

Лабораторная работа №6

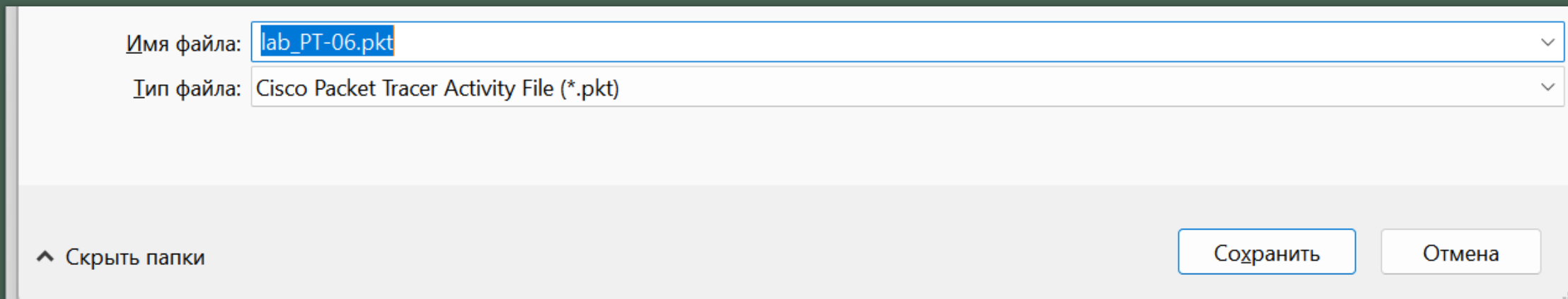
Статическая маршрутизация VLAN

Исаев Булат Абубакарович

1132227131

НПИБД-01-22

Новый проект



Имя файла: lab_PT-06.pkt

Тип файла: Cisco Packet Tracer Activity File (*.pkt)

^ Скрыть папки

Сохранить Отмена

Рис. 1.1. Открытие проекта lab_PT-06.pkt.

Размещение и подключение Cisco 2811

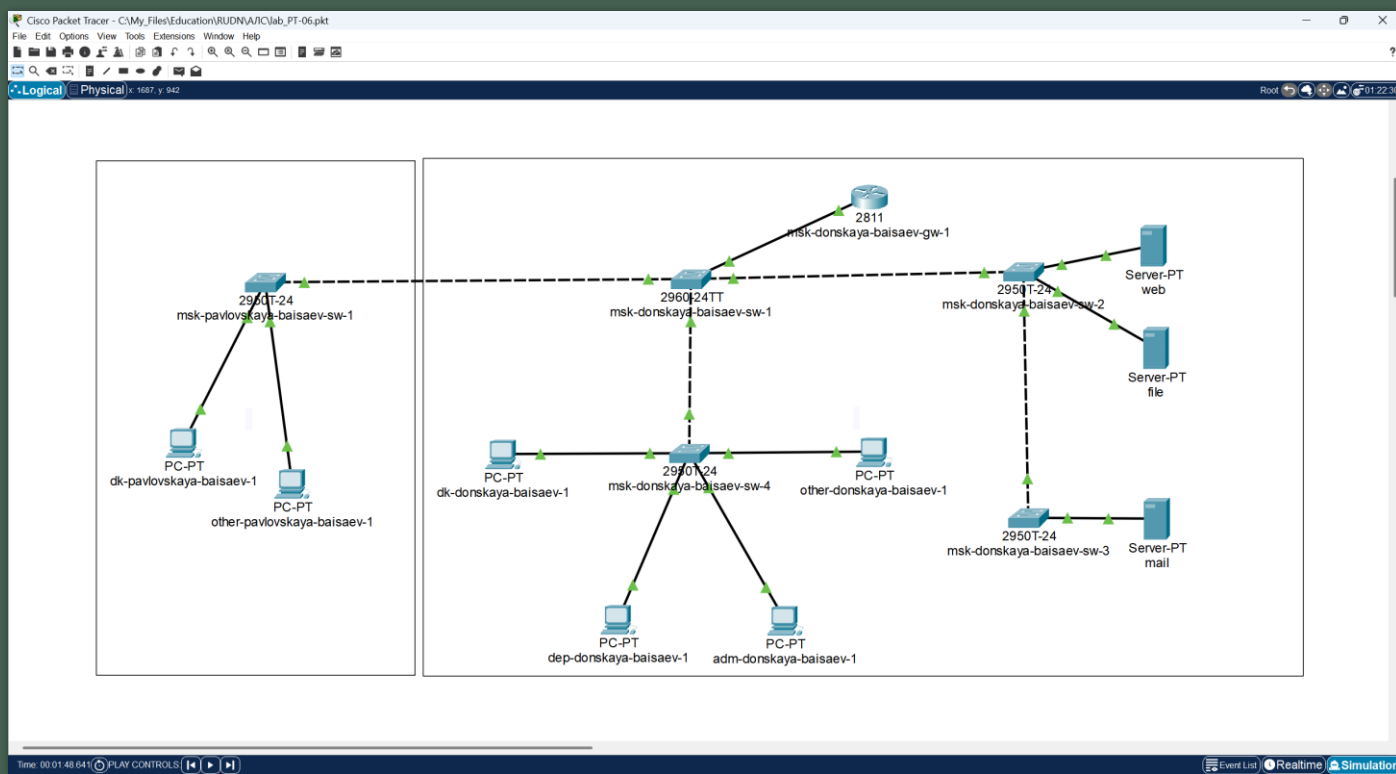
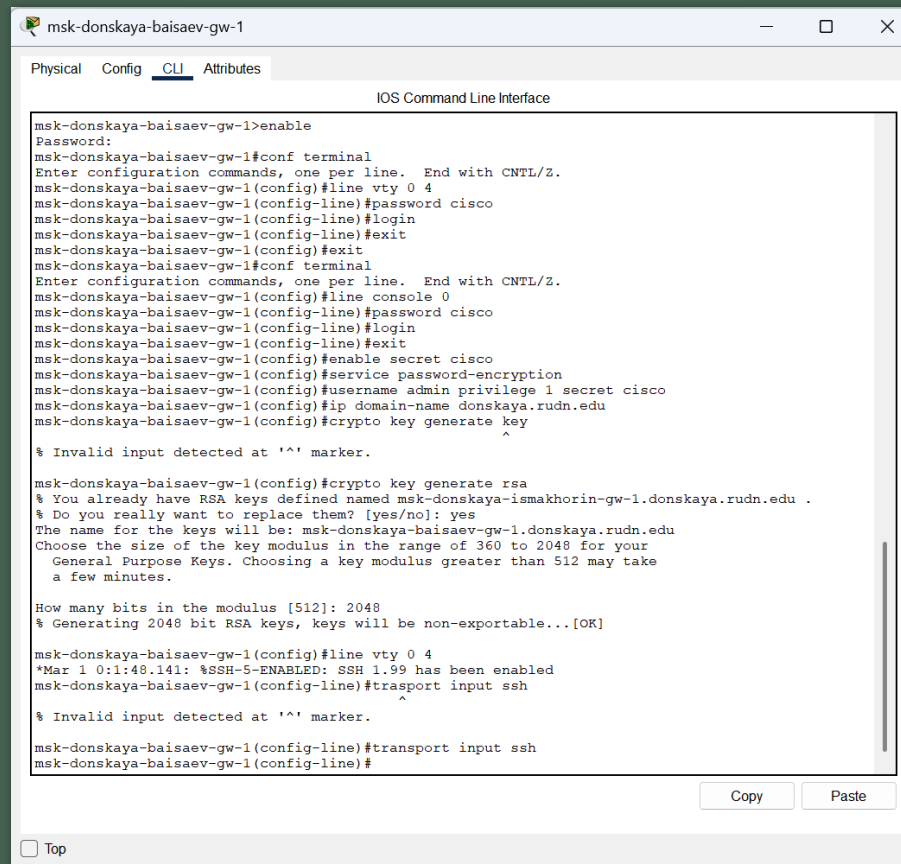


Рис. 1.2. Размещение маршрутизатора Cisco 2811 в логической области проекта и подключение его к порту 24 коммутатора msk-donskaya-baisaev-sw-1.

Конфигурация маршрутизатора



```
msk-donskaya-baisaev-gw-1>enable
Password:
msk-donskaya-baisaev-gw-1#conf terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-baisaev-gw-1(config)#line vty 0 4
msk-donskaya-baisaev-gw-1(config-line)#password cisco
msk-donskaya-baisaev-gw-1(config-line)#login
msk-donskaya-baisaev-gw-1(config-line)#exit
msk-donskaya-baisaev-gw-1(config)#exit
msk-donskaya-baisaev-gw-1#conf terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-baisaev-gw-1(config)#line console 0
msk-donskaya-baisaev-gw-1(config-line)#password cisco
msk-donskaya-baisaev-gw-1(config-line)#login
msk-donskaya-baisaev-gw-1(config-line)#exit
msk-donskaya-baisaev-gw-1(config)#enable secret cisco
msk-donskaya-baisaev-gw-1(config)#service password-encryption
msk-donskaya-baisaev-gw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-baisaev-gw-1(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-baisaev-gw-1(config)#crypto key generate key
^
% Invalid input detected at '^' marker.

msk-donskaya-baisaev-gw-1(config)#crypto key generate rsa
% You already have RSA keys defined named msk-donskaya-ismakhorin-gw-1.donskaya.rudn.edu .
% Do you really want to replace them? [yes/no]: yes
The name for the keys will be: msk-donskaya-baisaev-gw-1.donskaya.rudn.edu
Choose the size of the key modulus in the range of 360 to 2048 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

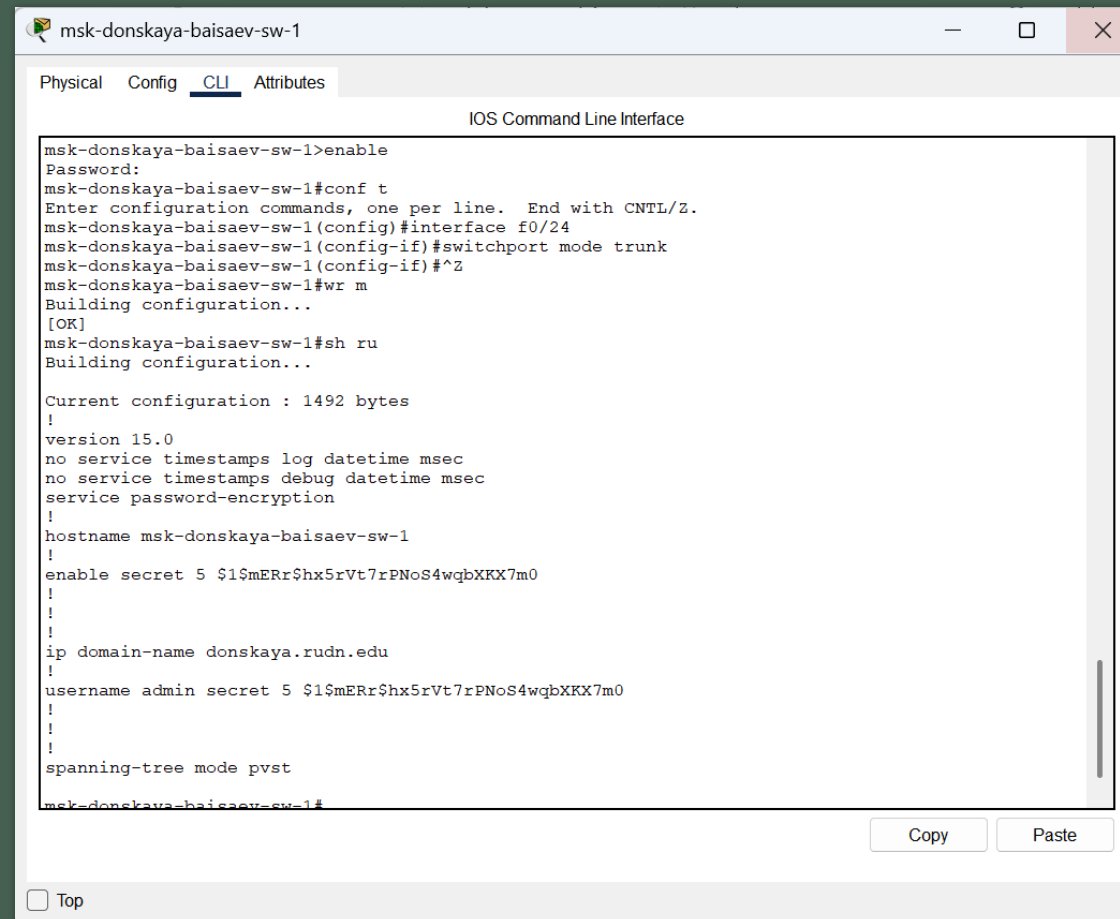
How many bits in the modulus [512]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

msk-donskaya-baisaev-gw-1(config)#line vty 0 4
*Mar 1 0:1:48.141: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-baisaev-gw-1(config-line)#transport input ssh
^
% Invalid input detected at '^' marker.

msk-donskaya-baisaev-gw-1(config-line)#transport input ssh
msk-donskaya-baisaev-gw-1(config-line)#
```

Рис. 1.3. Конфигурация маршрутизатора: имя, пароль для доступа к консоли и настройка удалённого подключение к нему по ssh.

Настройка Trunk-порта



The screenshot shows a network configuration window titled "msk-donskaya-baisaev-sw-1". It has 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 entered to configure the switch and its ports. The commands include enabling the switch, setting a password, entering configuration mode, configuring interface f0/24 as a trunk port, and saving the configuration. Below the commands, the current configuration is displayed, showing various system settings and the configuration for interface f0/24.

```
msk-donskaya-baisaev-sw-1>enable
Password:
msk-donskaya-baisaev-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-baisaev-sw-1(config)#interface f0/24
msk-donskaya-baisaev-sw-1(config-if)#switchport mode trunk
msk-donskaya-baisaev-sw-1(config-if)#^Z
msk-donskaya-baisaev-sw-1#wr m
Building configuration...
[OK]
msk-donskaya-baisaev-sw-1#sh ru
Building configuration...

Current configuration : 1492 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname msk-donskaya-baisaev-sw-1
!
enable secret 5 $1$mERr$hX5rVt7rPNoS4wqbXKX7m0
!
!
!
ip domain-name donsкаya.rudn.edu
!
username admin secret 5 $1$mERr$hX5rVt7rPNoS4wqbXKX7m0
!
!
!
spanning-tree mode pvst
msk-donskaya-baisaev-sw-1#
```

Copy Paste

☐ Top

Рис. 1.4. Настройка порта 24 коммутатора msk-donskaya-baisaev-sw-1 как trunk-порт.

Изменение наименования

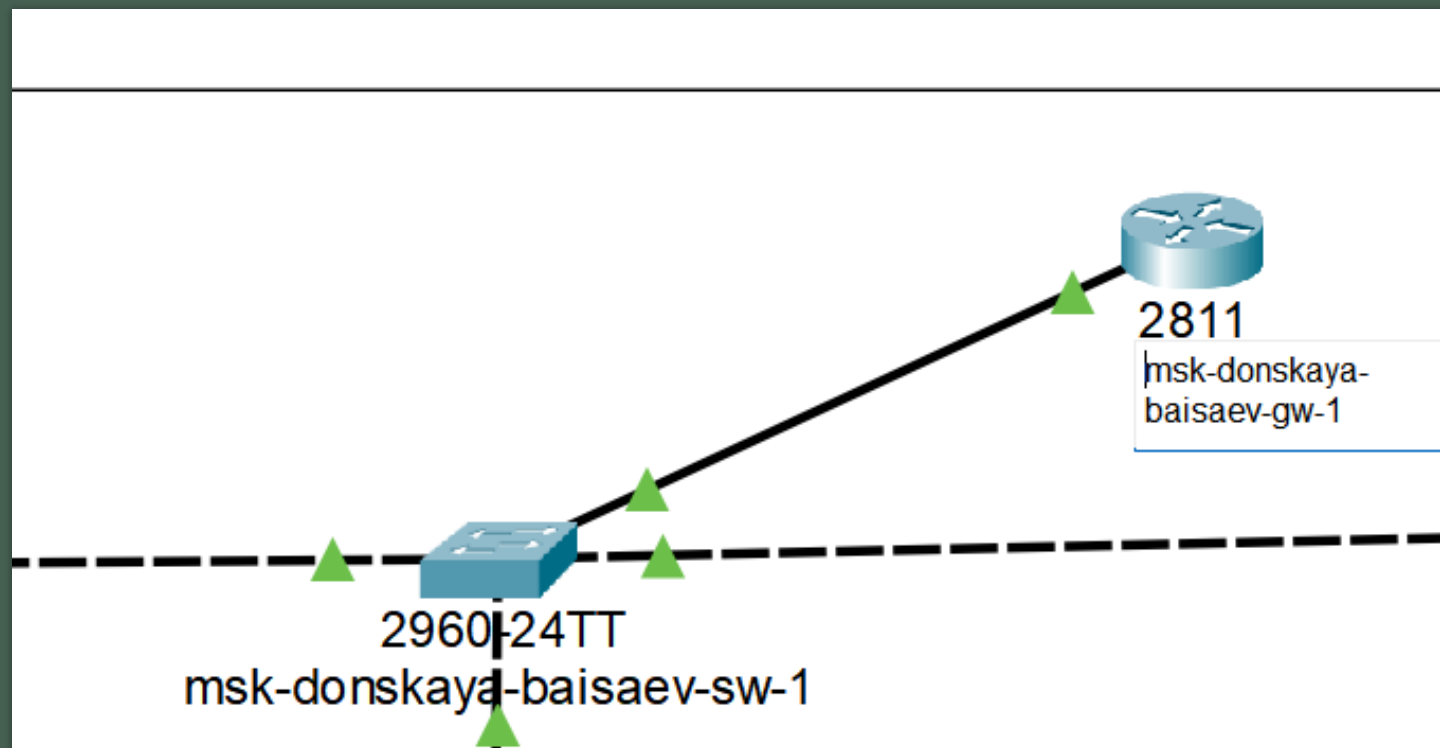
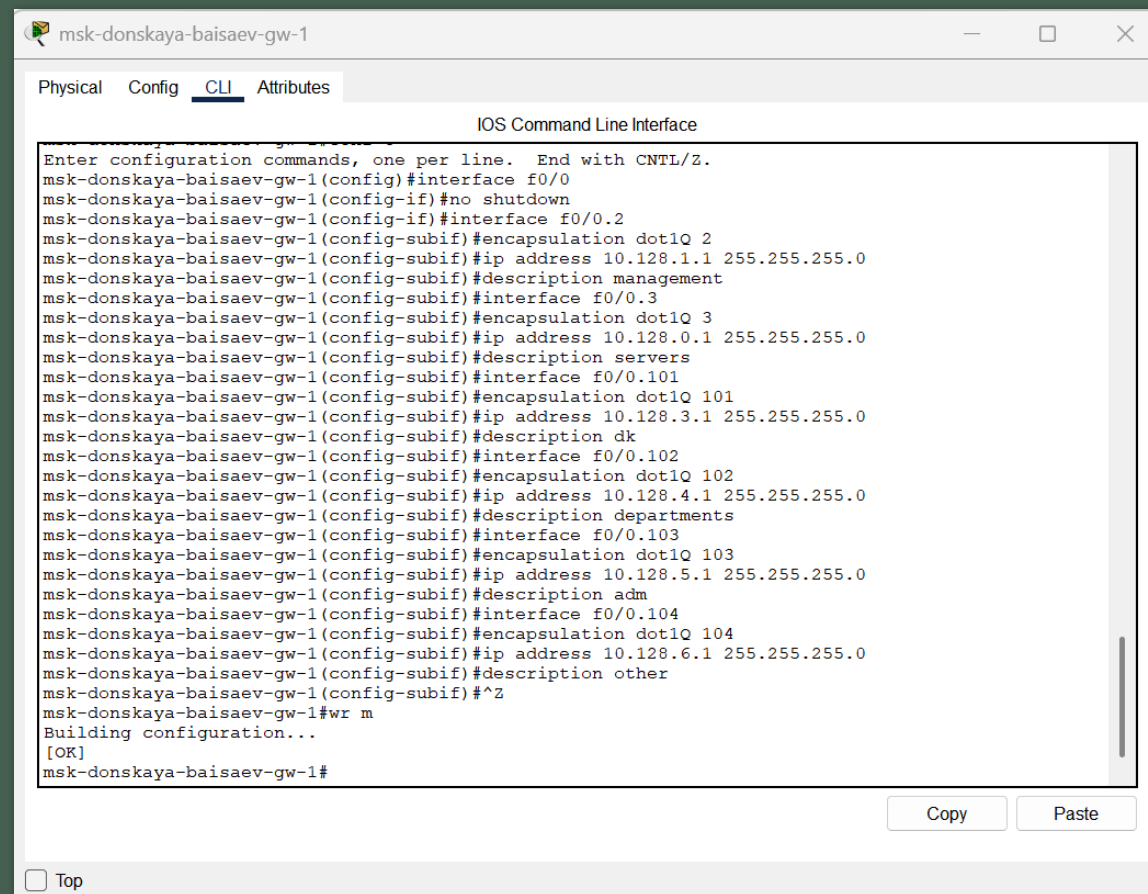


Рис. 1.5. Изменение на схеме наименование маршрутизатора Cisco 2811.

Настройки



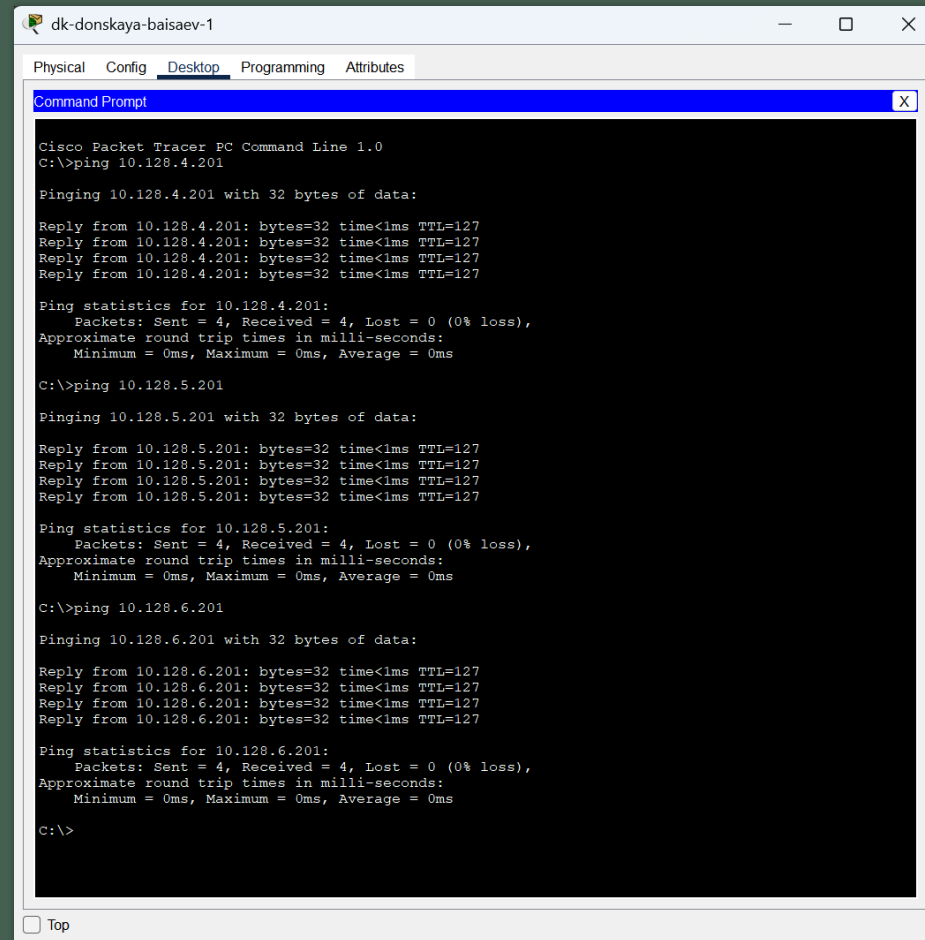
The screenshot shows a window titled 'msk-donskaya-baisaev-gw-1' with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the 'IOS Command Line Interface'. The interface shows a series of configuration commands for interface f0/0 and its subinterfaces f0/0.2 through f0/0.104. Each subinterface is configured with a specific encapsulation (dot1Q), an IP address, and a description. The commands are as follows:

```
msk-donskaya-baisaev-gw-1(config)#interface f0/0
msk-donskaya-baisaev-gw-1(config-if)#no shutdown
msk-donskaya-baisaev-gw-1(config-if)#interface f0/0.2
msk-donskaya-baisaev-gw-1(config-subif)#encapsulation dot1Q 2
msk-donskaya-baisaev-gw-1(config-subif)#ip address 10.128.1.1 255.255.255.0
msk-donskaya-baisaev-gw-1(config-subif)#description management
msk-donskaya-baisaev-gw-1(config-subif)#interface f0/0.3
msk-donskaya-baisaev-gw-1(config-subif)#encapsulation dot1Q 3
msk-donskaya-baisaev-gw-1(config-subif)#ip address 10.128.0.1 255.255.255.0
msk-donskaya-baisaev-gw-1(config-subif)#description servers
msk-donskaya-baisaev-gw-1(config-subif)#interface f0/0.101
msk-donskaya-baisaev-gw-1(config-subif)#encapsulation dot1Q 101
msk-donskaya-baisaev-gw-1(config-subif)#ip address 10.128.3.1 255.255.255.0
msk-donskaya-baisaev-gw-1(config-subif)#description dk
msk-donskaya-baisaev-gw-1(config-subif)#interface f0/0.102
msk-donskaya-baisaev-gw-1(config-subif)#encapsulation dot1Q 102
msk-donskaya-baisaev-gw-1(config-subif)#ip address 10.128.4.1 255.255.255.0
msk-donskaya-baisaev-gw-1(config-subif)#description departments
msk-donskaya-baisaev-gw-1(config-subif)#interface f0/0.103
msk-donskaya-baisaev-gw-1(config-subif)#encapsulation dot1Q 103
msk-donskaya-baisaev-gw-1(config-subif)#ip address 10.128.5.1 255.255.255.0
msk-donskaya-baisaev-gw-1(config-subif)#description adm
msk-donskaya-baisaev-gw-1(config-subif)#interface f0/0.104
msk-donskaya-baisaev-gw-1(config-subif)#encapsulation dot1Q 104
msk-donskaya-baisaev-gw-1(config-subif)#ip address 10.128.6.1 255.255.255.0
msk-donskaya-baisaev-gw-1(config-subif)#description other
msk-donskaya-baisaev-gw-1(config-subif)#^Z
msk-donskaya-baisaev-gw-1#wr m
Building configuration...
[OK]
msk-donskaya-baisaev-gw-1#
```

At the bottom of the window, there are 'Copy' and 'Paste' buttons, and a 'Top' button with a checkbox.

Рис. 1.6. Настройка на интерфейсе f0/0 маршрутизатора msk-donskaya-baisaev-gw-1 виртуальных интерфейсов, соответствующих номерам VLAN. Настройка соответствующих IP-адресов на виртуальных интерфейсах согласно таблице IP-адресов.

Ping



```
dk-donskaya-baisaev-1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.128.4.201

Pinging 10.128.4.201 with 32 bytes of data:

Reply from 10.128.4.201: bytes=32 time<1ms TTL=127
Reply from 10.128.4.201: bytes=32 time<1ms TTL=127
Reply from 10.128.4.201: bytes=32 time<1ms TTL=127
Reply from 10.128.4.201: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.4.201:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.128.5.201

Pinging 10.128.5.201 with 32 bytes of data:

Reply from 10.128.5.201: bytes=32 time<1ms TTL=127
Reply from 10.128.5.201: bytes=32 time<1ms TTL=127
Reply from 10.128.5.201: bytes=32 time<1ms TTL=127
Reply from 10.128.5.201: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.5.201:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.128.6.201

Pinging 10.128.6.201 with 32 bytes of data:

Reply from 10.128.6.201: bytes=32 time<1ms TTL=127
Reply from 10.128.6.201: bytes=32 time<1ms TTL=127
Reply from 10.128.6.201: bytes=32 time<1ms TTL=127
Reply from 10.128.6.201: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.6.201:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Рис. 1.7. Проверка доступности оконечных устройств из разных VLAN.

ВЫВОД

- В ходе выполнения лабораторной работы мы научились настраивать статическую маршрутизацию VLAN в сети.

Спасибо за внимание!