

# Лабораторная Работа №2. Предварительная настройка оборудования Cisco

Администрирование локальных сетей

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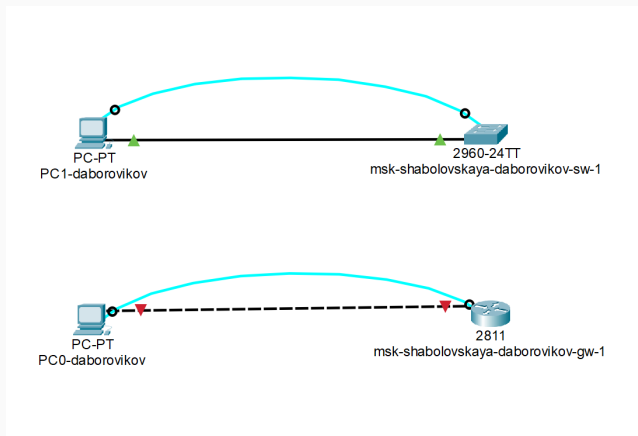
Получить основные навыки по начальному конфигурированию оборудования Cisco.

# Создание нового проекта

Имя файла:	lab_PT-02.pkt	▼
Тип файла:	Cisco Packet Tracer Activity File (*.pkt)	▼

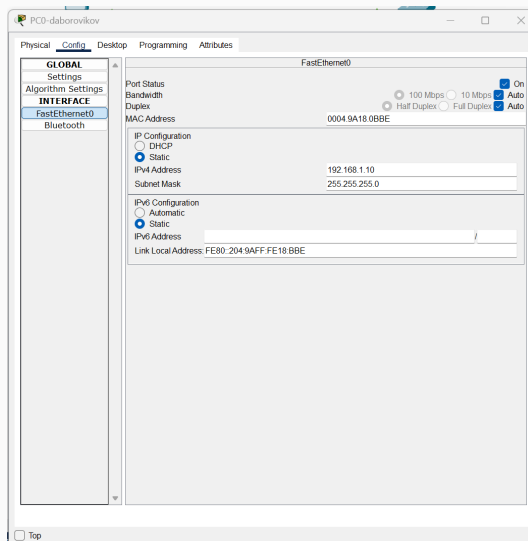
**Figure 1:** Создание нового проекта

# Схема подключения



**Figure 2:** Схема подключения оборудования для проведения его предварительной настройки

# Статические ip-адреса и маски подсети.



**Figure 3:** Статические ip-адреса и маски подсети.

# Настройка маршрутизатора

```
Router(config)#hostname msk-shabolovskaya-daborovikov-gw-1
msk-shabolovskaya-daborovikov-gw-1(config)#interface f0/0
msk-shabolovskaya-daborovikov-gw-1(config-if)#no shutdown

msk-shabolovskaya-daborovikov-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
ip address 192.168.1.254 255.255.255.0
msk-shabolovskaya-daborovikov-gw-1(config-if)#ip address 192.168.1.254 255.255.255.0
msk-shabolovskaya-daborovikov-gw-1(config-if)#no shutdown
msk-shabolovskaya-daborovikov-gw-1(config-if)#exit
msk-shabolovskaya-daborovikov-gw-1(config)#line vty 0 4
msk-shabolovskaya-daborovikov-gw-1(config-line)#password cisco
msk-shabolovskaya-daborovikov-gw-1(config-line)#login
msk-shabolovskaya-daborovikov-gw-1(config-line)#exit
msk-shabolovskaya-daborovikov-gw-1(config)#line console 0
msk-shabolovskaya-daborovikov-gw-1(config-line)#password cisco
msk-shabolovskaya-daborovikov-gw-1(config-line)#login
msk-shabolovskaya-daborovikov-gw-1(config-line)#login
msk-shabolovskaya-daborovikov-gw-1(config-line)#exit
msk-shabolovskaya-daborovikov-gw-1(config)#enable secret cisco
msk-shabolovskaya-daborovikov-gw-1(config)#service password encryption
                                     ^
% Invalid input detected at '^' marker.

msk-shabolovskaya-daborovikov-gw-1(config)#service password-encryption
msk-shabolovskaya-daborovikov-gw-1(config)#username admin privilege 1 secret cisco
msk-shabolovskaya-daborovikov-gw-1(config)#ip domain name donskaya.rudn.edu
msk-shabolovskaya-daborovikov-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-shabolovskaya-daborovikov-gw-1.donskaya.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-shabolovskaya-daborovikov-gw-1(config)#line vty 0 4
*Mar 1 0:18:27.32: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:18:27.32: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-shabolovskaya-daborovikov-gw-1(config-line)#transport input ssh
msk-shabolovskaya-daborovikov-gw-1(config-line)#
```

Figure 4: Настройка маршрутизатора в соответствии с заданием

# Настройку коммутатора в соответствии с заданием

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

msk-shabolovskaya-daborovikov-sw-1(config)#service password-encryption
msk-shabolovskaya-daborovikov-sw-1(config)#username admin privilege 1 secret cisco
msk-shabolovskaya-daborovikov-sw-1(config)#ip domain name donskeya.rudn.edu
msk-shabolovskaya-daborovikov-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-shabolovskaya-daborovikov-sw-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-shabolovskaya-daborovikov-sw-1(config)#line vty 0 4
*Mar 1 0:30:52.682: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:30:52.682: %SSH-5-ENABLED: SSH 1.9 has been enabled
msk-shabolovskaya-daborovikov-sw-1(config-line)#crypto key generate rsa
% You already have RSA keys defined named msk-shabolovskaya-daborovikov-sw-1.donskeya.rudn.edu
% Do you really want to replace them? [yes/no]: yes
The name for the keys will be: msk-shabolovskaya-daborovikov-sw-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.

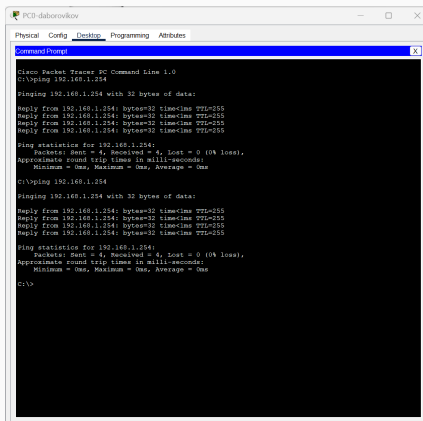
How many bits in the modulus [512]:
% Generating 512 bit RSA keys, keys will be non-exportable...[OK]

msk-shabolovskaya-daborovikov-sw-1(config)#line vty 0 4
*Mar 1 0:31:32.645: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:31:32.645: %SSH-5-ENABLED: SSH 1.9 has been enabled
msk-shabolovskaya-daborovikov-sw-1(config-line)#transport input ssh
msk-shabolovskaya-daborovikov-sw-1(config-line)#
```

Figure 5: Настройку коммутатора в соответствии с заданием



# Проверка работоспособности соединения



```
PC0-daborovikov
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=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:\>ping 192.168.1.254

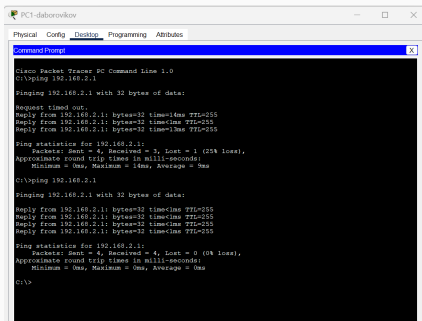
Pinging 192.168.1.254 with 32 bytes of data:

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:\>
```

**Figure 6:** Проверка работоспособности соединения с помощью команды ping на PC0-daborovikov -> msk-shabolovskaya-daborovikov-gw-1

# Проверка работоспособности соединения



```
PC1-daborovikov
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=14ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time=13ms 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 = 14ms, Average = 5ms

C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

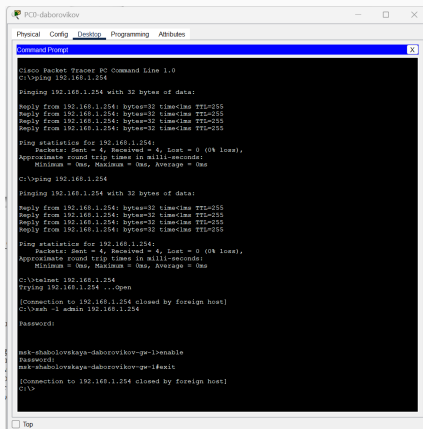
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

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:\>
```

**Figure 7:** Проверка работоспособности соединения с помощью команды ping на PC1-daborovikov -> msk-shabolovskaya-daborovikov-sw-1

# Попытка подключения к маршрутизатору



```
PCD-daborovkov
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=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:\>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

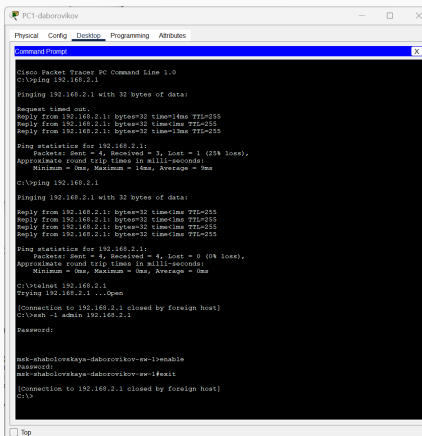
Ping statistics for 192.168.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

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:

mak-shabolovskaya-daborovkov-gw-1>enable
Password:
mak-shabolovskaya-daborovkov-gw-1#exit
[Connection to 192.168.1.254 closed by foreign host]
C:\>
```

**Figure 8:** Попытка подключения к маршрутизатору с помощью консольного кабеля, по протоколу удалённого доступа

# Попытка подключения к коммутатору



```
PC1-daborovkov
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=14ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time=13ms 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 = 14ms, Average = 9ms

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:
ask-shabolovskaya-daborovikov-sw-1$enable
Password:
ask-shabolovskaya-daborovikov-sw-1#exit

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

**Figure 9:** Попытка подключения к коммутатору с помощью консольного кабеля, по протоколу удалённого доступа

Я приобрел навыки по начальному конфигурированию оборудования Cisco.