)#interface f0/1
msk-q42-gw-1(config-if)#no shutdown
msk-q42-gw-1(config-if)#exit
msk-q42-gw-1(config)#
msk-q42-gw-1(config)#interface f0/i.5
msk-q42-gw-1(config-subif)#encapsulation dot1Q 5
msk-q42-gw-1(config-subif)#ip address 10.128.255.2 255.255.255.252
msk-q42-gw-1(config-subif)#description donskaya
msk-q42-gw-1(config-subif)#exit
msk-q42-gw-1(config)#exit
msk-q42-gw-1#
msk-q42-gw-1#wr m
%SYS-5-CONFIG_I: Configured from console by console

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

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Настройка линка между площадками

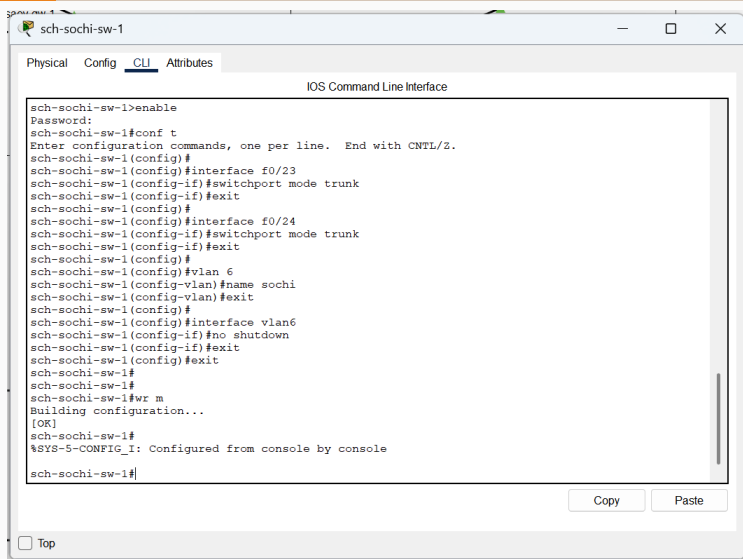
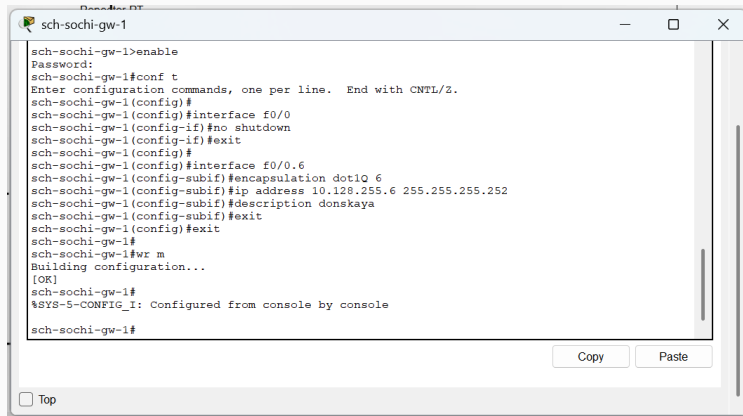


Figure 5: Настройка интерфейсов коммутатора sch-sochi-sw-1

Настройка линка между площадками



```
sch-sochi-gw-1>enable
Password:
sch-sochi-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-gw-1(config)#
sch-sochi-gw-1(config)#interface f0/0
sch-sochi-gw-1(config-if)#no shutdown
sch-sochi-gw-1(config-if)#exit
sch-sochi-gw-1(config)#
sch-sochi-gw-1(config)#interface f0/0.6
sch-sochi-gw-1(config-subif)#encapsulation dot1Q 6
sch-sochi-gw-1(config-subif)#ip address 10.128.255.6 255.255.255.252
sch-sochi-gw-1(config-subif)#description donskaya
sch-sochi-gw-1(config-subif)#exit
sch-sochi-gw-1(config)#exit
sch-sochi-gw-1#
sch-sochi-gw-1#wr m
Building configuration...
[OK]
sch-sochi-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

sch-sochi-gw-1#
```

Figure 6: Настройка интерфейсов маршрутизатора sch-sochi-gw-1.

Настройка площадки 42-го квартала

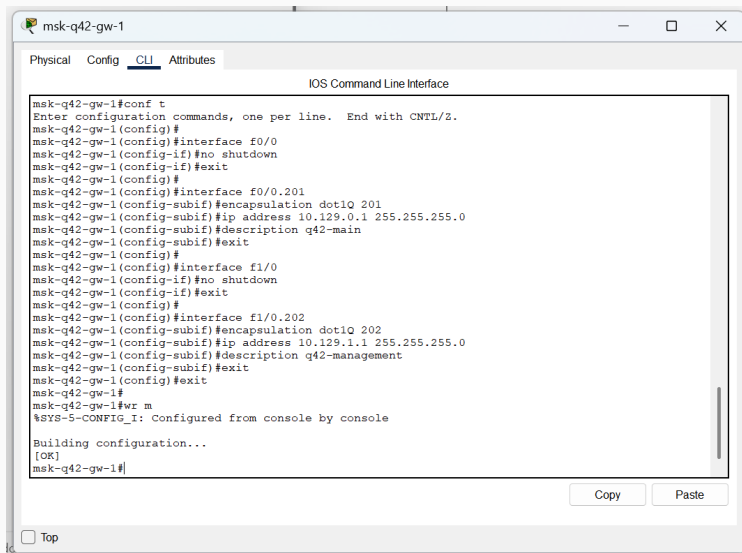
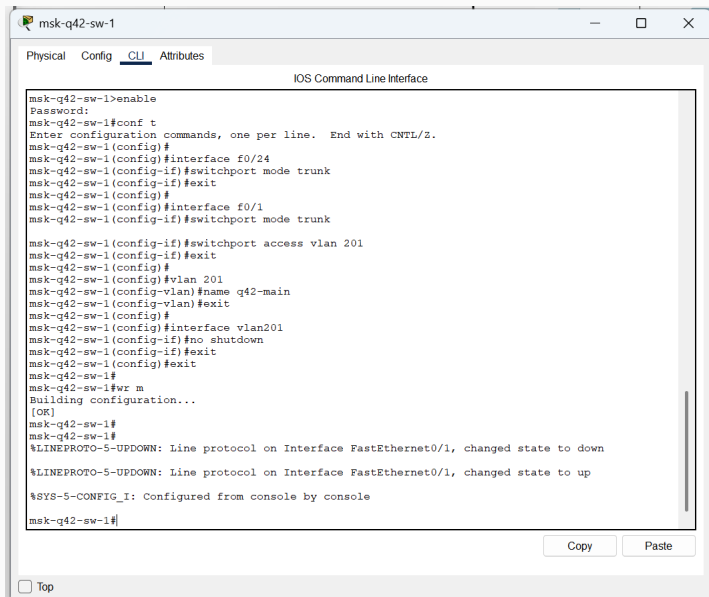


Figure 7: Настройка интерфейсов маршрутизатора msk-q42-gw-1

Настройка площадки 42-го квартала



The screenshot shows a terminal window titled "msk-q42-sw-1" with tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The terminal shows a sequence of commands to configure a switch, including enabling the device, setting a password, entering configuration mode, configuring interfaces f0/24 and f0/1 as trunk ports, configuring VLAN 201 with the name "q42-main", and enabling the interface. The configuration is saved to the startup configuration. The terminal output shows the switch building the configuration and the line protocol on interface FastEthernet0/1 changing state to down and then up. The configuration is confirmed by the system message "%SYS-5-CONFIG_I: Configured from console by console". The prompt "msk-q42-sw-1#" is visible at the bottom of the terminal window.

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

msk-q42-sw-1(config-if)#switchport access vlan 201
msk-q42-sw-1(config-if)#exit
msk-q42-sw-1(config)#
msk-q42-sw-1(config)#vlan 201
msk-q42-sw-1(config-vlan)#name q42-main
msk-q42-sw-1(config-vlan)#exit
msk-q42-sw-1(config)#
msk-q42-sw-1(config)#interface vlan201
msk-q42-sw-1(config-if)#no shutdown
msk-q42-sw-1(config-if)#exit
msk-q42-sw-1(config)#exit
msk-q42-sw-1#
msk-q42-sw-1#wr m
Building configuration...
[OK]
msk-q42-sw-1#
msk-q42-sw-1#
%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

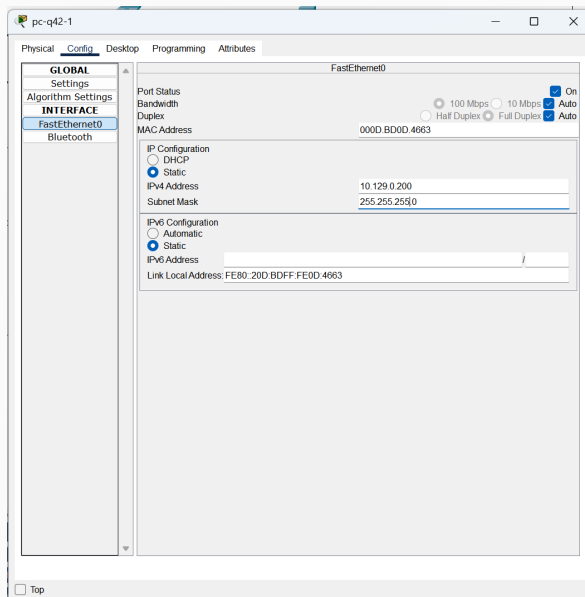
%SYS-5-CONFIG_I: Configured from console by console

msk-q42-sw-1#
```

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Настройка площадки 42-го квартала



Настройка площадки 42-го квартала

```
pc-q42-1
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.129.0.1

Pinging 10.129.0.1 with 32 bytes of data:

Reply from 10.129.0.1: bytes=32 time<1ms TTL=255
Reply from 10.129.0.1: bytes=32 time<1ms TTL=255
Reply from 10.129.0.1: bytes=32 time<1ms TTL=255
Reply from 10.129.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 10.129.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.128.0.1

Pinging 10.128.0.1 with 32 bytes of data:

Request timed out.
Reply from 10.128.0.1: bytes=32 time<1ms TTL=254
Reply from 10.128.0.1: bytes=32 time<1ms TTL=254
Reply from 10.128.0.1: bytes=32 time<1ms TTL=254

Ping statistics for 10.128.0.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.128.0.1

Pinging 10.128.0.1 with 32 bytes of data:

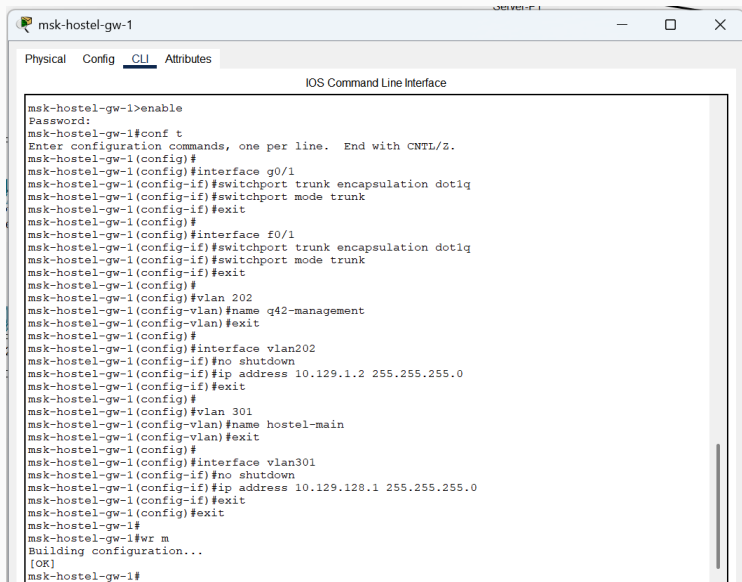
Reply from 10.128.0.1: bytes=32 time<1ms TTL=254
Reply from 10.128.0.1: bytes=32 time=13ms TTL=254
Reply from 10.128.0.1: bytes=32 time<1ms TTL=254
Reply from 10.128.0.1: bytes=32 time=1ms TTL=254

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 = 13ms, Average = 3ms

C:\>|
```

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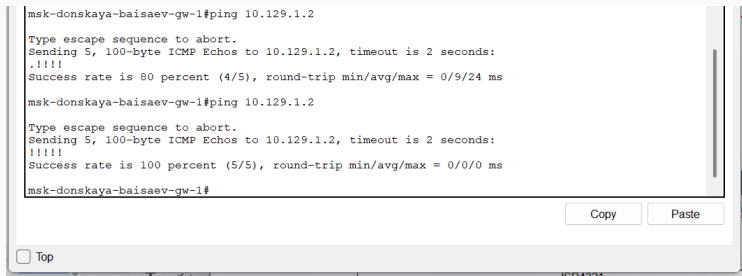
Настройка площадки 42-го квартала



The screenshot shows a terminal window titled 'msk-hostel-gw-1' with tabs for 'Physical', 'Config', 'CLI', and 'Attributes'. The 'CLI' tab is active, displaying the 'IOS Command Line Interface'. The terminal shows a sequence of commands to configure a switch, including enabling it, setting a password, entering configuration mode, configuring two interfaces (g0/1 and f0/1) as switchports in trunk mode with dot1q encapsulation, creating two VLANs (202 and 301) with names 'q42-management' and 'hostel-main', and assigning IP addresses to the corresponding VLAN interfaces. The configuration is saved to the startup configuration.

```
msk-hostel-gw-1>enable
Password:
msk-hostel-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-gw-1(config)#
msk-hostel-gw-1(config)#interface g0/1
msk-hostel-gw-1(config-if)#switchport trunk encapsulation dot1q
msk-hostel-gw-1(config-if)#switchport mode trunk
msk-hostel-gw-1(config-if)#exit
msk-hostel-gw-1(config)#
msk-hostel-gw-1(config)#interface f0/1
msk-hostel-gw-1(config-if)#switchport trunk encapsulation dot1q
msk-hostel-gw-1(config-if)#switchport mode trunk
msk-hostel-gw-1(config-if)#exit
msk-hostel-gw-1(config)#
msk-hostel-gw-1(config)#vlan 202
msk-hostel-gw-1(config-vlan)#name q42-management
msk-hostel-gw-1(config-vlan)#exit
msk-hostel-gw-1(config)#
msk-hostel-gw-1(config)#interface vlan202
msk-hostel-gw-1(config-if)#no shutdown
msk-hostel-gw-1(config-if)#ip address 10.129.1.2 255.255.255.0
msk-hostel-gw-1(config-if)#exit
msk-hostel-gw-1(config)#
msk-hostel-gw-1(config)#vlan 301
msk-hostel-gw-1(config-vlan)#name hostel-main
msk-hostel-gw-1(config-vlan)#exit
msk-hostel-gw-1(config)#
msk-hostel-gw-1(config)#interface vlan301
msk-hostel-gw-1(config-if)#no shutdown
msk-hostel-gw-1(config-if)#ip address 10.129.128.1 255.255.255.0
msk-hostel-gw-1(config-if)#exit
msk-hostel-gw-1(config)#exit
msk-hostel-gw-1#
msk-hostel-gw-1#wr m
Building configuration...
[OK]
msk-hostel-gw-1#
```

Настройка площадки 42-го квартала



```
msk-donskaya-baisaev-gw-1#ping 10.129.1.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.129.1.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/9/24 ms

msk-donskaya-baisaev-gw-1#ping 10.129.1.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.129.1.2, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

msk-donskaya-baisaev-gw-1#
```

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Figure 12: Выполнение проверки.

Настройка площадки 42-го квартала

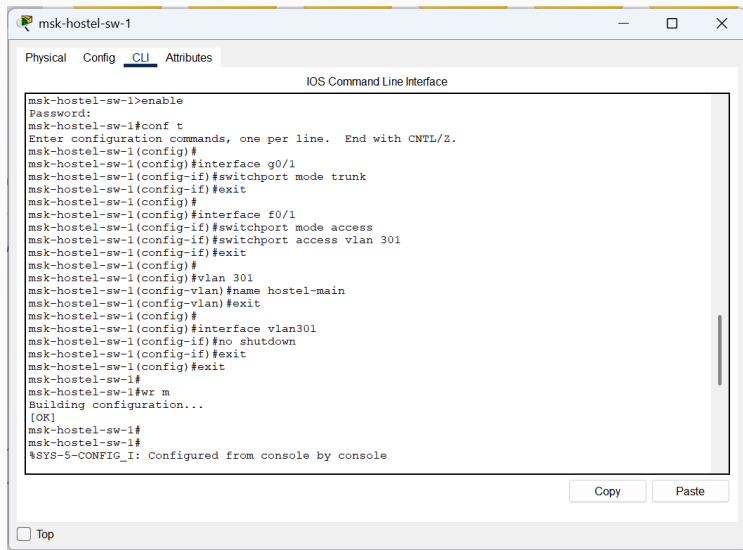
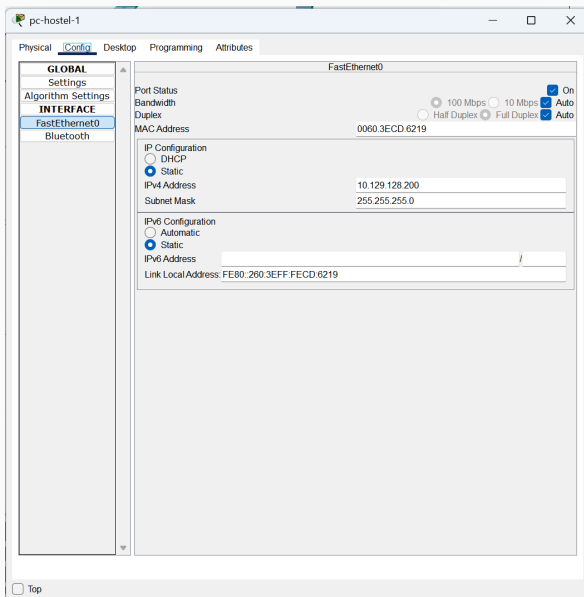
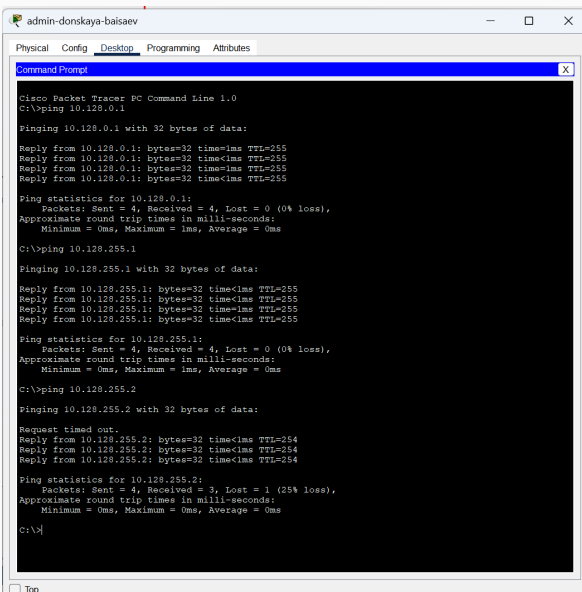


Figure 13: Настройка интерфейсов коммутатора msk-hostel-sw-1.

Настройка площадки 42-го квартала



Настройка площадки 42-го квартала



```
admin-donskaya-baisaev
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 = 1ms, Average = 0ms

C:\>ping 10.128.255.2

Pinging 10.128.255.2 with 32 bytes of data:

Request timed out.
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 = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

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Настройка площадки в Сочи

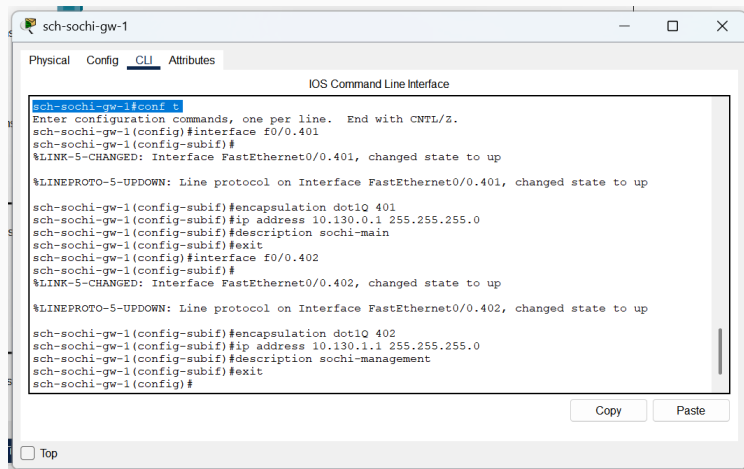


Figure 16: Первоначальная настройка маршрутизатора sch-sochi-gw-1.

Настройка площадки в Сочи

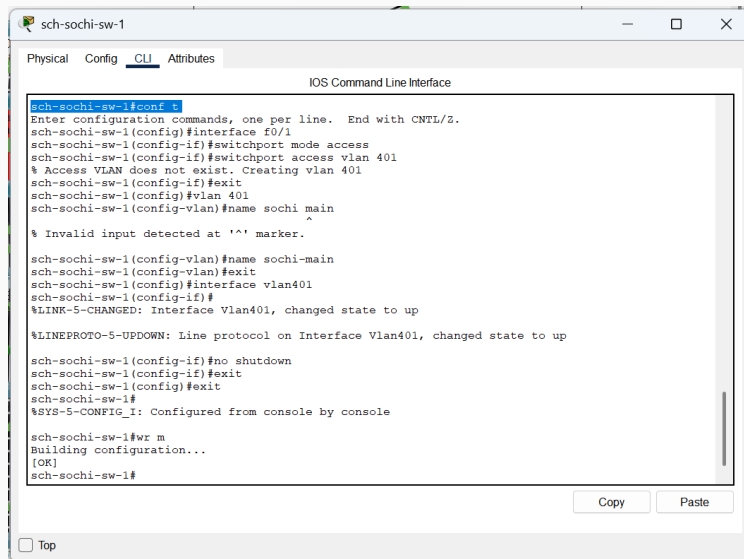
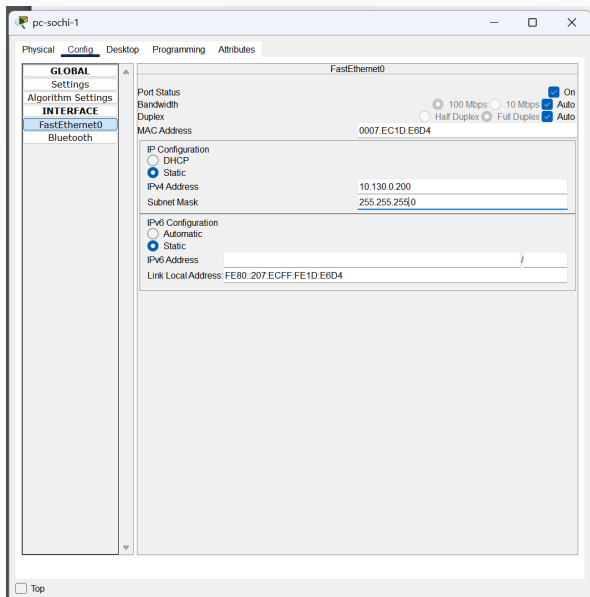
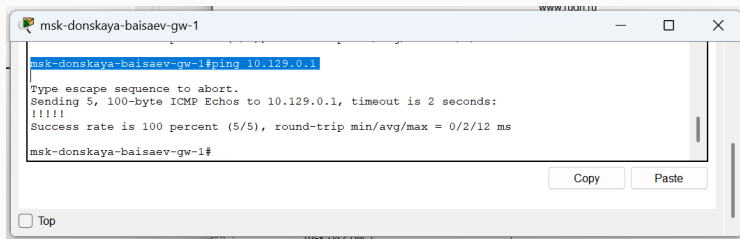


Figure 17: Персональная настройка коммутатора sch-sochi-sw-1

Настройка площадки в Сочи



Настройка маршрутизации между площадками



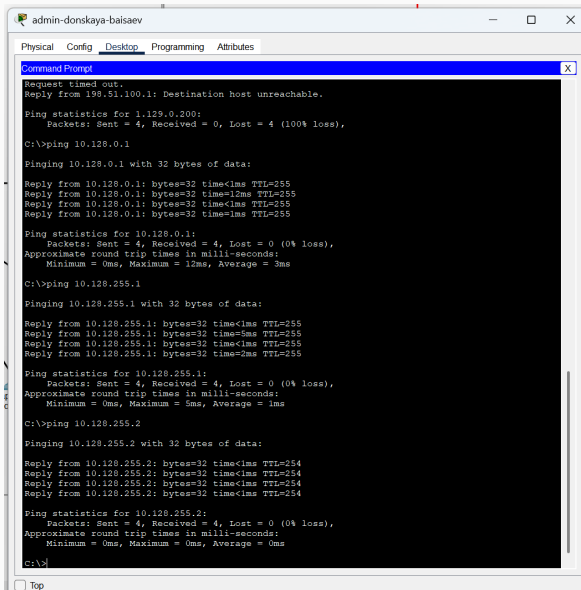
```
msk-donskaya-baisaev-gw-1
msk-donskaya-baisaev-gw-1#ping 10.129.0.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.129.0.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/2/12 ms
msk-donskaya-baisaev-gw-1#
```

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Figure 19: Настройка маршрутизатора msk-donskaya-baisaev-gw-1.

Настройка маршрутизации между площадками

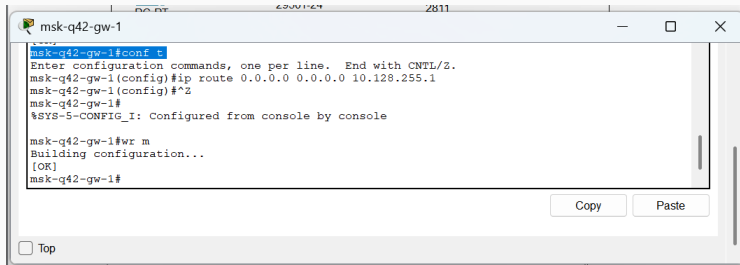


The screenshot shows a Windows Command Prompt window titled "admin-donskaya-baisaev". The window has tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes", with "Desktop" currently selected. The Command Prompt displays the results of several network tests:

```
Request timed out.  
Reply from 198.51.100.1: Destination host unreachable.  
  
Ping statistics for 1.129.0.200:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),  
  
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=12ms 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 = 12ms, Average = 3ms  
  
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=5ms TTL=255  
Reply from 10.128.255.1: bytes=32 time<1ms TTL=255  
Reply from 10.128.255.1: bytes=32 time=2ms 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 = 5ms, Average = 1ms  
  
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 = 0ms, Average = 0ms  
  
C:\>
```

At the bottom left of the window, there is a "Top" button.

Настройка маршрутизации между площадками

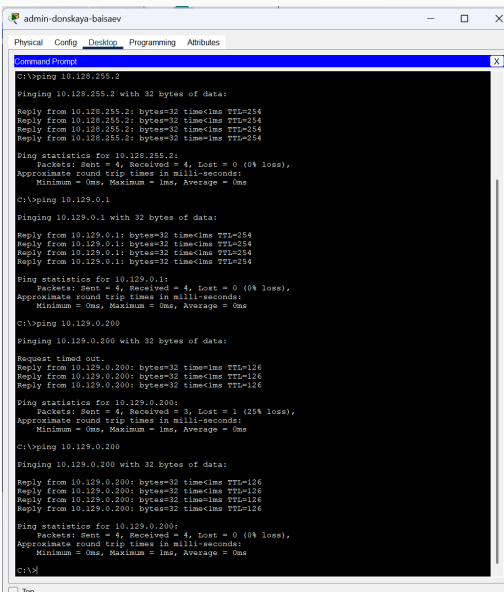


```
msk-q42-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.128.255.1
msk-q42-gw-1(config)#^Z
msk-q42-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

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

Figure 21: Настройка маршрутизатора msk-q42-gw-1.

Настройка маршрутизации между площадками



The screenshot shows a Windows Command Prompt window titled "admin-donskaya-balsaev". The window has tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes", with "Desktop" currently selected. The Command Prompt displays the results of three ping commands executed from the C:\ directory.

```
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 = 1ms, Average = 0ms

C:\>ping 10.129.0.1

Pinging 10.129.0.1 with 32 bytes of data:

Reply from 10.129.0.1: bytes=32 time<1ms TTL=254
Reply from 10.129.0.1: bytes=32 time<1ms TTL=254
Reply from 10.129.0.1: bytes=32 time<1ms TTL=254
Reply from 10.129.0.1: bytes=32 time<1ms TTL=254

Ping statistics for 10.129.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.129.0.200

Pinging 10.129.0.200 with 32 bytes of data:

Request timed out.
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 = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 10.129.0.200

Pinging 10.129.0.200 with 32 bytes of data:

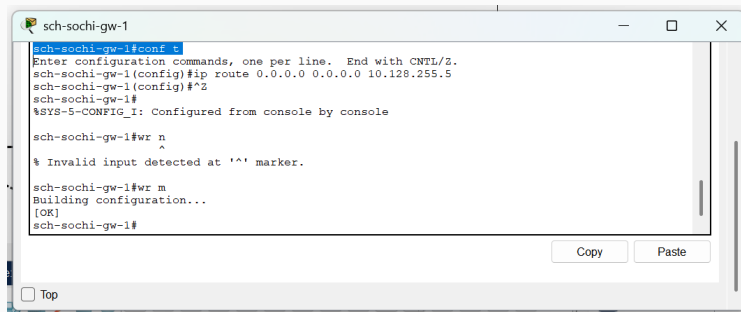
Reply from 10.129.0.200: bytes=32 time<1ms TTL=126
Reply from 10.129.0.200: bytes=32 time<1ms TTL=126
Reply from 10.129.0.200: bytes=32 time<1ms TTL=126
Reply from 10.129.0.200: bytes=32 time<1ms TTL=126

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 = 1ms, Average = 0ms

C:\>
```

At the bottom left of the window, there is a checkbox labeled "Top".

Настройка маршрутизации между площадками



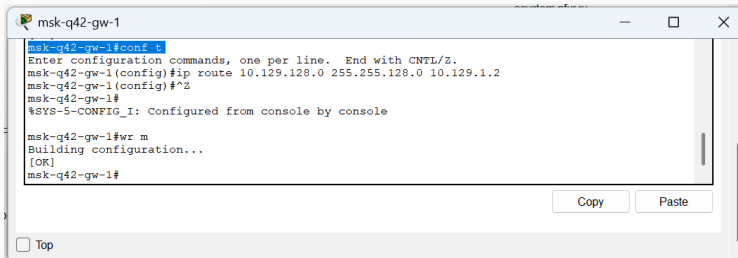
```
sch-sochi-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-gw-1(config)#ip route 0.0.0.0 0.0.0.0 10.128.255.5
sch-sochi-gw-1(config)#^Z
sch-sochi-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

sch-sochi-gw-1#wr n
^
% Invalid input detected at '^' marker.

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

Figure 23: Настройка маршрутизатора sch-sochi-gw-1.

Настройка маршрутизации на 42 квартале



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

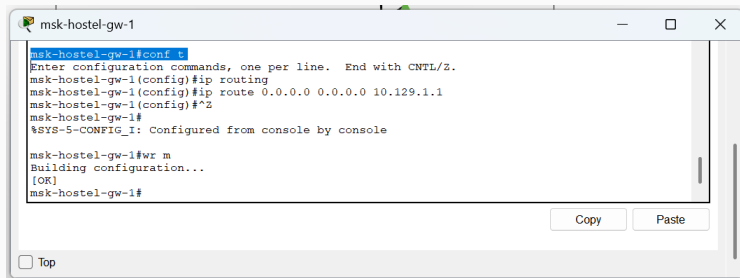
msk-q42-gw-1#wr m
Building configuration...
[OK]
msk-q42-gw-1#
```

Copy Paste

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Figure 24: Настройка маршрутизатора msk-q42-gw-1.

Настройка маршрутизации на 42 квартале



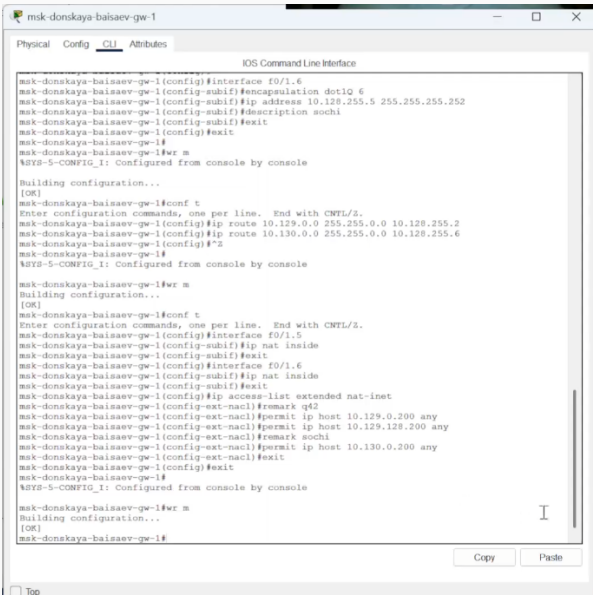
A terminal window titled "msk-hostel-gw-1" showing the configuration of a network device. The user enters the command "conf t" to enter configuration mode. The prompt changes to "msk-hostel-gw-1(config)". The user enters "ip routing" to enable IP routing. The prompt changes to "msk-hostel-gw-1(config)#". The user enters "ip route 0.0.0.0 0.0.0.0 10.129.1.1" to configure a default route. The prompt changes to "msk-hostel-gw-1(config)#". The user enters "^Z" to save the configuration. The prompt changes to "msk-hostel-gw-1#". The system displays the message "%SYS-5-CONFIG_I: Configured from console by console". The user enters "wr m" to save the configuration to the master file. The system displays the message "Building configuration...". The user enters "OK" to confirm the save. The prompt changes to "msk-hostel-gw-1#".

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

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

Figure 25: Настройка интерфейсов маршрутизирующего коммутатора msk-hostel-gw-1.

Настройка NAT



```
msk-donskaya-baisaev-gw-1
Physical Config CLI Attributes
IOS Command Line Interface

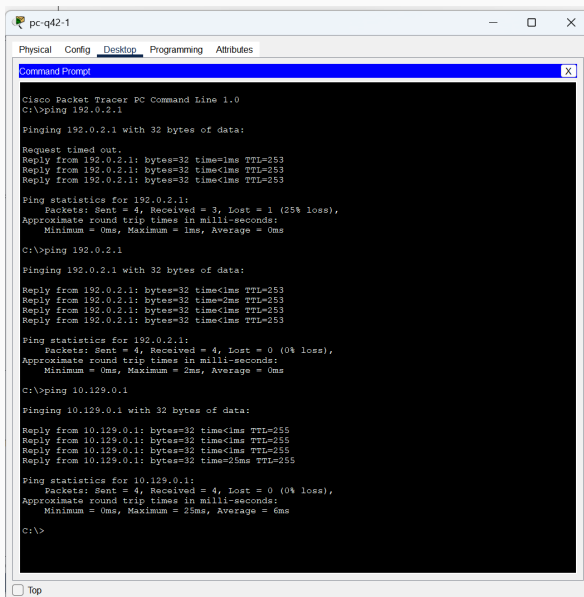
msk-donskaya-baisaev-gw-1(config)#interface f0/1.6
msk-donskaya-baisaev-gw-1(config-subif)#encapsulation dot1Q 6
msk-donskaya-baisaev-gw-1(config-subif)#ip address 10.128.255.5 255.255.255.252
msk-donskaya-baisaev-gw-1(config-subif)#description sochi
msk-donskaya-baisaev-gw-1(config-subif)#exit
msk-donskaya-baisaev-gw-1(config)#exit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

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

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

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

Настройка NAT



```
pc-q42-1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.0.2.1

Pinging 192.0.2.1 with 32 bytes of data:

Request timed out.
Reply from 192.0.2.1: bytes=32 time<1ms TTL=253
Reply from 192.0.2.1: bytes=32 time<1ms TTL=253
Reply from 192.0.2.1: bytes=32 time<1ms TTL=253

Ping statistics for 192.0.2.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.0.2.1

Pinging 192.0.2.1 with 32 bytes of data:

Reply from 192.0.2.1: bytes=32 time<1ms TTL=253
Reply from 192.0.2.1: bytes=32 time<2ms TTL=253
Reply from 192.0.2.1: bytes=32 time<1ms TTL=253
Reply from 192.0.2.1: bytes=32 time<1ms TTL=253

Ping statistics for 192.0.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>ping 10.129.0.1

Pinging 10.129.0.1 with 32 bytes of data:

Reply from 10.129.0.1: bytes=32 time<1ms TTL=255
Reply from 10.129.0.1: bytes=32 time<1ms TTL=255
Reply from 10.129.0.1: bytes=32 time<1ms TTL=255
Reply from 10.129.0.1: bytes=32 time=25ms TTL=255

Ping statistics for 10.129.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 25ms, Average = 6ms

C:\>
```

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В ходе выполнения 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.