

Лабораторная работа №4

Первоначальное конфигурирование сети

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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.

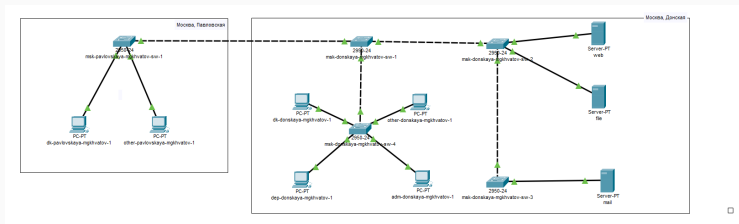


Рис. 1: Размещение коммутаторов и оконечных устройств согласно схеме сети L1

Выполнение лабораторной работы

```
Switch(config)#enable
% Incomplete command.
Switch(config)#hostname mskdonskaya sw1
-
% Invalid input detected at '^' marker.

Switch(config)#hostname msk-donskaya-sw-1
msk-donskaya-sw-1(config)#interface vlan2
msk-donskaya-sw-1(config-if)#no shutdown
msk-donskaya-sw-1(config-if)#ip address 10.128.1.2 255.255.255.0
msk-donskaya-sw-1(config-if)#exit
msk-donskaya-sw-1(config)#ip default-gateway 10.128.1.1
msk-donskaya-sw-1(config)#line vty 0 4
msk-donskaya-sw-1(config-line)#password cisco
msk-donskaya-sw-1(config-line)#login
msk-donskaya-sw-1(config-line)#exit
msk-donskaya-sw-1(config)#line console 0
msk-donskaya-sw-1(config-line)#password cisco
msk-donskaya-sw-1(config-line)#login
msk-donskaya-sw-1(config-line)#exit
msk-donskaya-sw-1(config)#enable secret cisco
msk-donskaya-sw-1(config)#service password-encryption
msk-donskaya-sw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-sw-1(config)#ip domain name donskeya.rudn.edu
msk-donskaya-sw-1(config)#
msk-donskaya-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-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-donskaya-sw-1(config)#line vty 0 4
*Mar 1 0:16:25.422: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:16:25.423: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-donskaya-sw-1(config-line)#transport input ssh
msk-donskaya-sw-1(config-line)#exit
msk-donskaya-sw-1(config)#exit
msk-donskaya-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-sw-1#write memory
Building configuration...
[OK]
```

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

Выполнение лабораторной работы

```
Switch(config-if)#hostname msk-donskaya-sw-2
msk-donskaya-sw-2(config)#interface vlan2
msk-donskaya-sw-2(config-if)#no shutdown
msk-donskaya-sw-2(config-if)#ip address 10.128.1.3
^
% Invalid input detected at '^' marker.

msk-donskaya-sw-2(config-if)#ip address 10.128.1.3
% Incomplete command.
msk-donskaya-sw-2(config-if)#ip address 10.128.1.3 255.255.255.0
msk-donskaya-sw-2(config-if)#exit
msk-donskaya-sw-2(config)#ip default gateway 10.128.1.0
^
% Invalid input detected at '^' marker.

msk-donskaya-sw-2(config)#ip default-gateway 10.128.1.0
msk-donskaya-sw-2(config)#line vty 0 4
msk-donskaya-sw-2(config-line)#password cisco
msk-donskaya-sw-2(config-line)#login
msk-donskaya-sw-2(config-line)#exit
msk-donskaya-sw-2(config)#line console 0
msk-donskaya-sw-2(config-line)#password cisco
msk-donskaya-sw-2(config-line)#login
msk-donskaya-sw-2(config-line)#exit
msk-donskaya-sw-2(config)#enable secret cisco
msk-donskaya-sw-2(config)#service password-encryption
msk-donskaya-sw-2(config)#username admin privilege 1 secret cisco
msk-donskaya-sw-2(config)#ip domain name donskeya.rudn.edu
msk-donskaya-sw-2(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-sw-2(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-sw-2.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-sw-2(config)#line vty 0 4
*Mar 1 0:31:3.240: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:31:3.240: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-donskaya-sw-2(config-line)#transport input ssh
msk-donskaya-sw-2(config-line)#exit
msk-donskaya-sw-2(config)#exit
msk-donskaya-sw-2#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
```

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


```
Switch(config-if)#hostname msk-donskaya-mgkhvatov-sw-3
msk-donskaya-mgkhvatov-sw-3(config)#interface vlan2
msk-donskaya-mgkhvatov-sw-3(config-if)#no shutdown
msk-donskaya-mgkhvatov-sw-3(config-if)#ip address 10.128.1.4
% Incomplete command.
msk-donskaya-mgkhvatov-sw-3(config-if)#ip address 10.128.1.4 255.255.255.0
msk-donskaya-mgkhvatov-sw-3(config-if)#exit
msk-donskaya-mgkhvatov-sw-3(config)#ip default gateway 10.128.1.1
% Invalid input detected at '^' marker.

msk-donskaya-mgkhvatov-sw-3(config)#ip default-gateway 10.128.1.1
msk-donskaya-mgkhvatov-sw-3(config)#line vty 0 4
msk-donskaya-mgkhvatov-sw-3(config-line)#password cisco
msk-donskaya-mgkhvatov-sw-3(config-line)#login
msk-donskaya-mgkhvatov-sw-3(config-line)#exit
msk-donskaya-mgkhvatov-sw-3(config)#line console 0
msk-donskaya-mgkhvatov-sw-3(config-line)#password cisco
msk-donskaya-mgkhvatov-sw-3(config-line)#login
msk-donskaya-mgkhvatov-sw-3(config-line)#exit
msk-donskaya-mgkhvatov-sw-3(config)#enable secret cisco
msk-donskaya-mgkhvatov-sw-3(config)#service password-encryption
msk-donskaya-mgkhvatov-sw-3(config)#username admin privilege 1 secret cisco
msk-donskaya-mgkhvatov-sw-3(config)#ip domain name donskeya.rudn.edu
msk-donskaya-mgkhvatov-sw-3(config)#ip domain-name donskeya.rudn.edu
msk-donskaya-mgkhvatov-sw-3(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-mgkhvatov-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]:
% Generating 512 bit RSA keys, keys will be non-exportable...[OK]

msk-donskaya-mgkhvatov-sw-3(config)#line vty 0 4
*Mar 1 0:29:10.389: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:29:10.389: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-donskaya-mgkhvatov-sw-3(config-line)#transport input ssh
msk-donskaya-mgkhvatov-sw-3(config-line)#exit
msk-donskaya-mgkhvatov-sw-3(config)#exit
msk-donskaya-mgkhvatov-sw-3#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-mgkhvatov-sw-3#
```

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

```
Switch(config-if)#hostname msk-donskaya-mgkhvatov-sw-4
msk-donskaya-mgkhvatov-sw-4(config)#interface vlan2
msk-donskaya-mgkhvatov-sw-4(config-if)#no shutdown
msk-donskaya-mgkhvatov-sw-4(config-if)#ip address 10.128.1.6 255.255.255.0
msk-donskaya-mgkhvatov-sw-4(config-if)#exit
msk-donskaya-mgkhvatov-sw-4(config)#ip default-gateway 10.128.1.1
msk-donskaya-mgkhvatov-sw-4(config)#line vty 0 4
msk-donskaya-mgkhvatov-sw-4(config-line)#password cisco
msk-donskaya-mgkhvatov-sw-4(config-line)#login
msk-donskaya-mgkhvatov-sw-4(config-line)#exit
msk-donskaya-mgkhvatov-sw-4(config)#line console 0
msk-donskaya-mgkhvatov-sw-4(config-line)#password cisco
msk-donskaya-mgkhvatov-sw-4(config-line)#login
msk-donskaya-mgkhvatov-sw-4(config-line)#exit
msk-donskaya-mgkhvatov-sw-4(config)#enable secret cisco
msk-donskaya-mgkhvatov-sw-4(config)#service password encryption
^
% Invalid input detected at '^' marker.

msk-donskaya-mgkhvatov-sw-4(config)#service password-encryption
msk-donskaya-mgkhvatov-sw-4(config)#username admin privilege 1 secret cisco
msk-donskaya-mgkhvatov-sw-4(config)#ip domain name donskeya.rudn.edu
msk-donskaya-mgkhvatov-sw-4(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-mgkhvatov-sw-4.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-mgkhvatov-sw-4(config)#line vty 0 4
*Mar 1 0:36:13.236: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:36:13.236: SSH-2.0-ENABLED: SSH 1.6 has been enabled
msk-donskaya-mgkhvatov-sw-4(config-line)#transport input ssh
msk-donskaya-mgkhvatov-sw-4(config-line)#exit
msk-donskaya-mgkhvatov-sw-4(config)#exit
msk-donskaya-mgkhvatov-sw-4#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-mgkhvatov-sw-4#
```

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

Выполнение лабораторной работы

```
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#hostname msk-pavlovskaya-mgkhvatov-sw-1
msk-pavlovskaya-mgkhvatov-sw-1(config)#interface vlan2
msk-pavlovskaya-mgkhvatov-sw-1(config-if)#no shutdown
msk-pavlovskaya-mgkhvatov-sw-1(config-if)#ip address 10.128.1.6 255.255.255.0
msk-pavlovskaya-mgkhvatov-sw-1(config-if)#exit
msk-pavlovskaya-mgkhvatov-sw-1(config)#ip default gateway 10.128.1.1
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-mgkhvatov-sw-1(config)#ip default-gateway 10.128.1.1
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-mgkhvatov-sw-1(config)#ip default-gateway 10.128.1.1
msk-pavlovskaya-mgkhvatov-sw-1(config)#line vty 0 4
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#password cisco
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#login
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#exit
msk-pavlovskaya-mgkhvatov-sw-1(config)#line console 0
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#password cisco
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#login
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#exit
msk-pavlovskaya-mgkhvatov-sw-1(config)#enable secret cisco
msk-pavlovskaya-mgkhvatov-sw-1(config)#service password-encryption
msk-pavlovskaya-mgkhvatov-sw-1(config)#username admin privilege 1 secret ciscoadmin
admin privilege 1 secret cisco^2
msk-pavlovskaya-mgkhvatov-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
enable
msk-pavlovskaya-mgkhvatov-sw-1#username admin privilege 1 secret cisco
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-mgkhvatov-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-pavlovskaya-mgkhvatov-sw-1(config)#username admin privilege 1 secret cisco
msk-pavlovskaya-mgkhvatov-sw-1(config)#ip domain name donakaya.rudn.edu
msk-pavlovskaya-mgkhvatov-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-pavlovskaya-mgkhvatov-sw-1.donakaya.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-pavlovskaya-mgkhvatov-sw-1(config)#line vty 0 4
*Mar 1 0:52:39.397: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:52:39.397: SSH-2-ENABLED: SSH 1.5 has been enabled
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#transport input ssh
msk-pavlovskaya-mgkhvatov-sw-1(config-line)#exit
msk-pavlovskaya-mgkhvatov-sw-1(config)#exit
msk-pavlovskaya-mgkhvatov-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-pavlovskaya-mgkhvatov-sw-1#
```

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

Вывод

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