

# Лабораторная работа №2

Администрирование локальных сетей

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Получить основные навыки по начальному конфигурированию оборудования Cisco.

## Выполнение лабораторной работы

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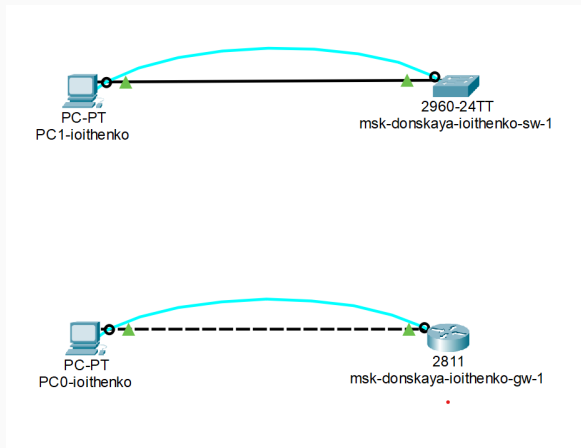
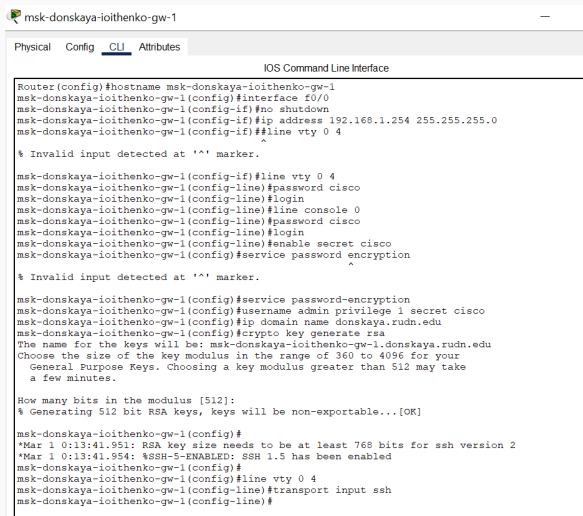


Рис. 1: Сеть



msk-donskaya-ioithenko-gw-1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router(config)#hostname msk-donskaya-ioithenko-gw-1
msk-donskaya-ioithenko-gw-1(config)#interface f0/0
msk-donskaya-ioithenko-gw-1(config-if)#no shutdown
msk-donskaya-ioithenko-gw-1(config-if)#ip address 192.168.1.254 255.255.255.0
msk-donskaya-ioithenko-gw-1(config-if)##line vty 0 4
msk-donskaya-ioithenko-gw-1(config-if)#
^
% Invalid input detected at '^' marker.

msk-donskaya-ioithenko-gw-1(config-if)#line vty 0 4
msk-donskaya-ioithenko-gw-1(config-line)#password cisco
msk-donskaya-ioithenko-gw-1(config-line)#login
msk-donskaya-ioithenko-gw-1(config-line)#line console 0
msk-donskaya-ioithenko-gw-1(config-line)#password cisco
msk-donskaya-ioithenko-gw-1(config-line)#login
msk-donskaya-ioithenko-gw-1(config-line)#enable secret cisco
msk-donskaya-ioithenko-gw-1(config)#service password encryption
msk-donskaya-ioithenko-gw-1(config)#
^
% Invalid input detected at '^' marker.

msk-donskaya-ioithenko-gw-1(config)#service password-encryption
msk-donskaya-ioithenko-gw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-ioithenko-gw-1(config)#ip domain name donskeya.rudn.edu
msk-donskaya-ioithenko-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-ioithenko-gw-1.donskeya.rudn.edu
Choose the size of the key modulus in the range of 360 to 4096 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-donskaya-ioithenko-gw-1(config)#
*Mar 1 0:13:41.951: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:13:41.954: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-donskaya-ioithenko-gw-1(config)#
msk-donskaya-ioithenko-gw-1(config)#line vty 0 4
msk-donskaya-ioithenko-gw-1(config-line)#transport input ssh
msk-donskaya-ioithenko-gw-1(config-line)#
```

Рис. 2: Конфигурация маршрутизатора

```
msk-donskaya-ioithenko-sw-1
Physical Config CLI Attributes
IOS Command Line Interface

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-ioithenko-sw-01
msk-donskaya-ioithenko-sw-01(config)#interface vlan2
msk-donskaya-ioithenko-sw-01(config-if)#no shutdown
msk-donskaya-ioithenko-sw-01(config-if)#ip address 192.168.2.1 255.255.255.0
msk-donskaya-ioithenko-sw-01(config-if)#interface f0/1
msk-donskaya-ioithenko-sw-01(config-if)#switchport mode access
msk-donskaya-ioithenko-sw-01(config-if)#switchport access vlan 2
% Access VLAN does not exist. Creating vlan 2
msk-donskaya-ioithenko-sw-01(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-ioithenko-sw-01(config-if)#default-gateway 192.168.2.254
^
% Invalid input detected at '^' marker.

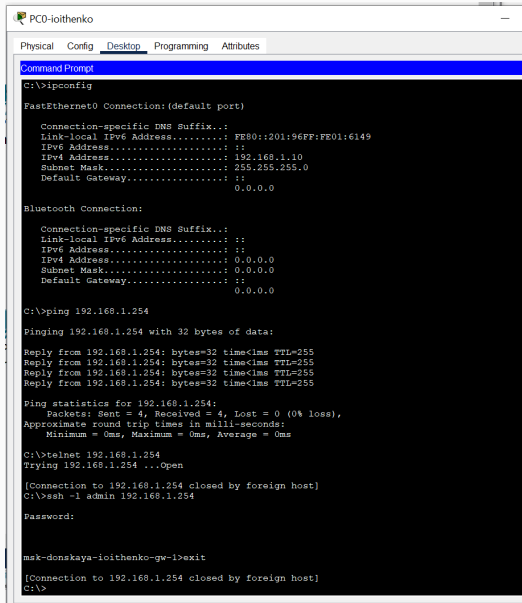
msk-donskaya-ioithenko-sw-01(config-if)#ip default-gateway 192.168.2.254
msk-donskaya-ioithenko-sw-01(config)#line vty 0 4
msk-donskaya-ioithenko-sw-01(config-line)#password cisco
msk-donskaya-ioithenko-sw-01(config-line)#login
msk-donskaya-ioithenko-sw-01(config-line)#line console 0
msk-donskaya-ioithenko-sw-01(config-line)#password cisco
msk-donskaya-ioithenko-sw-01(config-line)#login
msk-donskaya-ioithenko-sw-01(config-line)#enable secret cisco
msk-donskaya-ioithenko-sw-01(config)#service password-encryption
msk-donskaya-ioithenko-sw-01(config)#username admin privilege 1 secret cisco
msk-donskaya-ioithenko-sw-01(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-ioithenko-sw-01(config)#crypto key generate rsa
^
% Invalid input detected at '^' marker.

msk-donskaya-ioithenko-sw-01(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-ioithenko-sw-01.donskeya.rudn.edu
Choose the size of the key modulus in the range of 360 to 4096 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-donskaya-ioithenko-sw-01(config)#
*Mar 1 0:23:12.61: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:23:12.61: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-donskaya-ioithenko-sw-01(config)#line vty 0 4
msk-donskaya-ioithenko-sw-01(config-line)#transport input ssh
msk-donskaya-ioithenko-sw-01(config-line)#
```

Рис. 3: Конфигурация маршрутизатора



```
PC0-ioithenko
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ipconfig

FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::201:96FF:FE01:6149
    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<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:\>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-donskaya-ioithenko-gw-l>exit

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

Рис. 4: Пинг и подключение по telnet и ssh



```
PC1-ioithenko
Physical Config Desktop Programming Attributes
Command Prompt
Connection-specific DNS Suffix...:
Link-local IPv6 Address . . . . .: FE80::203:E4FF:FE35:EB63
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=10ms 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 = 10ms, Average = 3ms

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<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
Reply from 192.168.2.1: bytes=32 time<1ms 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:\>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:

mek-donskaya-ioithenko-sw-01>exit

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

Рис. 5: Пинг и подключение по telnet и ssh

В ходе выполнения лабораторной работы я получила основные навыки по начальному конфигурированию оборудования Cisco.