

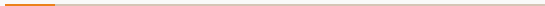
Лабораторная работа №4

Первоначальное конфигурирование сети

Замбалова Дина Владимировна

Российский университет дружбы народов, Москва, Россия

Информация



- Замбалова Дина Владимировна
- студентка
- Российский университет дружбы народов
- 1132226536@pfur.ru
- <https://github.com/dvzambalova>

Провести подготовительную работу по первоначальной настройке коммутаторов сети.

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. При выполнении работы необходимо учитывать соглашение об именовании.

Выполнение лабораторной работы

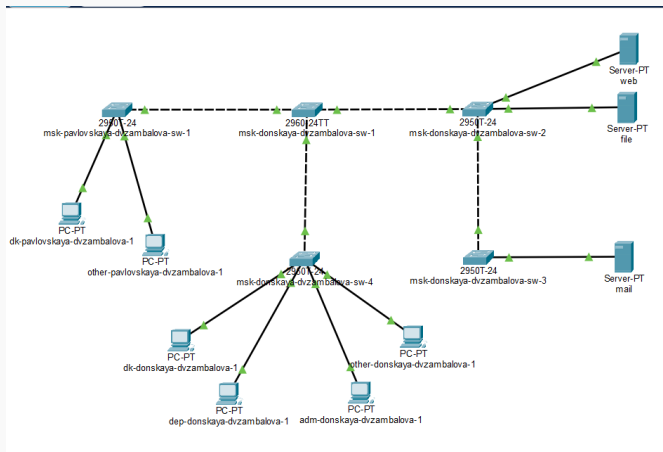
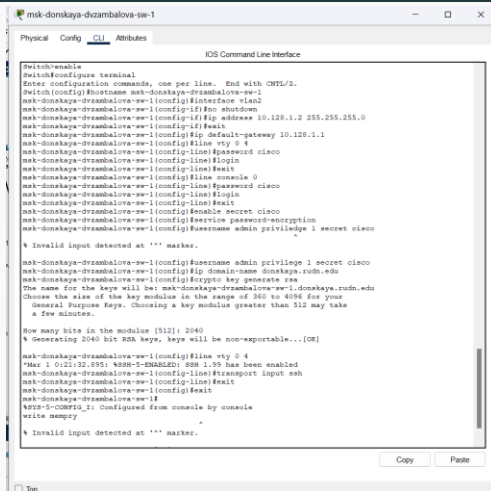


Рис. 1: Размещение коммутаторов и оконечных устройств согласно схеме сети L1

Выполнение лабораторной работы



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

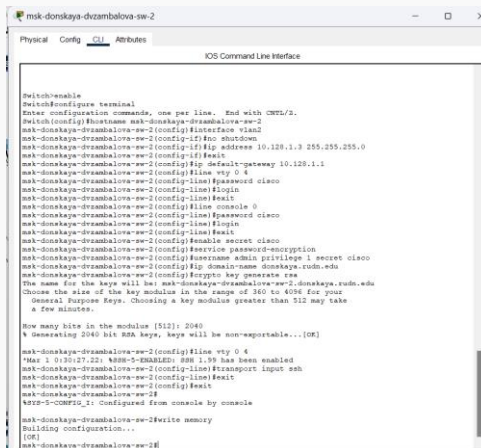
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-dvzambalova-sw-1
msk-donskaya-dvzambalova-sw-1(config)#interface vlan2
msk-donskaya-dvzambalova-sw-1(config-if)#no shutdown
msk-donskaya-dvzambalova-sw-1(config-if)#ip address 10.128.1.2 255.255.255.0
msk-donskaya-dvzambalova-sw-1(config-if)#exit
msk-donskaya-dvzambalova-sw-1(config)#ip default-gateway 10.128.1.1
msk-donskaya-dvzambalova-sw-1(config)#line vty 0 4
msk-donskaya-dvzambalova-sw-1(config-line)#password cisco
msk-donskaya-dvzambalova-sw-1(config-line)#login
msk-donskaya-dvzambalova-sw-1(config-line)#exit
msk-donskaya-dvzambalova-sw-1(config)#line console 0
msk-donskaya-dvzambalova-sw-1(config-line)#password cisco
msk-donskaya-dvzambalova-sw-1(config-line)#login
msk-donskaya-dvzambalova-sw-1(config-line)#exit
msk-donskaya-dvzambalova-sw-1(config)#enable secret cisco
msk-donskaya-dvzambalova-sw-1(config)#service password-encryption
msk-donskaya-dvzambalova-sw-1(config)#username admin privilege 1 secret cisco
^
% Invalid input detected at '^' marker.

msk-donskaya-dvzambalova-sw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-dvzambalova-sw-1(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-dvzambalova-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-dvzambalova-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]: 2040
^
% Generating 2040 bit RSA keys, keys will be non-exportable...[OK]

msk-donskaya-dvzambalova-sw-1(config)#line vty 0 4
*Mar 1 0:21:32.895: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-dvzambalova-sw-1(config-line)#transport input ssh
msk-donskaya-dvzambalova-sw-1(config-line)#exit
msk-donskaya-dvzambalova-sw-1(config)#exit
msk-donskaya-dvzambalova-sw-1
%SYS-5-CONFIG_I: Configured from console by console
write memory
^
% Invalid input detected at '^' marker.
```

Рис. 2: Конфигурация коммутатора msk-donskaya-dmbelicheva-sw-1



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

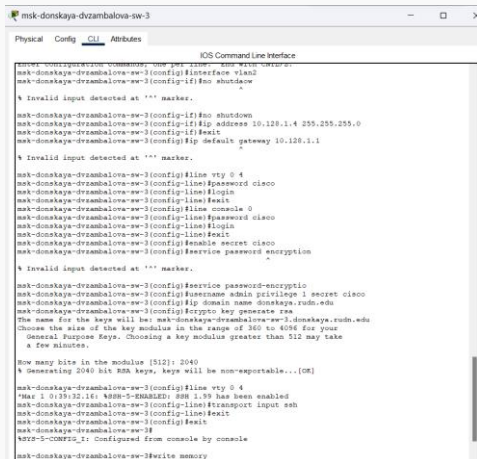
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-dvzambalova-sw-2
msk-donskaya-dvzambalova-sw-2(config)#interface vlan2
msk-donskaya-dvzambalova-sw-2(config-if)#no shutdown
msk-donskaya-dvzambalova-sw-2(config-if)#ip address 10.128.1.3 255.255.255.0
msk-donskaya-dvzambalova-sw-2(config-if)#exit
msk-donskaya-dvzambalova-sw-2(config)#ip default-gateway 10.128.1.1
msk-donskaya-dvzambalova-sw-2(config)#line vty 0 4
msk-donskaya-dvzambalova-sw-2(config-line)#password cisco
msk-donskaya-dvzambalova-sw-2(config-line)#login
msk-donskaya-dvzambalova-sw-2(config-line)#exit
msk-donskaya-dvzambalova-sw-2(config)#line console 0
msk-donskaya-dvzambalova-sw-2(config-line)#password cisco
msk-donskaya-dvzambalova-sw-2(config-line)#login
msk-donskaya-dvzambalova-sw-2(config-line)#exit
msk-donskaya-dvzambalova-sw-2(config)#enable secret cisco
msk-donskaya-dvzambalova-sw-2(config)#service password-encryption
msk-donskaya-dvzambalova-sw-2(config)#username admin privilege 1 secret cisco
msk-donskaya-dvzambalova-sw-2(config)#ip domain-name donskey.rudn.edu
msk-donskaya-dvzambalova-sw-2(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-dvzambalova-sw-2.donskey.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): 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

msk-donskaya-dvzambalova-sw-2(config)#line vty 0 4
*Mar 1 0:30:27.22: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-dvzambalova-sw-2(config-line)#transport input ssh
msk-donskaya-dvzambalova-sw-2(config-line)#exit
msk-donskaya-dvzambalova-sw-2(config)#exit
msk-donskaya-dvzambalova-sw-2#
%SYS-5-CONFIG_I: Configured from console by console

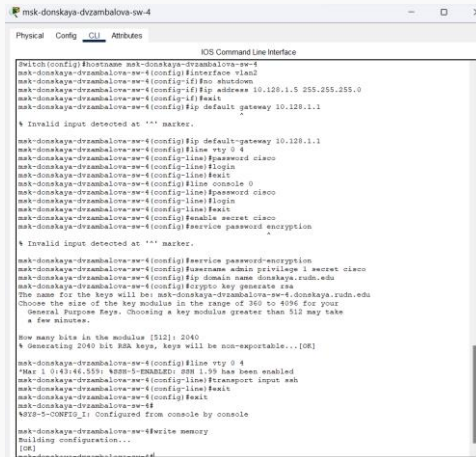
msk-donskaya-dvzambalova-sw-2#write memory
Building configuration...
[OK]
msk-donskaya-dvzambalova-sw-2#
```

Рис. 3: Конфигурация коммутатора msk-donskaya-dmbelicheva-sw-2



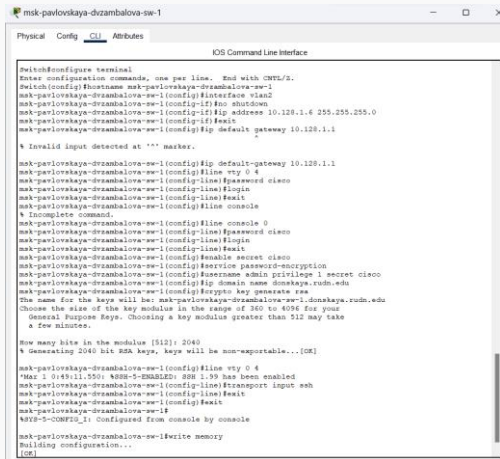
```
msk-donskaya-dvzambalova-sw-3
Physical Config CLI Attributes
IOS Command Line Interface
Enter configuration commands, one per line. End with CTRL-Z
msk-donskaya-dvzambalova-sw-3(config)#interface vlan2
msk-donskaya-dvzambalova-sw-3(config-if)#no shutdown
^
% Invalid input detected at '^' marker.
msk-donskaya-dvzambalova-sw-3(config-if)#no shutdown
msk-donskaya-dvzambalova-sw-3(config-if)#ip address 10.120.1.4 255.255.255.0
msk-donskaya-dvzambalova-sw-3(config-if)#exit
msk-donskaya-dvzambalova-sw-3(config)#ip default gateway 10.120.1.1
^
% Invalid input detected at '^' marker.
msk-donskaya-dvzambalova-sw-3(config)#line vty 0 4
msk-donskaya-dvzambalova-sw-3(config-line)#password cisco
msk-donskaya-dvzambalova-sw-3(config-line)#login
msk-donskaya-dvzambalova-sw-3(config-line)#exit
msk-donskaya-dvzambalova-sw-3(config)#line console 0
msk-donskaya-dvzambalova-sw-3(config-line)#password cisco
msk-donskaya-dvzambalova-sw-3(config-line)#login
msk-donskaya-dvzambalova-sw-3(config-line)#exit
msk-donskaya-dvzambalova-sw-3(config)#enable secret cisco
msk-donskaya-dvzambalova-sw-3(config)#service password encryption
^
% Invalid input detected at '^' marker.
msk-donskaya-dvzambalova-sw-3(config)#service password-encryptio
msk-donskaya-dvzambalova-sw-3(config)#username admin privilege 1 secret cisco
msk-donskaya-dvzambalova-sw-3(config)#ip domain name donskeya.rudn.edu
msk-donskaya-dvzambalova-sw-3(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-dvzambalova-sw-3.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]: 2040
^ Generating 2040 bit RSA keys, keys will be non-exportable...[OK]
msk-donskaya-dvzambalova-sw-3(config)#line vty 0 4
^Mar 1 0:29:32.16: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-dvzambalova-sw-3(config-line)#transport input ssh
msk-donskaya-dvzambalova-sw-3(config-line)#exit
msk-donskaya-dvzambalova-sw-3(config)#exit
msk-donskaya-dvzambalova-sw-3#
%SYS-5-CONFIG_I: Configured from console by console
msk-donskaya-dvzambalova-sw-3#write memory
```

Рис. 4: Конфигурация коммутатора msk-donskaya-dmbelicheva-sw-3



```
msk-donskaya-dvzambalova-sw-4
Physical Config CLI Attributes
IOS Command Line Interface
Switch(config)#hostname msk-donskaya-dvzambalova-sw-4
msk-donskaya-dvzambalova-sw-4(config)#interface vlan2
msk-donskaya-dvzambalova-sw-4(config-if)#no shutdown
msk-donskaya-dvzambalova-sw-4(config-if)#ip address 10.128.1.5 255.255.255.0
msk-donskaya-dvzambalova-sw-4(config-if)#exit
msk-donskaya-dvzambalova-sw-4(config)#ip default-gateway 10.128.1.1
% Invalid input detected at '^' marker.
msk-donskaya-dvzambalova-sw-4(config)#ip default-gateway 10.128.1.1
msk-donskaya-dvzambalova-sw-4(config)#line vty 0 4
msk-donskaya-dvzambalova-sw-4(config-line)#password cisco
msk-donskaya-dvzambalova-sw-4(config-line)#login
msk-donskaya-dvzambalova-sw-4(config-line)#exit
msk-donskaya-dvzambalova-sw-4(config)#line console 0
msk-donskaya-dvzambalova-sw-4(config-line)#password cisco
msk-donskaya-dvzambalova-sw-4(config-line)#login
msk-donskaya-dvzambalova-sw-4(config-line)#exit
msk-donskaya-dvzambalova-sw-4(config)#enable secret cisco
msk-donskaya-dvzambalova-sw-4(config)#service password-encryption
% Invalid input detected at '^' marker.
msk-donskaya-dvzambalova-sw-4(config)#service password-encryption
msk-donskaya-dvzambalova-sw-4(config)#username admin privilege 1 secret cisco
msk-donskaya-dvzambalova-sw-4(config)#ip domain name donskeya.rudn.edu
msk-donskaya-dvzambalova-sw-4(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-dvzambalova-sw-4.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]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]
msk-donskaya-dvzambalova-sw-4(config)#line vty 0 4
*Mar 1 0:43:46.559: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-dvzambalova-sw-4(config-line)#transport input ssh
msk-donskaya-dvzambalova-sw-4(config-line)#exit
msk-donskaya-dvzambalova-sw-4(config)#exit
msk-donskaya-dvzambalova-sw-4#
%SYS-5-CONFIG_I: Configured from console by console
msk-donskaya-dvzambalova-sw-4#write memory
Building configuration...
[OK]
```

Рис. 5: Конфигурация коммутатора msk-donskaya-dmbelicheva-sw-4



The screenshot shows a terminal window titled "msk-pavlovskaya-dvzambalova-sw-1" with tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The terminal shows a sequence of configuration commands for a switch named "msk-pavlovskaya-dvzambalova-sw-1". The commands include setting the hostname, configuring interface "vlan2" with IP address 10.128.1.6, enabling the interface, setting a default gateway to 10.128.1.1, configuring the console line with password "cisco", enabling secret encryption, setting a username "admin" with privilege level 1 and secret "cisco", generating RSA keys with a modulus of 2048, and enabling SSH with version 5. The terminal output shows the successful execution of these commands, including the generation of RSA keys and the enabling of SSH.

```
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-pavlovskaya-dvzambalova-sw-1
msk-pavlovskaya-dvzambalova-sw-1(config)#interface vlan2
msk-pavlovskaya-dvzambalova-sw-1(config-if)#no shutdown
msk-pavlovskaya-dvzambalova-sw-1(config-if)#ip address 10.128.1.6 255.255.255.0
msk-pavlovskaya-dvzambalova-sw-1(config-if)#exit
msk-pavlovskaya-dvzambalova-sw-1(config)#ip default gateway 10.128.1.1
% Invalid input detected at '^' marker.

msk-pavlovskaya-dvzambalova-sw-1(config)#ip default-gateway 10.128.1.1
msk-pavlovskaya-dvzambalova-sw-1(config)#line vty 0 4
msk-pavlovskaya-dvzambalova-sw-1(config-line)#password cisco
msk-pavlovskaya-dvzambalova-sw-1(config-line)#login
msk-pavlovskaya-dvzambalova-sw-1(config-line)#exit
msk-pavlovskaya-dvzambalova-sw-1(config)#line console
% Incomplete command.
msk-pavlovskaya-dvzambalova-sw-1(config)#line console 0
msk-pavlovskaya-dvzambalova-sw-1(config-line)#password cisco
msk-pavlovskaya-dvzambalova-sw-1(config-line)#login
msk-pavlovskaya-dvzambalova-sw-1(config-line)#exit
msk-pavlovskaya-dvzambalova-sw-1(config)#enable secret cisco
msk-pavlovskaya-dvzambalova-sw-1(config)#service password-encryption
msk-pavlovskaya-dvzambalova-sw-1(config)#username admin privilege 1 secret cisco
msk-pavlovskaya-dvzambalova-sw-1(config)#ip domain name donskaya.rudn.edu
msk-pavlovskaya-dvzambalova-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-pavlovskaya-dvzambalova-sw-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]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

msk-pavlovskaya-dvzambalova-sw-1(config)#line vty 0 4
*Mar 1 0:45:11.550: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-pavlovskaya-dvzambalova-sw-1(config-line)#transport input ssh
msk-pavlovskaya-dvzambalova-sw-1(config-line)#exit
msk-pavlovskaya-dvzambalova-sw-1(config)#exit
%SYS-5-CONFIG_I: Configured from console by console

msk-pavlovskaya-dvzambalova-sw-1#write memory
Building configuration...
[OK]
```

Рис. 6: Конфигурация коммутатора msk-pavlovskaya-dmbelicheva-sw-1

В результате выполнения данной лабораторной работы я провела подготовительную работу по первоначальной настройке коммутаторов сети.