

РОССИЙСКИЙ УНИВЕРСИТЕТ ДРУЖБЫ НАРОДОВ
Факультет физико-математических и естественных наук
Кафедра прикладной информатики и теории вероятностей

ОТЧЕТ
ПО ЛАБОРАТОРНОЙ РАБОТЕ № 2

дисциплина: Администрирование локальных сетей

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Группа: НФИ-бд-03-19

МОСКВА

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2.1. Цель работы:

Получить основные навыки по начальному конфигурированию оборудования Cisco.

2.2. Задание

1. Сделать предварительную настройку маршрутизатора:

- задать имя в виде «город-территория-учётная_запись тип_оборудования-номер» (см. пункт 2.5), например msk-donskaya-osbender-gw-1;
- задать интерфейсу Fast Ethernet с номером 0 ip-адрес 192.168.1.254 и маску 255.255.255.0, затем поднять интерфейс;
- задать пароль для доступа к привилегированному режиму (сначала в открытом виде, затем — в зашифрованном);
- настроить доступ к оборудованию сначала через telnet, затем — через ssh (используя в качестве имени домена donskaya.rudn.edu);
- сохранить и экспортировать конфигурацию в отдельный файл.

2. Сделать предварительную настройку коммутатора:

- задать имя в виде «город-территория-учётная_запись тип_оборудования-номер» (см. пункт 2.5), например msk-donskaya-osbender-sw-1;
- задать интерфейсу vlan 2 ip-адрес 192.168.2.1 и маску 255.255.255.0, затем поднять интерфейс;
- привязать интерфейс Fast Ethernet с номером 1 к vlan 2;
- задать в качестве адреса шлюза по умолчанию адрес 192.168.2.254;
- задать пароль для доступа к привилегированному режиму (сначала в открытом виде, затем — в зашифрованном);
- настроить доступ к оборудованию сначала через telnet, затем — через ssh (используя в качестве имени домена donskaya.rudn.edu);
- для пользователя admin задать доступ 1-го уровня по паролю;
- сохранить и экспортировать конфигурацию в отдельный файл.

2.4. Последовательность выполнения работы

1. В логической рабочей области Packet Tracer разместила коммутатор, маршрутизатор и 2 оконечных устройства типа PC, соединила один PC с маршрутизатором, другой PC — с коммутатором.

Настройка маршрутизатора:

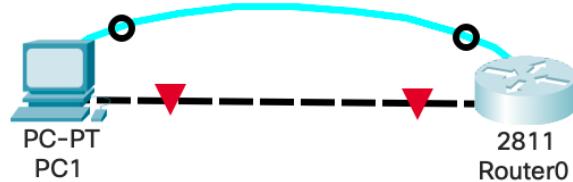


Рисунок 1. Построение сети

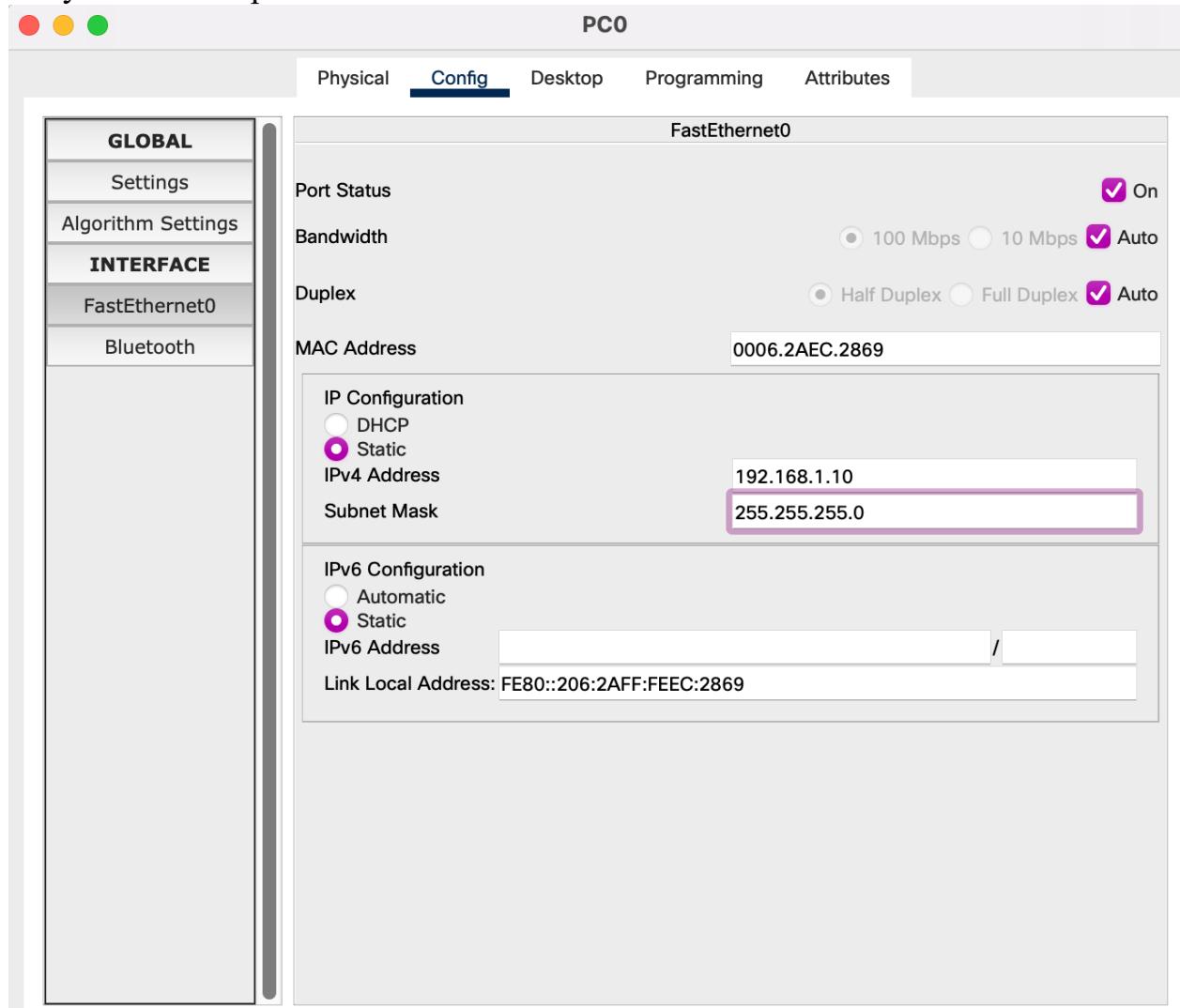


Рисунок 2. Задание ip адреса PC0.

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router con0 is now available

Press RETURN to get started.

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname msk-donskaya-vmshutenko-gw-1
^
% Invalid input detected at '^' marker.

Router(config)#hostname msk-donskaya-vmshutenko-gw-1
msk-donskaya-vmshutenko-gw-1(config)#interface f0/0
msk-donskaya-vmshutenko-gw-1(config-if)#no shutdown

msk-donskaya-vmshutenko-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-donskaya-vmshutenko-gw-1(config-if)#ip address 192.168.1.254 255.255.255.0
msk-donskaya-vmshutenko-gw-1(config-if)#exit
msk-donskaya-vmshutenko-gw-1(config)#[
```

Command+F6 to exit CLI focus

Copy

Paste

Рисунок 3. Настройка маршрутизатора.

Command+F6 to exit CLI focus

Copy

Paste

Top

Physical Config **Desktop** Programming Attributes

Command Prompt X

```
Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::206:2AFF:FE00:2869
IPv6 Address.....: ::

IPv4 Address.....: 192.168.1.10
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: ::

IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::

C:\>ping 192.168.1.254

Pinging 192.168.1.254 with 32 bytes of data:

Reply from 192.168.1.254: bytes=32 time=1ms TTL=255
Reply from 192.168.1.254: bytes=32 time=5ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\>
```

Рисунок 4. Ping и ipconfig.

PC0

Physical Config Desktop Programming Attributes

Command Prompt

```
FastEthernet0 Connection: (default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::206:2AFF:FE0C:2869
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.10
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
0.0.0.0

Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0

C:\>ping 192.168.1.254
Pinging 192.168.1.254 with 32 bytes of data:
Reply from 192.168.1.254: bytes=32 time=1ms TTL=255
Reply from 192.168.1.254: bytes=32 time=5ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open
[Connection to 192.168.1.254 closed by foreign host]
C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open
[Connection to 192.168.1.254 closed by foreign host]
C:\>
```

Top

Рисунок 5. Попытка подключиться через telnet.

PC0

Physical Config Desktop Programming Attributes

Command Prompt X

```
Connection-specific DNS Suffix..:
Link-local IPv6 Address..... :: 
IPv6 Address..... :: 
IPv4 Address..... 0.0.0.0
Subnet Mask..... 0.0.0.0
Default Gateway..... 0.0.0.0

C:\>ping 192.168.1.254

Pinging 192.168.1.254 with 32 bytes of data:

Reply from 192.168.1.254: bytes=32 time=1ms TTL=255
Reply from 192.168.1.254: bytes=32 time=5ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open

[Connection to 192.168.1.254 closed by foreign host]
C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open

User Access Verification

Password:
msk-donskaya-vmshutenko-gw-1>enable
% No password set.
msk-donskaya-vmshutenko-gw-1>exit

[Connection to 192.168.1.254 closed by foreign host]
C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open

User Access Verification

Password:
msk-donskaya-vmshutenko-gw-1>enable
Password:
msk-donskaya-vmshutenko-gw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-vmshutenko-gw-1(config)#|
```

Top

Top



Рисунок 6. Подключение через telnet.

The screenshot shows a Cisco Router's Configuration mode (CLI) interface. The window title is "Router0". The tabs at the top are "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is the heading "IOS Command Line Interface". The main area contains the following configuration commands:

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname msk-donskaya-vmshutenko-gw-1
^
% Invalid input detected at '^' marker.

Router(config)#hostname msk-donskaya-vmshutenko-gw-1
msk-donskaya-vmshutenko-gw-1(config)#interface f0/0
msk-donskaya-vmshutenko-gw-1(config-if)#no shutdown

msk-donskaya-vmshutenko-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-donskaya-vmshutenko-gw-1(config-if)#ip address 192.168.1.254 255.255.255.0
msk-donskaya-vmshutenko-gw-1(config-if)#exit
msk-donskaya-vmshutenko-gw-1(config)#line vty 0 4
msk-donskaya-vmshutenko-gw-1(config-line)#password cisco
msk-donskaya-vmshutenko-gw-1(config-line)#login
msk-donskaya-vmshutenko-gw-1(config-line)#exit
msk-donskaya-vmshutenko-gw-1(config)#line console 0
msk-donskaya-vmshutenko-gw-1(config-line)#password cisco
msk-donskaya-vmshutenko-gw-1(config-line)#login
msk-donskaya-vmshutenko-gw-1(config-line)#exit
msk-donskaya-vmshutenko-gw-1(config)#enable secret cisco
msk-donskaya-vmshutenko-gw-1(config)#service password-encryption
msk-donskaya-vmshutenko-gw-1(config)#username admin privilege
%SYS-5-CONFIG_I: Configured from console by console

% Incomplete command.
msk-donskaya-vmshutenko-gw-1(config)#exit
msk-donskaya-vmshutenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-vmshutenko-gw-1#
```

At the bottom left of the CLI window, there is a note: "Command+F6 to exit CLI focus". To the right of the window are two buttons: "Copy" and "Paste". Below the window is a toolbar with a "Top" button.

Рисунок 7. Настройка подключение через telnet.

АДМИНИСТР

Router0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
msk-donskaya-vmshutenko-gw-1(config-if)#exit
msk-donskaya-vmshutenko-gw-1(config)#line vty 0 4
msk-donskaya-vmshutenko-gw-1(config-line)#password cisco
msk-donskaya-vmshutenko-gw-1(config-line)#login
msk-donskaya-vmshutenko-gw-1(config-line)#exit
msk-donskaya-vmshutenko-gw-1(config)#line console 0
msk-donskaya-vmshutenko-gw-1(config-line)#password cisco
msk-donskaya-vmshutenko-gw-1(config-line)#login
msk-donskaya-vmshutenko-gw-1(config-line)#exit
msk-donskaya-vmshutenko-gw-1(config)#enable secret cisco
msk-donskaya-vmshutenko-gw-1(config)#service password-encryption
msk-donskaya-vmshutenko-gw-1(config)#username admin privilege 1 secret cisco
%SYS-5-CONFIG_I: Configured from console by console

% Incomplete command.
msk-donskaya-vmshutenko-gw-1(config)#exit
msk-donskaya-vmshutenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-vmshutenko-gw-1#enable
msk-donskaya-vmshutenko-gw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-vmshutenko-gw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-vmshutenko-gw-1(config)#ip domain-name donskyay.rudn.edu
msk-donskaya-vmshutenko-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-vmshutenko-gw-1.donskyay.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-vmshutenko-gw-1(config)#line vty 0 4
*Mar 1 1:21:26.581: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-vmshutenko-gw-1(config-line)#transport input ssh, telnet
^
% Invalid input detected at '^' marker.

msk-donskaya-vmshutenko-gw-1(config-line)#transport input ssh telnet
^
% Invalid input detected at '^' marker.

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

```

Command+F6 to exit CLI focus

Top

Copy Paste

Рисунок 8. Настройка подключение через ssh.

The screenshot shows a software application window titled "PC0" at the top. Below the title bar is a navigation menu with tabs: "Physical", "Config", "Desktop" (which is highlighted in blue), "Programming", and "Attributes". A sub-menu window titled "Command Prompt" is open, displaying a series of command-line interactions. The text in the window is as follows:

```
Trying 192.168.1.254 ...Open
[Connection to 192.168.1.254 closed by foreign host]
C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open

User Access Verification

Password:
msk-donskaya-vmshutenko-gw-1>enable
% No password set.
msk-donskaya-vmshutenko-gw-1>exit

[Connection to 192.168.1.254 closed by foreign host]
C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open

User Access Verification

Password:
msk-donskaya-vmshutenko-gw-1>enable
Password:
msk-donskaya-vmshutenko-gw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-vmshutenko-gw-1(config)#exit
msk-donskaya-vmshutenko-gw-1#exit

[Connection to 192.168.1.254 closed by foreign host]
C:\>telnet 192.168.1.254
Trying 192.168.1.254 ...Open

[Connection to 192.168.1.254 closed by foreign host]
C:\>ssh 192.168.1.254
Invalid Command.

C:\>ssh /?
Packet Tracer PC SSH

Usage: SSH -l username target

C:\>SSH -l admin 192.168.1.254

Password:

msk-donskaya-vmshutenko-gw-1>enable
Password:
msk-donskaya-vmshutenko-gw-1#|
```

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

Рисунок 9. Попытка подключения через telnet, ssh.

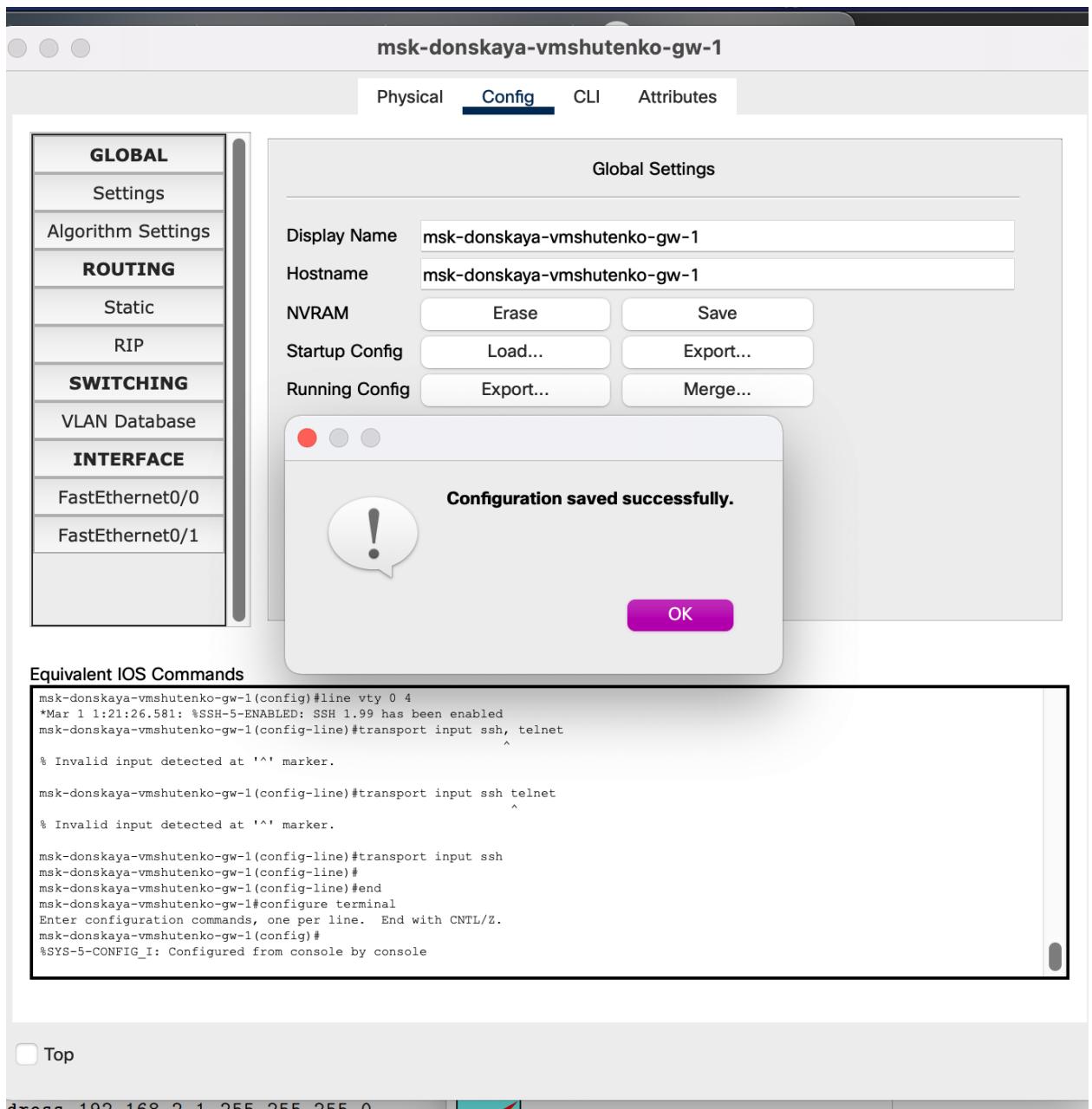


Рисунок 10. Сохранение и экспорт в отдельный файл.

Настройка коммутатора:

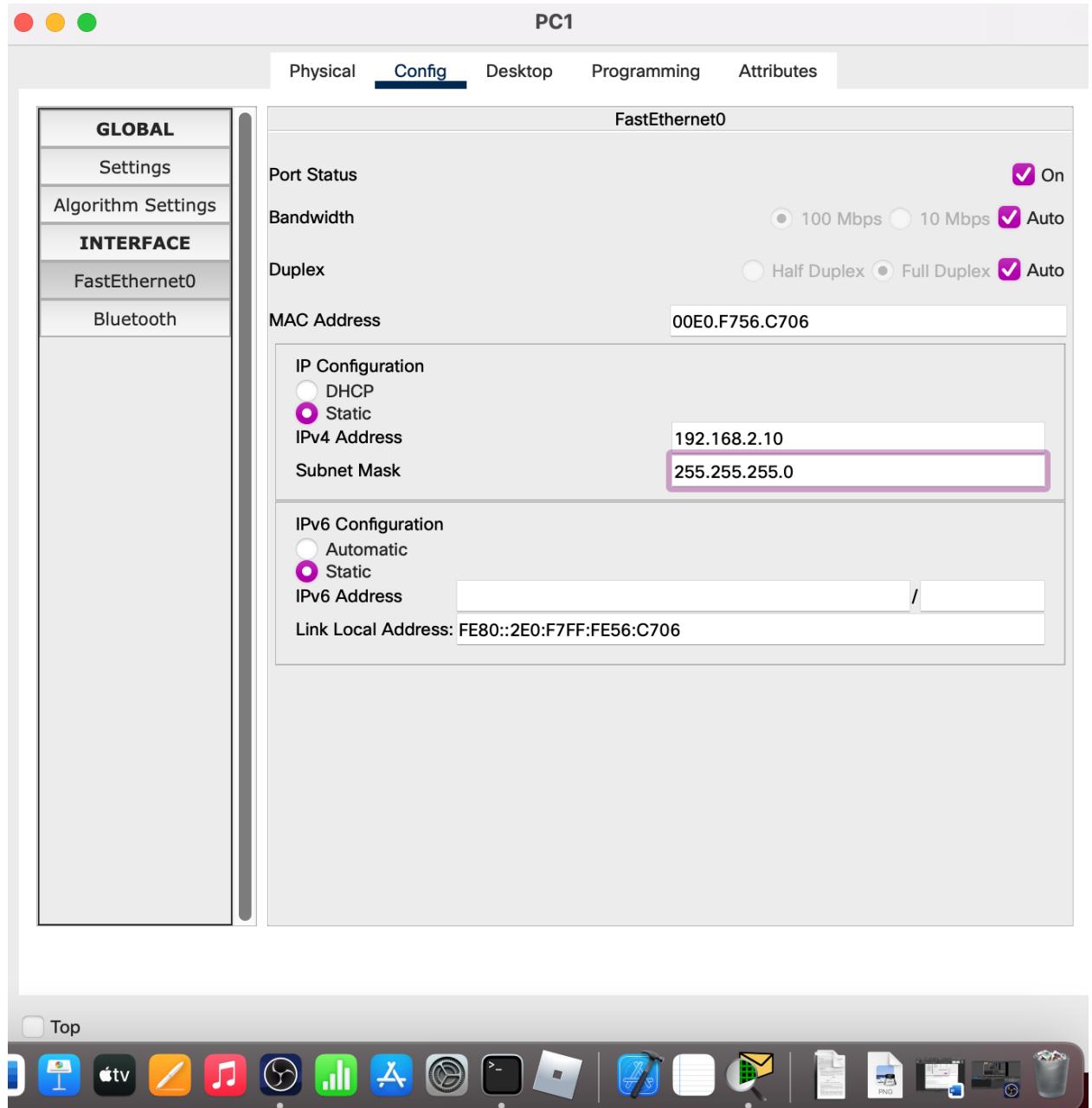


Рисунок 11. Настройка IP-адреса для PC1.

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Motherboard revision number      : B0
Model number                    : WS-C2960-24TT-L
System serial number            : FOC1010X104
Top Assembly Part Number       : 800-27221-02
Top Assembly Revision Number   : A0
Version ID                      : V02
CLEI Code Number                : COM3L00BRA
Hardware Board Revision Number : 0x01

Switch Ports Model             : SW Version           : SW Image
-----  -----  -----
*    1 26    WS-C2960-24TT-L  15.0(2)SE4        C2960-LANBASEK9-M

Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE4, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2013 by Cisco Systems, Inc.
Compiled Wed 26-Jun-13 02:49 by mnnguyen

Press RETURN to get started!

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-vmshutenko-sw-1
msk-donskaya-vmshutenko-sw-1(config)#interface vlan2
msk-donskaya-vmshutenko-sw-1(config-if)#no shutdown
msk-donskaya-vmshutenko-sw-1(config-if)#ip address 192.168.2.1 255.255.255.0
msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#interface f0/1
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#interface f0/1
msk-donskaya-vmshutenko-sw-1(config-if)#switchport mode access
msk-donskaya-vmshutenko-sw-1(config-if)#switchport access vlan 2
% Access VLAN does not exist. Creating vlan 2
msk-donskaya-vmshutenko-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan2, changed state to up

```

Command+F6 to exit CLI focus

Top



Copy Paste

Рисунок 12. Настройка vlan и коммутатора.

The screenshot shows a Cisco Switch interface titled "Switch0". The top navigation bar includes tabs for "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is a section titled "IOS Command Line Interface". The main area displays the following configuration script:

```
Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE4, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2013 by Cisco Systems, Inc.
Compiled Wed 26-Jun-13 02:49 by mnguyen

Press RETURN to get started!

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-vmshutenko-sw-1
msk-donskaya-vmshutenko-sw-1(config)#interface vlan2
msk-donskaya-vmshutenko-sw-1(config-if)#no shutdown
msk-donskaya-vmshutenko-sw-1(config-if)#ip address 192.168.2.1 255.255.255.0
msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#interface f0/1
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#interface f0/1
msk-donskaya-vmshutenko-sw-1(config-if)#switchport mode access
msk-donskaya-vmshutenko-sw-1(config-if)#switchport access vlan 2
% Access VLAN does not exist. Creating vlan 2
msk-donskaya-vmshutenko-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan2, changed state to up

msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#ip default-gateway 192.168.2.254
msk-donskaya-vmshutenko-sw-1(config)#line vty 0 4
msk-donskaya-vmshutenko-sw-1(config-line)#password cisco
msk-donskaya-vmshutenko-sw-1(config-line)#login
msk-donskaya-vmshutenko-sw-1(config-line)#line console 0
msk-donskaya-vmshutenko-sw-1(config-line)#password cisco
msk-donskaya-vmshutenko-sw-1(config-line)#login
msk-donskaya-vmshutenko-sw-1(config-line)#exit
msk-donskaya-vmshutenko-sw-1(config)#enable secret cisco
msk-donskaya-vmshutenko-sw-1(config)#service password-encryption
msk-donskaya-vmshutenko-sw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-vmshutenko-sw-1(config)#


```

At the bottom left, there is a "Command+F6 to exit CLI focus" instruction. On the right side, there are "Copy" and "Paste" buttons. A "Top" button is located at the bottom left of the main window.

Рисунок 13. Настройка подключения через telnet.

The screenshot shows a software interface titled "PC1". At the top, there is a menu bar with tabs: Physical, Config, Desktop (which is selected), Programming, and Attributes. Below the menu is a blue header bar with the text "Command Prompt" and a close button (X). The main area contains the following text:

```
Link-local IPv6 Address.....: FE80::2E0:F7FF:FE56:C706
IPv6 Address.....: ::
IPv4 Address.....: 192.168.2.10
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
0.0.0.0

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0

C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>telnet 192.168.2.1
Trying 192.168.2.1 ...Open

[Connection to 192.168.2.1 closed by foreign host]
C:\>telnet 192.168.2.1
Trying 192.168.2.1 ...Open

[Connection to 192.168.2.1 closed by foreign host]
C:\>telnet 192.168.2.1
Trying 192.168.2.1 ...Open

User Access Verification

Password:
msk-donskaya-vmshutenko-sw-1>enable
Password:
msk-donskaya-vmshutenko-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-vmshutenko-sw-1(config)#
```

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

Рисунок 14. Ping, ipconfig, подключение через telnet

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
msk-donskaya-vmshutenko-sw-1(config-if)# no shutdown
msk-donskaya-vmshutenko-sw-1(config-if)#ip address 192.168.2.1 255.255.255.0
msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#interface f0/1
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#interface f0/1
msk-donskaya-vmshutenko-sw-1(config-if)#switchport mode access
msk-donskaya-vmshutenko-sw-1(config-if)#switchport access vlan 2
% Access VLAN does not exist. Creating vlan 2
msk-donskaya-vmshutenko-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan2, changed state to up

msk-donskaya-vmshutenko-sw-1(config-if)#exit
msk-donskaya-vmshutenko-sw-1(config)#ip default-gateway 192.168.2.254
msk-donskaya-vmshutenko-sw-1(config)#line vty 0 4
msk-donskaya-vmshutenko-sw-1(config-line)#password cisco
msk-donskaya-vmshutenko-sw-1(config-line)#login
msk-donskaya-vmshutenko-sw-1(config-line)#line console 0
msk-donskaya-vmshutenko-sw-1(config-line)#password cisco
msk-donskaya-vmshutenko-sw-1(config-line)#login
msk-donskaya-vmshutenko-sw-1(config-line)#exit
msk-donskaya-vmshutenko-sw-1(config)#enable secret cisco
msk-donskaya-vmshutenko-sw-1(config)#service password-encryption
msk-donskaya-vmshutenko-sw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-vmshutenko-sw-1(config)#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-vmshutenko-sw-1(config)#ip domain-name donskaya.rudn.edu
msk-donskaya-vmshutenko-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-vmshutenko-sw-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-vmshutenko-sw-1(config)#line vty 0 4
*Mar 1 0:31:33.271: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-vmshutenko-sw-1(config-line)#transport input ssh
msk-donskaya-vmshutenko-sw-1(config-line)#

```

Command+F6 to exit CLI focus Copy Paste

Top

Рисунок 15. Настройка подключения через ssh.

PC1

Physical Config Desktop Programming Attributes

Command Prompt

```
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>telnet 192.168.2.1
Trying 192.168.2.1 ...Open

[Connection to 192.168.2.1 closed by foreign host]
C:\>telnet 192.168.2.1
Trying 192.168.2.1 ...Open

[Connection to 192.168.2.1 closed by foreign host]
C:\>telnet 192.168.2.1
Trying 192.168.2.1 ...Open

User Access Verification

Password:
msk-donskaya-vmshutenko-sw-1>enable
Password:
msk-donskaya-vmshutenko-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-vmshutenko-sw-1(config)#exit
msk-donskaya-vmshutenko-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-vmshutenko-sw-1(config)#exit
msk-donskaya-vmshutenko-sw-1#exit

[Connection to 192.168.2.1 closed by foreign host]
C:\>telnet 192.168.2.1
Trying 192.168.2.1 ...Open

[Connection to 192.168.2.1 closed by foreign host]
C:\>SSH -l 192.168.2.1
Invalid Command.

C:\>SSH -l admin 192.168.2.1

Password:

msk-donskaya-vmshutenko-sw-1>enable
Password:
msk-donskaya-vmshutenko-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-vmshutenko-sw-1(config)#exit
msk-donskaya-vmshutenko-sw-1#exit

[Connection to 192.168.2.1 closed by foreign host]
C:\>
```

Рисунок 16. Подключение через telnet, ssh.

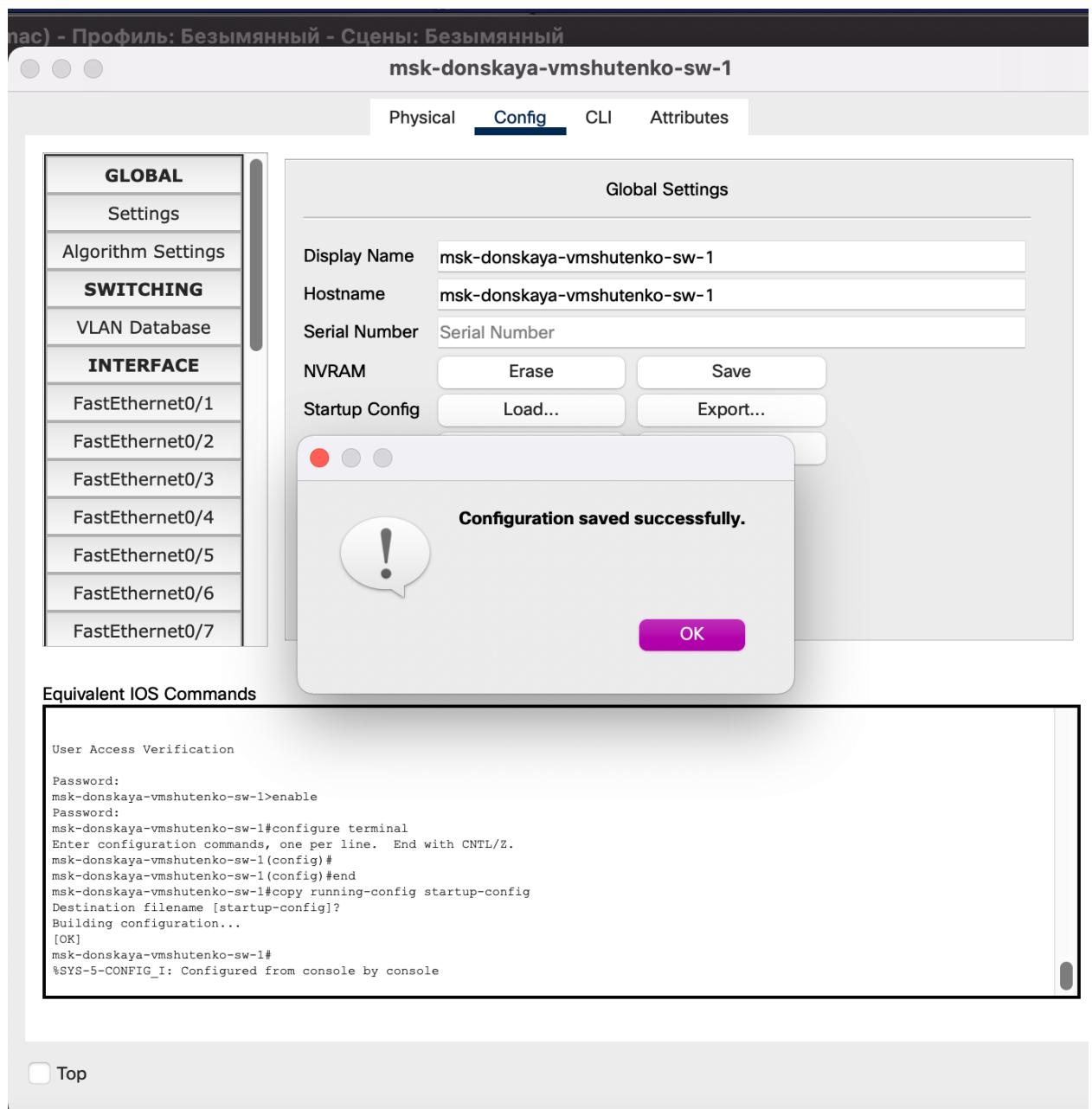


Рисунок 17. Экспорт и сохранение.

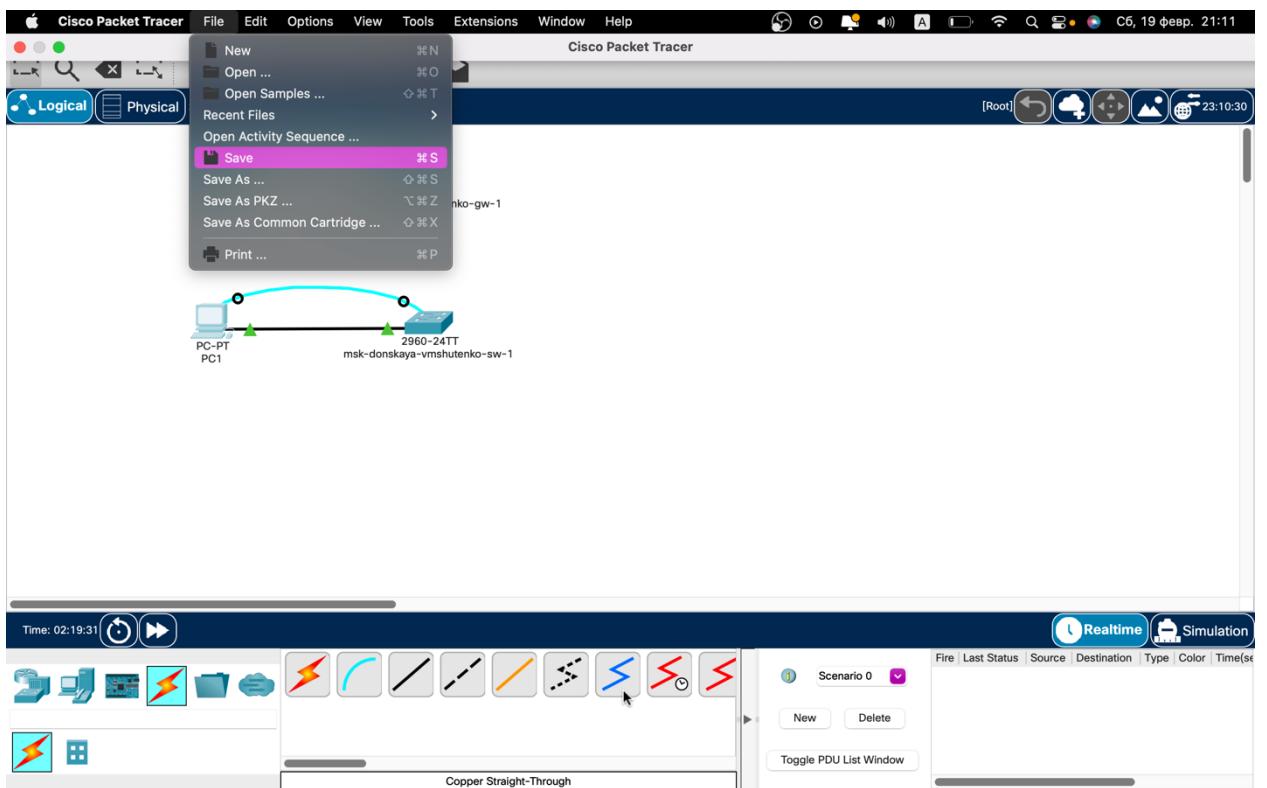


Рисунок 18. Сохранение проекта и экспорт в печать.

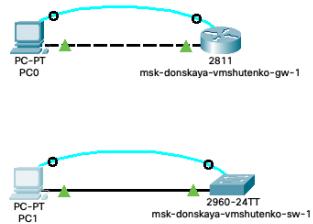


Рисунок 19. Полученная экспортом картинка.

2. Провела настройку маршрутизатора в соответствии с заданием, ориентируясь на приведённую ниже часть конфигурации маршрутизатора (см. раздел 2.4.1).
3. Провела настройку коммутатора в соответствии с заданием, ориентируясь на приведённую ниже часть конфигурации коммутатора (см. раздел 2.4.2).
4. Проверила работоспособность соединений с помощью команды ping.

5. Попробовала подключиться к коммутатору и маршрутизатору разными способами: с помощью консольного кабеля, по протоколу удалённого доступа (telnet, ssh).

2.4.1. Конфигурация маршрутизатора

Router >enable

Router#configure terminal

```
Router(config)#hostname msk-donskaya-gw-1
msk-donskaya-gw-1(config)#interface f0/0
msk-donskaya-gw-1(config-if)#no shutdown
msk-donskaya-gw-1(config-if)#ip address 192.168.1.254 255.255.255.0
msk-donskaya-gw-1(config)#line vty 0 4
msk-donskaya-gw-1(config-line)#password cisco
msk-donskaya-gw-1(config-line)#login
msk-donskaya-gw-1(config)#line console 0
msk-donskaya-gw-1(config-line)#password cisco
msk-donskaya-gw-1(config-line)#login
msk-donskaya-gw-1(config)#enable secret cisco
msk-donskaya-gw-1(config)#service password-encryption
msk-donskaya-gw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-gw-1(config)#ip domain-name donskaya.rudn.edu
msk-donskaya-gw-1(config)#crypto key generate rsa
msk-donskaya-gw-1(config)#line vty 0 4
msk-donskaya-gw-1(config-line)#transport input ssh
```

2.4.2. Конфигурация коммутатора

Switch >enable

Switch#configure terminal

```
Switch(config)#hostname msk-donskaya-sw-1
msk-donskaya-sw-1(config)#interface vlan2
msk-donskaya-sw-1(config-if)#no shutdown
msk-donskaya-sw-1(config-if)#ip address 192.168.2.1 255.255.255.0
msk-donskaya-sw-1(config)#interface f0/1
msk-donskaya-sw-1(config-if)#switchport mode access
msk-donskaya-sw-1(config-if)#switchport access vlan 2
msk-donskaya-sw-1(config)#ip default-gateway 192.168.2.254
msk-donskaya-sw-1(config)#line vty 0 4
msk-donskaya-sw-1(config-line)#password cisco
msk-donskaya-sw-1(config-line)#login
msk-donskaya-sw-1(config)#line console 0
msk-donskaya-sw-1(config-line)#password cisco
msk-donskaya-sw-1(config-line)#login
msk-donskaya-sw-1(config)#enable secret cisco
msk-donskaya-sw-1(config)#service password-encryption
msk-donskaya-sw-1(config)#username admin privilege 1 secret cisco
```

```
msk-donskaya-sw-1(config)#ip domain-name donskaya.rudn.edu
msk-donskaya-sw-1(config)#crypto key generate rsa
msk-donskaya-sw-1(config)#line vty 0 4
msk-donskaya-sw-1(config-line)#transport input ssh
```

1. Укажите возможные способы подключения к сетевому оборудованию.

Через ssh, telnet, кабель, консоль.

2. Каким типом сетевого кабеля следует подключать оконечное оборудование пользователя к маршрутизатору и почему?

Консольный кабель и кросс кабель, потому что они являются одинаковыми устройствами и оба являются дтс.

3. Каким типом сетевого кабеля следует подключать оконечное оборудование пользователя к коммутатору и почему?

Консольной кабель и прямой кабель, поскольку компьютер относится к дтс, а коммутатор к дце.

4. Каким типом сетевого кабеля следует подключать коммутатор к коммутатору и почему?

Прямой кабель

5. Укажите возможные способы настройки доступа к сетевому оборудованию по паролю.

6. Укажите возможные способы настройки удалённого доступа к сетевому оборудованию. Какой из способов предпочтительнее и почему?