

Лабораторная работа №2

Предварительная настройка оборудования Cisco

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Конфигурирование оборудования Cisco

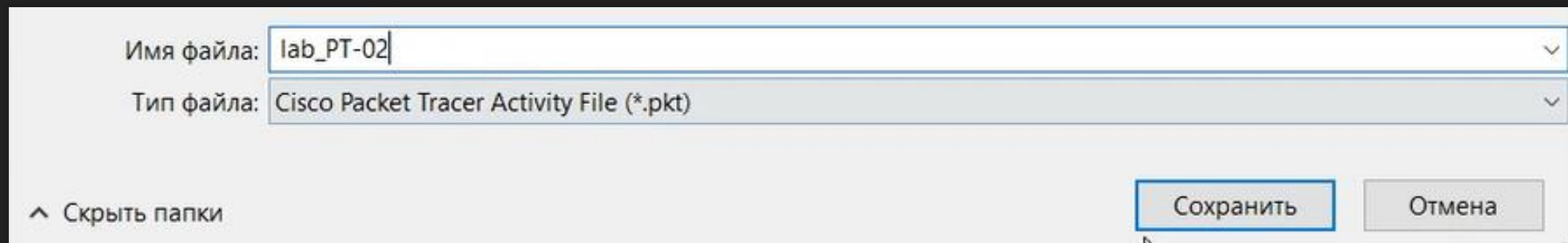


Рис. 1.1. Создание нового проекта.

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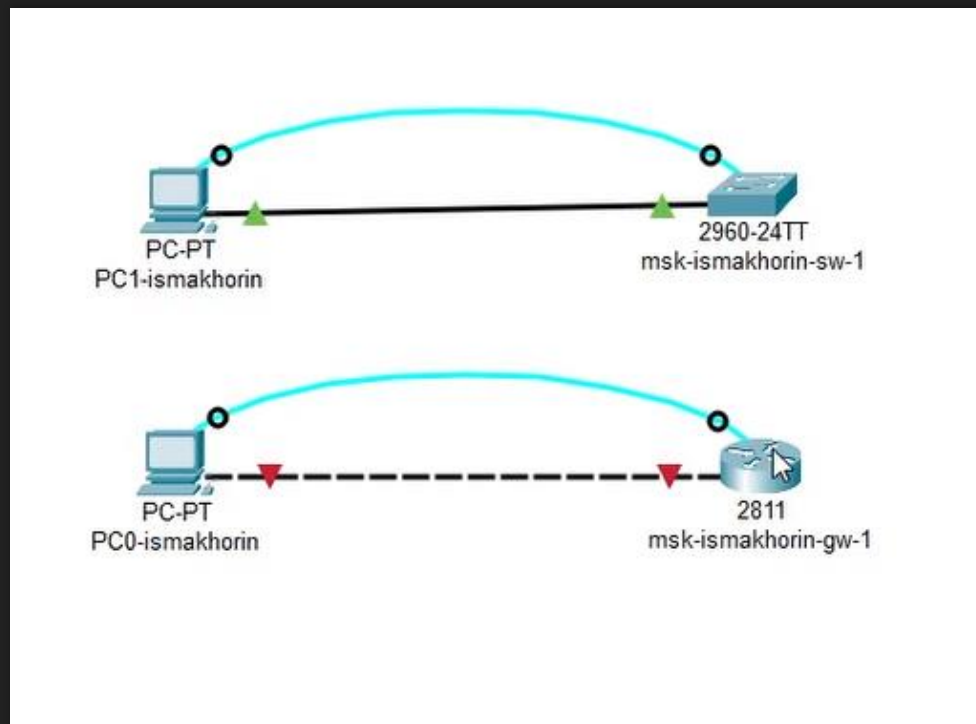


Рис. 1.2. Размещение коммутатора, маршрутизатора и двух конечных устройств. Последующие соединения.

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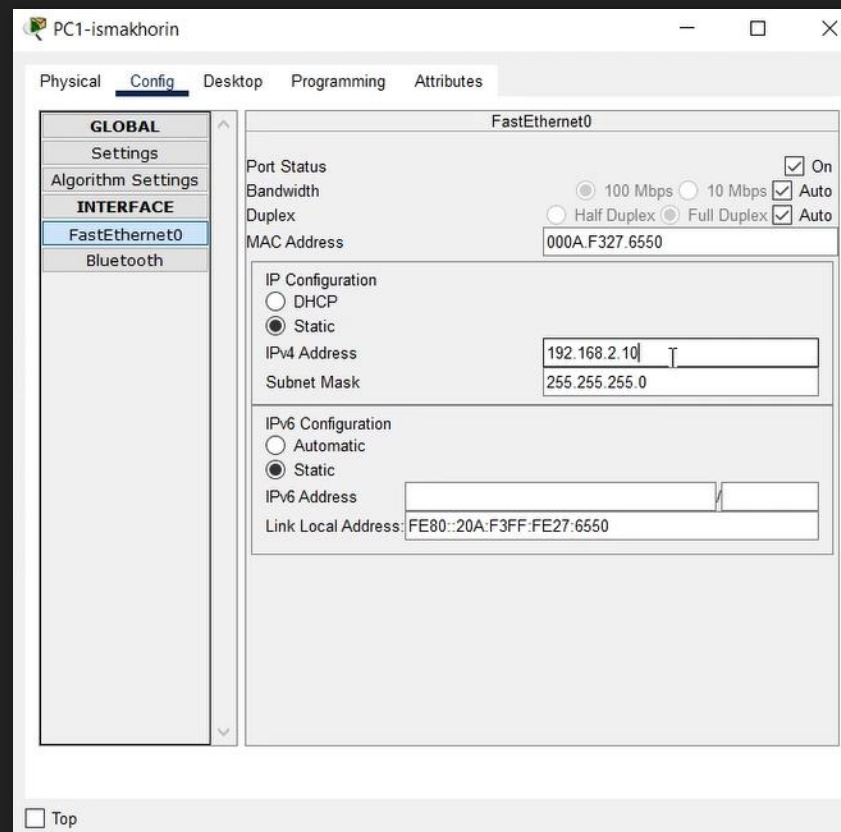
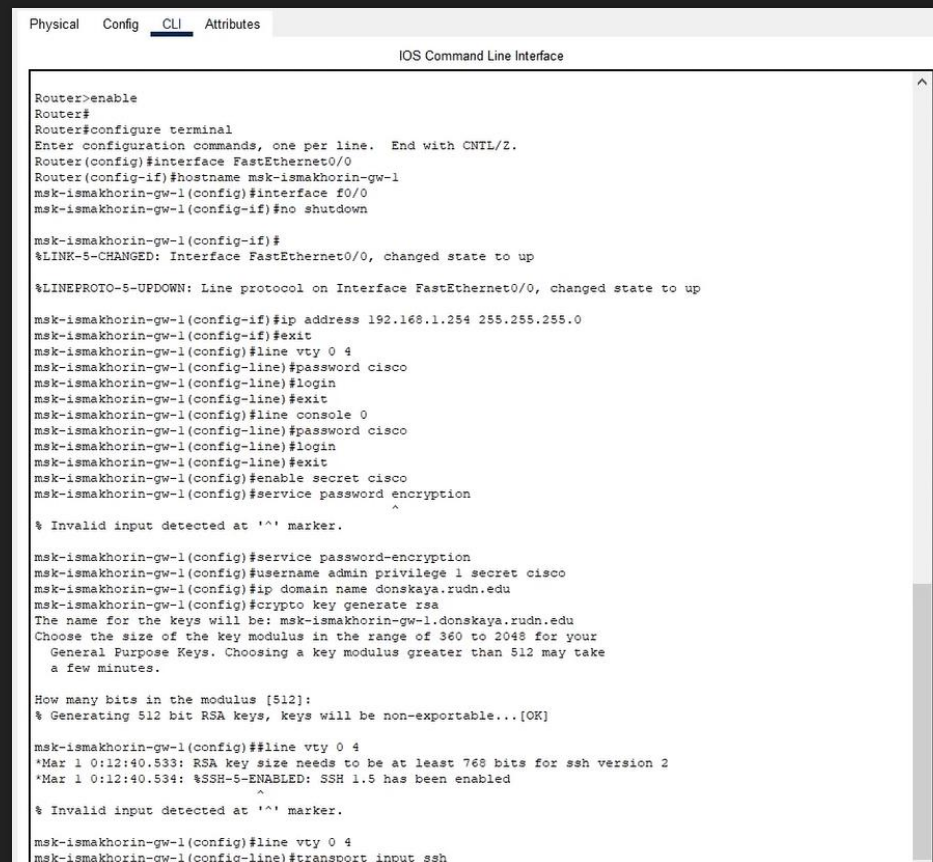


Рис. 1.3. Присвоение статического IP-адреса и маски подсети.

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```
Physical Config CLI Attributes
IOS Command Line Interface

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#hostname msk-ismakhorin-gw-1
msk-ismakhorin-gw-1(config)#interface f0/0
msk-ismakhorin-gw-1(config-if)#no shutdown

msk-ismakhorin-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-ismakhorin-gw-1(config-if)#ip address 192.168.1.254 255.255.255.0
msk-ismakhorin-gw-1(config-if)#exit
msk-ismakhorin-gw-1(config)#line vty 0 4
msk-ismakhorin-gw-1(config-line)#password cisco
msk-ismakhorin-gw-1(config-line)#login
msk-ismakhorin-gw-1(config-line)#exit
msk-ismakhorin-gw-1(config)#line console 0
msk-ismakhorin-gw-1(config-line)#password cisco
msk-ismakhorin-gw-1(config-line)#login
msk-ismakhorin-gw-1(config-line)#exit
msk-ismakhorin-gw-1(config)#enable secret cisco
msk-ismakhorin-gw-1(config)#service password encryption
^
% Invalid input detected at '^' marker.

msk-ismakhorin-gw-1(config)#service password-encryption
msk-ismakhorin-gw-1(config)#username admin privilege 1 secret cisco
msk-ismakhorin-gw-1(config)#ip domain name donskeya.rudn.edu
msk-ismakhorin-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-ismakhorin-gw-1.donskeya.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]:
% Generating 512 bit RSA keys, keys will be non-exportable...[OK]

msk-ismakhorin-gw-1(config)#line vty 0 4
*Mar 1 0:12:40.533: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:12:40.534: %SSH-5-ENABLED: SSH 1.5 has been enabled
^
% Invalid input detected at '^' marker.

msk-ismakhorin-gw-1(config)#line vty 0 4
msk-ismakhorin-gw-1(config-line)#transport input ssh
```

Рис. 1.4. Проведение настройки маршрутизатора.

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```
IOS Command Line Interface
msk-ismakhorin-sw-1(config)#ip default-gateway 192.168.2.254
^
% Invalid input detected at '^' marker.

msk-ismakhorin-sw-1(config)#ip default-gateway 192.168.2.254
msk-ismakhorin-sw-1(config)#line vty 0 4
msk-ismakhorin-sw-1(config-line)#password cisco
msk-ismakhorin-sw-1(config-line)#login
msk-ismakhorin-sw-1(config-line)#line console 0
msk-ismakhorin-sw-1(config-line)#password cisco
msk-ismakhorin-sw-1(config-line)#login
msk-ismakhorin-sw-1(config-line)#exit
msk-ismakhorin-sw-1(config)#line console 0
msk-ismakhorin-sw-1(config-line)#password cisco
msk-ismakhorin-sw-1(config-line)#login
msk-ismakhorin-sw-1(config-line)#exit
msk-ismakhorin-sw-1(config)#enable secret cisco
msk-ismakhorin-sw-1(config)#service password-encryption
^
% Invalid input detected at '^' marker.

msk-ismakhorin-sw-1(config)#service password-encryption
msk-ismakhorin-sw-1(config)#username admin privilege 1 secret cisco
msk-ismakhorin-sw-1(config)#ip domain name donsokaya.rudn.edu
msk-ismakhorin-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-ismakhorin-sw-1.donsokaya.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]:
% Generating 512 bit RSA keys, keys will be non-exportable...[OK]

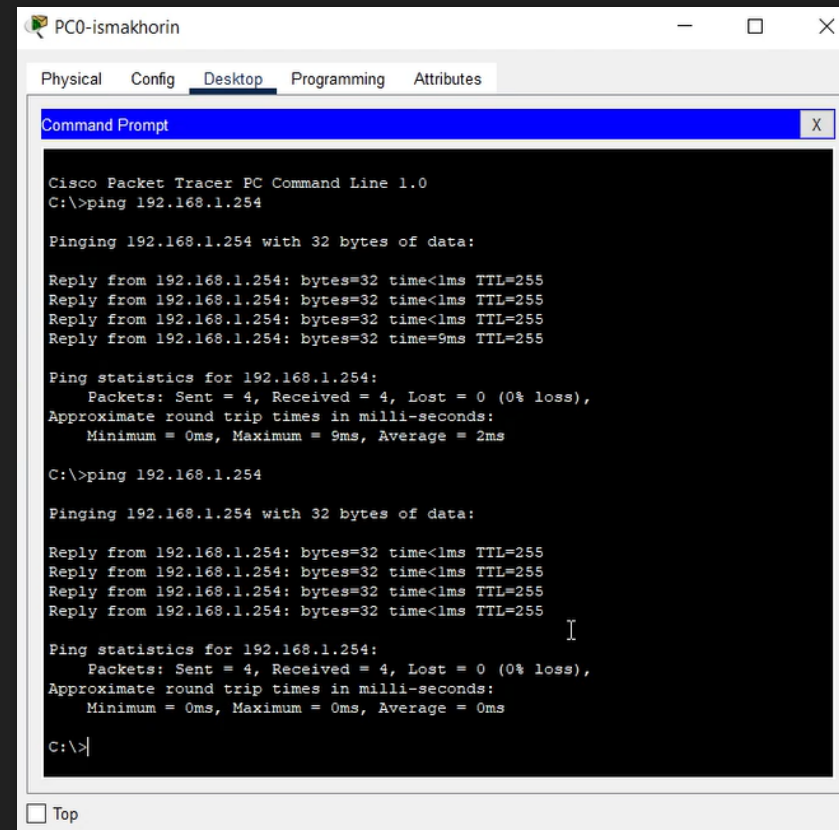
msk-ismakhorin-sw-1(config)#line vty 0 4
*Mar 1 0:19:16.159: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:19:16.159: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-ismakhorin-sw-1(config-line)#crypto key generate rsa
% You already have RSA keys defined named msk-ismakhorin-sw-1.donsokaya.rudn.edu .
% Do you really want to replace them? [yes/no]: yes
The name for the keys will be: msk-ismakhorin-sw-1.donsokaya.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]: 768
% Generating 768 bit RSA keys, keys will be non-exportable...[OK]

msk-ismakhorin-sw-1(config)#line vty 0 4
*Mar 1 0:19:55.451: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-ismakhorin-sw-1(config-line)#transport input ssh
```

Рис. 1.5. Проведение настройки коммутатора.

Конфигурирование оборудования Cisco



```
PC0-ismakhorin
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
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<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time=9ms 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 = 9ms, Average = 2ms

C:\>ping 192.168.1.254

Pinging 192.168.1.254 with 32 bytes of data:

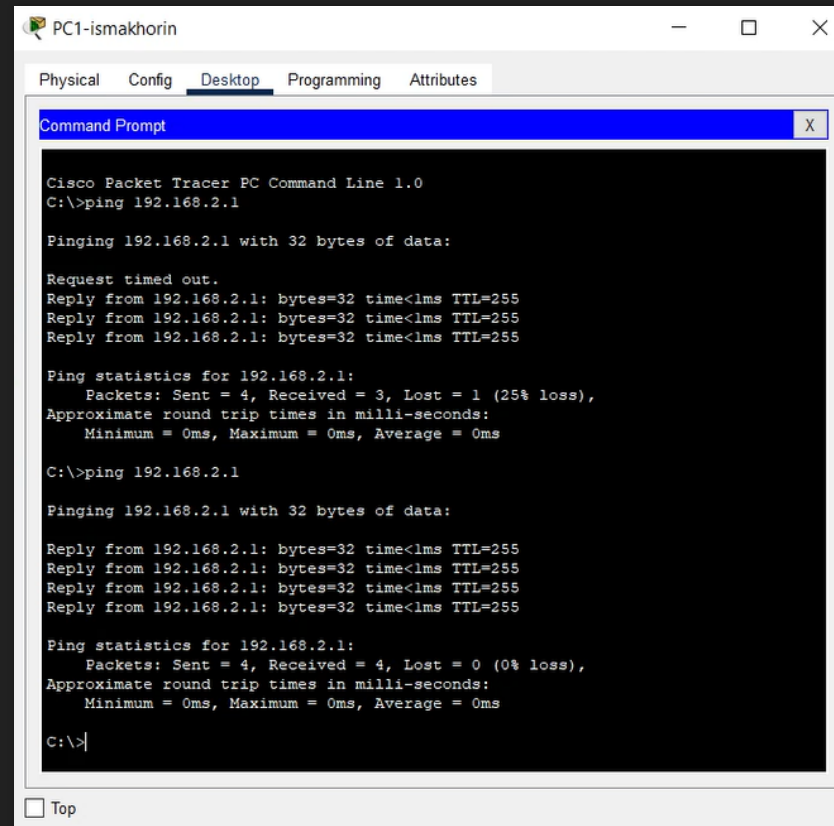
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255

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 = 0ms, Average = 0ms

C:\>
```

Рис. 1.6. Проверка работоспособности соединения PC0-ismakhorin -> msk-ismakhorin-gw-1.

Конфигурирование оборудования Cisco



```
PC1-ismakhorin
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
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<lms TTL=255
Reply from 192.168.2.1: bytes=32 time<lms TTL=255
Reply from 192.168.2.1: bytes=32 time<lms 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:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

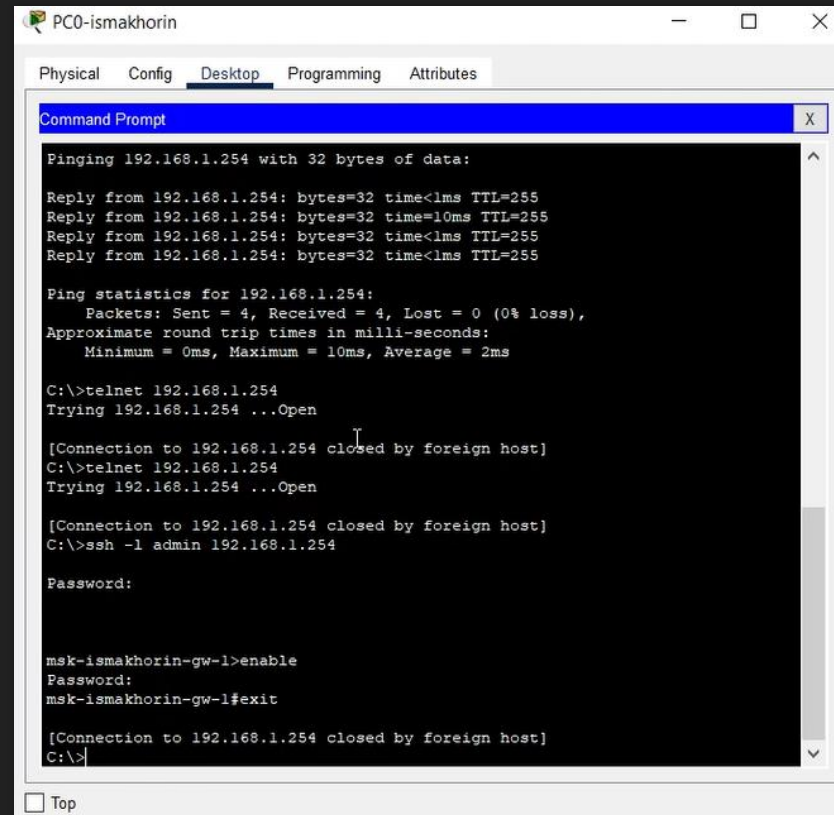
Reply from 192.168.2.1: bytes=32 time<lms TTL=255
Reply from 192.168.2.1: bytes=32 time<lms TTL=255
Reply from 192.168.2.1: bytes=32 time<lms TTL=255
Reply from 192.168.2.1: bytes=32 time<lms TTL=255

Ping statistics for 192.168.2.1:
    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 работоспособности соединения PC1-ismakhorin -> msk-ismakhorin-sw-1.

Конфигурирование оборудования Cisco



```
PC0-ismakhorin
Physical Config Desktop Programming Attributes
Command Prompt

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=10ms 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 = 10ms, Average = 2ms

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:\>ssh -l admin 192.168.1.254

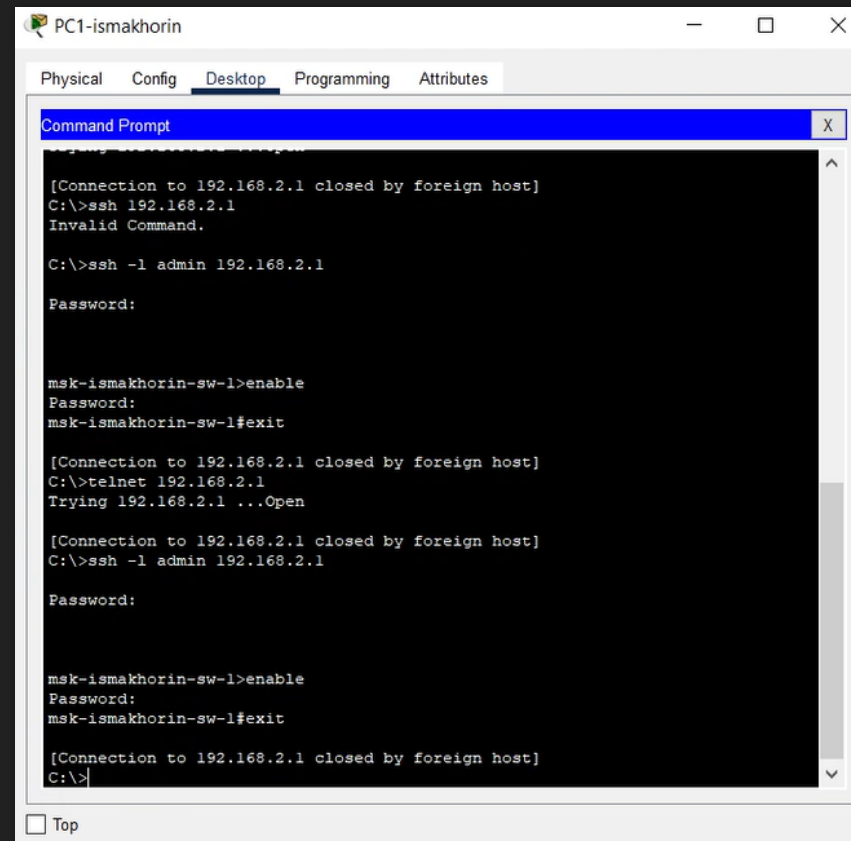
Password:

msk-ismakhorin-gw-1>enable
Password:
msk-ismakhorin-gw-1#exit

[Connection to 192.168.1.254 closed by foreign host]
C:\>
```

Рис. 1.8. Попытка подключения к маршрутизатору разными способами: с помощью консольного кабеля, по протоколу удалённого доступа (telnet, ssh).

Конфигурирование оборудования Cisco



The screenshot shows a window titled "PC1-ismakhorin" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The command prompt shows the following sequence of commands and responses:

```
[Connection to 192.168.2.1 closed by foreign host]
C:\>ssh 192.168.2.1
Invalid Command.

C:\>ssh -l admin 192.168.2.1

Password:

msk-ismakhorin-sw-1>enable
Password:
msk-ismakhorin-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 admin 192.168.2.1

Password:

msk-ismakhorin-sw-1>enable
Password:
msk-ismakhorin-sw-1#exit

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

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

Рис. 1.9. Попытка подключения к коммутатору разными способами: с помощью консольного кабеля, по протоколу удалённого доступа (telnet, ssh).

Вывод

- В ходе выполнения лабораторной работы были получены основные навыки по начальному конфигурированию оборудования Cisco.

Спасибо за внимание!