

Лабораторная работа № 4

Первоначальное конфигурирование сети

Демидова Е. А.

07 марта 2024

Российский университет дружбы народов, Москва, Россия

Вводная часть

Цели

Провести подготовительную работу по первоначальной настройке коммутаторов сети.

Задачи

Требуется сделать первоначальную настройку коммутаторов сети, представленной на схеме L1. Под первоначальной настройкой понимается указание имени устройства, его IP-адреса, настройка доступа по паролю к виртуальным терминалам и консоли, настройка удалённого доступа к устройству по ssh.

Выполнение лабораторной работы

Размещение коммутаторов и оконечных устройств

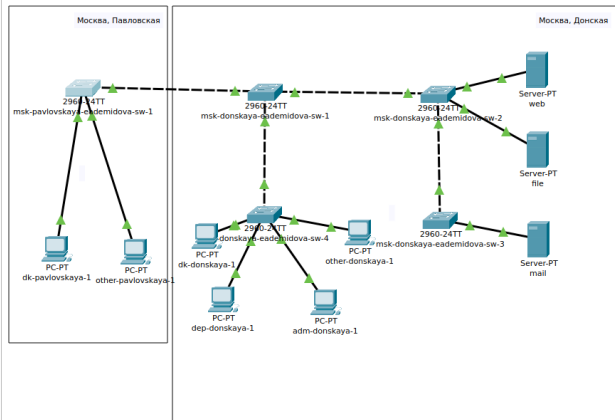
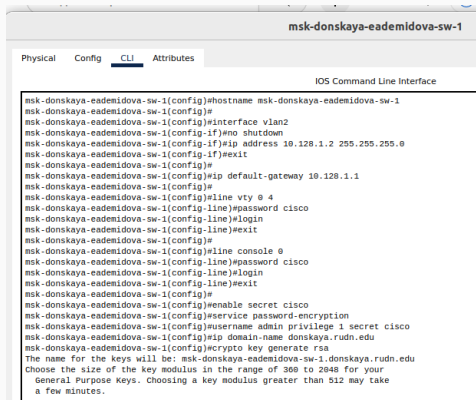


Рис. 1: Размещение коммутаторов и оконечных устройств согласно схеме сети L1

Размещение коммутаторов и оконечных устройств

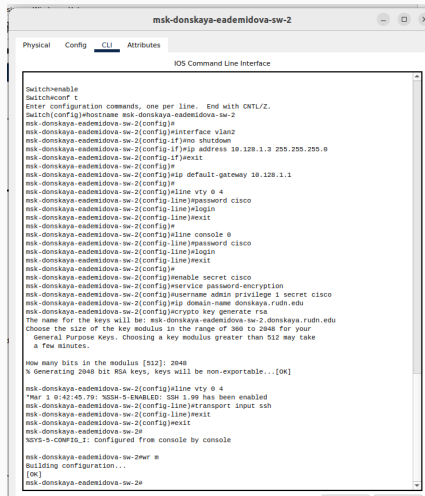


The screenshot shows a web-based interface for configuring a switch. The title bar at the top reads "msk-donskaya-eademidova-sw-1". Below it are four tabs: "Physical", "Config", "CLI" (which is selected and underlined), and "Attributes". Under the "CLI" tab, the text "IOS Command Line Interface" is displayed. The main area contains a list of configuration commands entered in a terminal-like window.

```
msk-donskaya-eademidova-sw-1(config)#hostname msk-donskaya-eademidova-sw-1
msk-donskaya-eademidova-sw-1(config)#
msk-donskaya-eademidova-sw-1(config)#interface vlan2
msk-donskaya-eademidova-sw-1(config-if)#no shutdown
msk-donskaya-eademidova-sw-1(config-if)#ip address 10.128.1.2 255.255.255.0
msk-donskaya-eademidova-sw-1(config-if)#exit
msk-donskaya-eademidova-sw-1(config)#
msk-donskaya-eademidova-sw-1(config)#ip default-gateway 10.128.1.1
msk-donskaya-eademidova-sw-1(config)#
msk-donskaya-eademidova-sw-1(config)#line vty 0 4
msk-donskaya-eademidova-sw-1(config-line)#password cisco
msk-donskaya-eademidova-sw-1(config-line)#login
msk-donskaya-eademidova-sw-1(config-line)#exit
msk-donskaya-eademidova-sw-1(config)#
msk-donskaya-eademidova-sw-1(config)#line console 0
msk-donskaya-eademidova-sw-1(config-line)#password cisco
msk-donskaya-eademidova-sw-1(config-line)#login
msk-donskaya-eademidova-sw-1(config-line)#exit
msk-donskaya-eademidova-sw-1(config)#
msk-donskaya-eademidova-sw-1(config)#enable secret cisco
msk-donskaya-eademidova-sw-1(config)#service password-encryption
msk-donskaya-eademidova-sw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-eademidova-sw-1(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-eademidova-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-eademidova-sw-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.
```

Рис. 2: Настройка коммутатора msk-donskaya-eademidova-sw-1

Настройка коммутаторов



```
msk-donskaya-eademidova-sw-2
Physical Config CLI Attributes
IOS Command Line Interface

Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-eademidova-sw-2
msk-donskaya-eademidova-sw-2(config)#
msk-donskaya-eademidova-sw-2(config)#interface vlan2
msk-donskaya-eademidova-sw-2(config-if)#no shutdown
msk-donskaya-eademidova-sw-2(config-if)#ip address 10.128.1.3 255.255.255.0
msk-donskaya-eademidova-sw-2(config-if)#exit
msk-donskaya-eademidova-sw-2(config)#
msk-donskaya-eademidova-sw-2(config)#ip default-gateway 10.128.1.1
msk-donskaya-eademidova-sw-2(config)#
msk-donskaya-eademidova-sw-2(config)#line vty 0 4
msk-donskaya-eademidova-sw-2(config-line)#password cisco
msk-donskaya-eademidova-sw-2(config-line)#login
msk-donskaya-eademidova-sw-2(config-line)#exit
msk-donskaya-eademidova-sw-2(config)#
msk-donskaya-eademidova-sw-2(config)#line console 0
msk-donskaya-eademidova-sw-2(config-line)#password cisco
msk-donskaya-eademidova-sw-2(config-line)#login
msk-donskaya-eademidova-sw-2(config-line)#exit
msk-donskaya-eademidova-sw-2(config)#
msk-donskaya-eademidova-sw-2(config)#enable secret cisco
msk-donskaya-eademidova-sw-2(config)#service password-encryption
msk-donskaya-eademidova-sw-2(config)#username admin privilege 1 secret cisco
msk-donskaya-eademidova-sw-2(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-eademidova-sw-2(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-eademidova-sw-2.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.

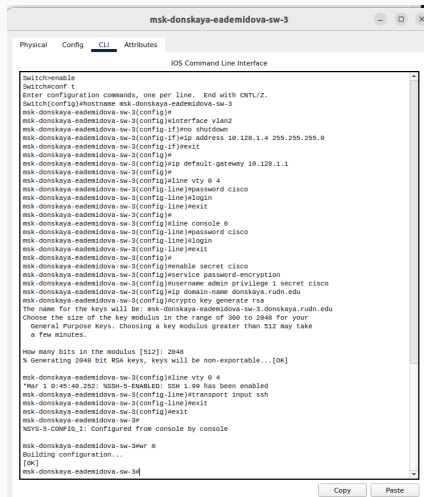
How many bits in the modulus [512]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

msk-donskaya-eademidova-sw-2(config)#line vty 0 4
*Mar 1 01:42:45.79: N55H-5-ENABLED: SSH 1.09 has been enabled
msk-donskaya-eademidova-sw-2(config-line)#transport input ssh
msk-donskaya-eademidova-sw-2(config-line)#exit
msk-donskaya-eademidova-sw-2(config)#exit
msk-donskaya-eademidova-sw-2#
msys-9-confis_1: Configured from console by console

msk-donskaya-eademidova-sw-2#wr m
Building configuration...
[OK]
msk-donskaya-eademidova-sw-2#
```

Рис. 3: Настройка коммутатора msk-donskaya-eademidova-sw-2

Настройка коммутаторов



```
msk-donskaya-eademidova-sw-3
Physical Config CLI Attributes
IOS Command Line Interface

Switch>enable
Switch>conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-eademidova-sw-3
msk-donskaya-eademidova-sw-3(config)#
msk-donskaya-eademidova-sw-3(config)#interface vlan2
msk-donskaya-eademidova-sw-3(config-if)#no shutdown
msk-donskaya-eademidova-sw-3(config-if)#ip address 10.128.1.4 255.255.255.0
msk-donskaya-eademidova-sw-3(config-if)#exit
msk-donskaya-eademidova-sw-3(config)#
msk-donskaya-eademidova-sw-3(config)#ip default-gateway 10.128.1.1
msk-donskaya-eademidova-sw-3(config)#
msk-donskaya-eademidova-sw-3(config)#line vty 0 4
msk-donskaya-eademidova-sw-3(config-line)#password cisco
msk-donskaya-eademidova-sw-3(config-line)#login
msk-donskaya-eademidova-sw-3(config-line)#exit
msk-donskaya-eademidova-sw-3(config)#
msk-donskaya-eademidova-sw-3(config)#line console 0
msk-donskaya-eademidova-sw-3(config-line)#password cisco
msk-donskaya-eademidova-sw-3(config-line)#login
msk-donskaya-eademidova-sw-3(config-line)#exit
msk-donskaya-eademidova-sw-3(config)#
msk-donskaya-eademidova-sw-3(config)#enable secret cisco
msk-donskaya-eademidova-sw-3(config)#service password-encryption
msk-donskaya-eademidova-sw-3(config)#username admin privilege 1 secret cisco
msk-donskaya-eademidova-sw-3(config)#ip domain-name donsokaya.rudn.edu
msk-donskaya-eademidova-sw-3(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-eademidova-sw-3.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]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

msk-donskaya-eademidova-sw-3(config)#line vty 0 4
*Mar 1 0:45:40.252: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-eademidova-sw-3(config-line)#transport input ssh
msk-donskaya-eademidova-sw-3(config-line)#exit
msk-donskaya-eademidova-sw-3(config)#exit
msk-donskaya-eademidova-sw-3#
%SYS-5-CONF10_1: Configured from console by console

msk-donskaya-eademidova-sw-3#wr
Building configuration...
[OK]
msk-donskaya-eademidova-sw-3#
```

Рис. 4: Настройка коммутатора msk-donskaya-eademidova-sw-3

Настройка коммутаторов



```
msk-donskaya-eademidova-sw-4
Physical Config CLI Attributes
IOS Command Line Interface

Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-eademidova-sw-4
msk-donskaya-eademidova-sw-4(config)#
msk-donskaya-eademidova-sw-4(config)#interface vlan2
msk-donskaya-eademidova-sw-4(config-if)#no shutdown
msk-donskaya-eademidova-sw-4(config-if)#ip address 10.128.1.5 255.255.255.0
msk-donskaya-eademidova-sw-4(config-if)#exit
msk-donskaya-eademidova-sw-4(config)#
msk-donskaya-eademidova-sw-4(config)#ip default-gateway 10.128.1.1
msk-donskaya-eademidova-sw-4(config)#
msk-donskaya-eademidova-sw-4(config)#line vty 0 4
msk-donskaya-eademidova-sw-4(config-line)#password cisco
msk-donskaya-eademidova-sw-4(config-line)#login
msk-donskaya-eademidova-sw-4(config-line)#exit
msk-donskaya-eademidova-sw-4(config)#
msk-donskaya-eademidova-sw-4(config)#enable secret cisco
msk-donskaya-eademidova-sw-4(config)#service password-encryption
msk-donskaya-eademidova-sw-4(config)#username admin privilege 1 secret cisco
msk-donskaya-eademidova-sw-4(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-eademidova-sw-4(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-eademidova-sw-4.donskeya.rudn.edu
Choose the size of the key modulus in the range of 386 to 2048 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

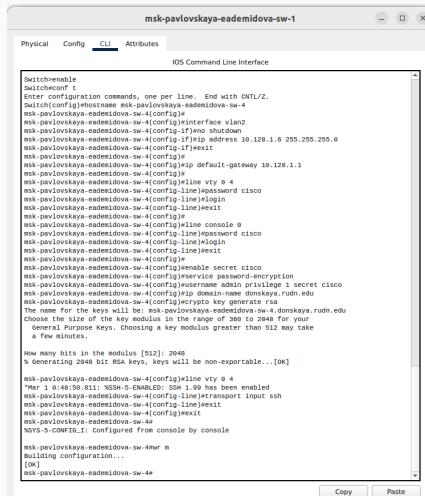
How many bits in the modulus [512]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

msk-donskaya-eademidova-sw-4(config)#line vty 0 4
*Mar 1 0:47:5.703: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-eademidova-sw-4(config-line)#transport input ssh
msk-donskaya-eademidova-sw-4(config-line)#exit
msk-donskaya-eademidova-sw-4(config)#exit
msk-donskaya-eademidova-sw-4#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-eademidova-sw-4#wr n
Building configuration...
[OK]
msk-donskaya-eademidova-sw-4#show run
```

Рис. 5: Настройка коммутатора msk-donskaya-eademidova-sw-4

Настройка коммутаторов



```
msk-pavlovskaya-eademidova-sw-1
Physical Config CLI Attributes
IOS Command Line Interface

Switch#enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-pavlovskaya-eademidova-sw-4
msk-pavlovskaya-eademidova-sw-4(config)#
msk-pavlovskaya-eademidova-sw-4(config)#interface vlan2
msk-pavlovskaya-eademidova-sw-4(config-if)#no shutdown
msk-pavlovskaya-eademidova-sw-4(config-if)#ip address 10.128.1.6 255.255.255.0
msk-pavlovskaya-eademidova-sw-4(config-if)#exit
msk-pavlovskaya-eademidova-sw-4(config)#
msk-pavlovskaya-eademidova-sw-4(config)#ip default-gateway 10.128.1.1
msk-pavlovskaya-eademidova-sw-4(config)#
msk-pavlovskaya-eademidova-sw-4(config)#line vty 0 4
msk-pavlovskaya-eademidova-sw-4(config-line)#password cisco
msk-pavlovskaya-eademidova-sw-4(config-line)#login
msk-pavlovskaya-eademidova-sw-4(config-line)#exit
msk-pavlovskaya-eademidova-sw-4(config)#
msk-pavlovskaya-eademidova-sw-4(config)#line console 0
msk-pavlovskaya-eademidova-sw-4(config-line)#password cisco
msk-pavlovskaya-eademidova-sw-4(config-line)#login
msk-pavlovskaya-eademidova-sw-4(config-line)#exit
msk-pavlovskaya-eademidova-sw-4(config)#
msk-pavlovskaya-eademidova-sw-4(config)#enable secret cisco
msk-pavlovskaya-eademidova-sw-4(config)#service password-encryption
msk-pavlovskaya-eademidova-sw-4(config)#username admin privilege 1 secret cisco
msk-pavlovskaya-eademidova-sw-4(config)#ip domain-name donskeya.rudn.edu
msk-pavlovskaya-eademidova-sw-4(config)#crypto key generate rsa
The name for the keys will be: msk-pavlovskaya-eademidova-sw-4.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]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

msk-pavlovskaya-eademidova-sw-4(config)#line vty 0 4
*Mar 1 9:48:50.811: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-pavlovskaya-eademidova-sw-4(config-line)#transport input ssh
msk-pavlovskaya-eademidova-sw-4(config-line)#exit
msk-pavlovskaya-eademidova-sw-4(config)#exit
msk-pavlovskaya-eademidova-sw-4#
%SYS-5-CONFIG_I: Configured from console by console

msk-pavlovskaya-eademidova-sw-4#r n
Building configuration...
[OK]
msk-pavlovskaya-eademidova-sw-4#
```

Рис. 6: Настройка коммутатора msk-pavlovskaya-eademidova-sw-1

```
msk-donskaya-sw-1(config)#hostname msk-donskaya-eademidova-sw-1
msk-donskaya-eademidova-sw-1(config)#exit
msk-donskaya-eademidova-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-eademidova-sw-1#wr m
Building configuration...
[OK]
```

Рис. 7: Настройка коммутатора msk-pavlovskaya-eademidova-sw-1

Заключение

В результате выполнения лабораторной работы провели подготовительную работу по первоначальной настройке коммутаторов сети.