

# **Лабораторная работа №4**

**Первоначальное конфигурирование сети**

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# 1 Цель работы

Провести подготовительную работу по первоначальной настройке коммутаторов сети.

## 2 Выполнение лабораторной работы

- 1) В рабочей области разместили коммутаторы и оконечные устройства согласно схеме L1 (lab3) и соединили их через соответствующие интерфейсы, используя прямые и кросс кабели.

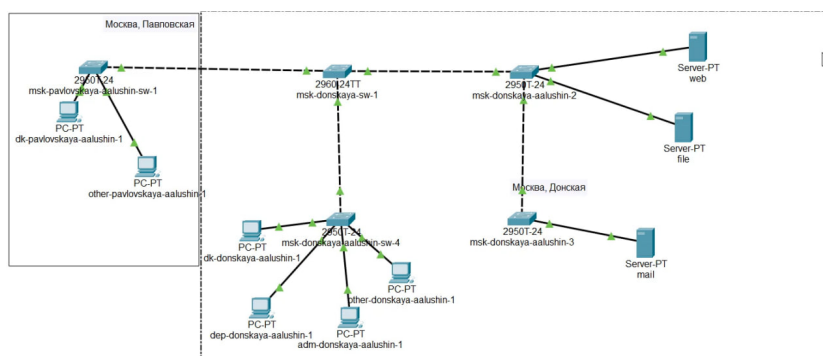


Рис. 2.1: Создание топологии

- 2) Используя типовую конфигурацию коммутатора, настроили все коммутаторы, изменяя название устройств, ip-адреса согласно плану IP(lab3), устанавливая пароли и настраивая подключение по ssh. Настройка всех коммутаторов происходит абсолютно идентично, меняется только имя и ip-адрес.

```

Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-aalushin-sw-1
msk-donskaya-aalushin-sw-1(config)#interface vlan2
^
% Invalid input detected at '^' marker.

msk-donskaya-aalushin-sw-1(config)#interface vlan2
msk-donskaya-aalushin-sw-1(config-if)#no shutdown
msk-donskaya-aalushin-sw-1(config-if)#ip address 10.128.1.2 255.255.255.0
msk-donskaya-aalushin-sw-1(config-if)#exit
msk-donskaya-aalushin-sw-1(config)#ip default-gateway 10.128.1.1
msk-donskaya-aalushin-sw-1(config)#line vty 0 4
msk-donskaya-aalushin-sw-1(config-line)#password cisco
msk-donskaya-aalushin-sw-1(config-line)#login
msk-donskaya-aalushin-sw-1(config-line)#exit
msk-donskaya-aalushin-sw-1(config)#line console 0
msk-donskaya-aalushin-sw-1(config-line)#password cisco
msk-donskaya-aalushin-sw-1(config-line)#login
msk-donskaya-aalushin-sw-1(config-line)#exit
msk-donskaya-aalushin-sw-1(config)#enable secret cisco
msk-donskaya-aalushin-sw-1(config)#service password-encryption
msk-donskaya-aalushin-sw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-aalushin-sw-1(config)#ip domain-name dons-kaya-rudn-edu
msk-donskaya-aalushin-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-aalushin-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-donskaya-aalushin-sw-1(config)#
*Mar 1 0:4:32.287: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-aalushin-sw-1(config)#line vty 0 4
msk-donskaya-aalushin-sw-1(config-line)#transport input ssh
msk-donskaya-aalushin-sw-1(config-line)#exit
msk-donskaya-aalushin-sw-1(config)#exit
msk-donskaya-aalushin-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-aalushin-sw-1#
msk-donskaya-aalushin-sw-1#write memory

```

Рис. 2.2: Настройка msk-donskaya-aalushin-sw-1

```

msk-donskaya-aalushin-sw-2 (config-if)#no shutdown
msk-donskaya-aalushin-sw-2 (config-if)#ip address 10.128.1.3
% Incomplete command.
msk-donskaya-aalushin-sw-2 (config-if)#ip address 10.128.1.3 255.255.255.0
msk-donskaya-aalushin-sw-2 (config-if)#exit
msk-donskaya-aalushin-sw-2 (config)#ip default-gateway 10.128.1.1
^
% Invalid input detected at '^' marker.

msk-donskaya-aalushin-sw-2 (config)#ip default-gateway 10.128.1.1
msk-donskaya-aalushin-sw-2 (config)#line vty 0 4
msk-donskaya-aalushin-sw-2 (config-line)#password cisco
msk-donskaya-aalushin-sw-2 (config-line)#lison
^
% Invalid input detected at '^' marker.

msk-donskaya-aalushin-sw-2 (config-line)#login
msk-donskaya-aalushin-sw-2 (config-line)#exit
msk-donskaya-aalushin-sw-2 (config)#enable secret cisco
msk-donskaya-aalushin-sw-2 (config)#service password-encryption
msk-donskaya-aalushin-sw-2 (config)#username admin privilege 1 secret cisco
msk-donskaya-aalushin-sw-2 (config)#ip domain-name dons-kaya-rudn-edu
msk-donskaya-aalushin-sw-2 (config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-aalushin-sw-2.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-aalushin-sw-2 (config)#line vty 0 4
*Mar 1 0:23:18.265: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-aalushin-sw-2 (config-line)#transport input ssh
msk-donskaya-aalushin-sw-2 (config-line)#exit
msk-donskaya-aalushin-sw-2 (config)#
msk-donskaya-aalushin-sw-2 (config)#write memory

```

Рис. 2.3: Настройка msk-donskaya-aalushin-sw-2

```

msk-donskaya-aalushin-sw-3(config)#interface vlan2
msk-donskaya-aalushin-sw-3(config-if)#no shutdown
msk-donskaya-aalushin-sw-3(config-if)#ip address 10.128.1.4 255.255.255.0
msk-donskaya-aalushin-sw-3(config-if)#exit
msk-donskaya-aalushin-sw-3(config)#ip default-gateway 10.128.1.1
msk-donskaya-aalushin-sw-3(config)#line vty 0 4
msk-donskaya-aalushin-sw-3(config-line)#password cisco
msk-donskaya-aalushin-sw-3(config-line)#login
msk-donskaya-aalushin-sw-3(config-line)#exit
msk-donskaya-aalushin-sw-3(config)#line console 0
msk-donskaya-aalushin-sw-3(config-line)#password cisco
msk-donskaya-aalushin-sw-3(config-line)#login
msk-donskaya-aalushin-sw-3(config-line)#exit
msk-donskaya-aalushin-sw-3(config)#enable secret cisco
msk-donskaya-aalushin-sw-3(config)#service password-encryption
msk-donskaya-aalushin-sw-3(config)#username admin privilege 1 secret cisco
                                     ^
% Invalid input detected at '^' marker.

msk-donskaya-aalushin-sw-3(config)#username admin privilege 1 secret cisco
msk-donskaya-aalushin-sw-3(config)#ip domain-name donsokaya.rudn.edu
msk-donskaya-aalushin-sw-3(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-aalushin-sw-3.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-aalushin-sw-3(config)#
*Mar 1 0:27:56.811: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-aalushin-sw-3(config)#live vty 4
                                     ^
% Invalid input detected at '^' marker.

msk-donskaya-aalushin-sw-3(config)#line vty 4
msk-donskaya-aalushin-sw-3(config-line)#transport input ssh
msk-donskaya-aalushin-sw-3(config-line)#exit
msk-donskaya-aalushin-sw-3(config)#exit
msk-donskaya-aalushin-sw-3#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-aalushin-sw-3#write memory

```

Рис. 2.4: Настройка msk-donskaya-aalushin-sw-3

```

Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-aalushin-sw-4
msk-donskaya-aalushin-sw-4(config)#interface vlan2
msk-donskaya-aalushin-sw-4(config-if)#no shutdown
msk-donskaya-aalushin-sw-4(config-if)#ip address 10.128.1.5 255.255.255.0
msk-donskaya-aalushin-sw-4(config-if)#exit
msk-donskaya-aalushin-sw-4(config)#ip default-gateway 10.128.1.1
msk-donskaya-aalushin-sw-4(config)#line vty 4
msk-donskaya-aalushin-sw-4(config-line)#password cisco
msk-donskaya-aalushin-sw-4(config-line)#login
msk-donskaya-aalushin-sw-4(config-line)#exit
msk-donskaya-aalushin-sw-4(config)#line console 0
msk-donskaya-aalushin-sw-4(config-line)#password cisco
msk-donskaya-aalushin-sw-4(config-line)#login
msk-donskaya-aalushin-sw-4(config-line)#exit
msk-donskaya-aalushin-sw-4(config)#enable secret cisco
msk-donskaya-aalushin-sw-4(config)#service password-encryption
msk-donskaya-aalushin-sw-4(config)#username admin privilege 1 secret cisco
msk-donskaya-aalushin-sw-4(config)#ip domain-name donsкаya.rudn.edu
msk-donskaya-aalushin-sw-4(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-aalushin-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-aalushin-sw-4(config)#line vty
*Mar 1 0:32:1.200: %SSH-5-ENABLED: SSH 1.99 has been enabled
% Incomplete command.
msk-donskaya-aalushin-sw-4(config)#line vty 0 4
msk-donskaya-aalushin-sw-4(config-line)#transport input ssh
msk-donskaya-aalushin-sw-4(config-line)#exit
msk-donskaya-aalushin-sw-4(config)#exit
msk-donskaya-aalushin-sw-4#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-aalushin-sw-4#
msk-donskaya-aalushin-sw-4#|

```

Рис. 2.5: Настройка msk-donskaya-aalushin-sw-4



```

msk-pavlovskaya-aalushin-sw-1(config)#interface vlan2
msk-pavlovskaya-aalushin-sw-1(config-if)#no shutdown
msk-pavlovskaya-aalushin-sw-1(config-if)#ip address 10.128.1.6 255.255.255.0
msk-pavlovskaya-aalushin-sw-1(config-if)#exit
msk-pavlovskaya-aalushin-sw-1(config)#ip default-gateway 10.128.1.1
msk-pavlovskaya-aalushin-sw-1(config)#line vty
% Incomplete command.
msk-pavlovskaya-aalushin-sw-1(config)#line vty 0 4
msk-pavlovskaya-aalushin-sw-1(config-line)#password cisco
msk-pavlovskaya-aalushin-sw-1(config-line)#login
msk-pavlovskaya-aalushin-sw-1(config-line)#exit
msk-pavlovskaya-aalushin-sw-1(config)#line console 0
msk-pavlovskaya-aalushin-sw-1(config-line)#password cisco
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-aalushin-sw-1(config-line)#password cisco
msk-pavlovskaya-aalushin-sw-1(config-line)#login
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-aalushin-sw-1(config-line)#login
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-aalushin-sw-1(config-line)#login
msk-pavlovskaya-aalushin-sw-1(config-line)#exit
msk-pavlovskaya-aalushin-sw-1(config)#enable secret cisco
msk-pavlovskaya-aalushin-sw-1(config)#service password-encryption
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-aalushin-sw-1(config)#service password-encryption
msk-pavlovskaya-aalushin-sw-1(config)#username admin privilege 1 secret cisco
msk-pavlovskaya-aalushin-sw-1(config)#ip domain-name pavlovskaya.rudn.edu
msk-pavlovskaya-aalushin-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-pavlovskaya-aalushin-sw-1.pavlovskaya.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-aalushin-sw-1(config)#
*Mar 1 0:35:3.959: %SSH-5-ENABLED: SSH 1.99 has been enabled

```

Рис. 2.6: Настройка msk-pavlovskaya-aalushin-sw-1

## **3 Выводы**

Я провёл подготовительную работу по первоначальной настройке коммутаторов сети.