

Лабораторная работа 4

Первоначальное конфигурирование сети

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Информация

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Цель работы

Провести подготовительную работу по первоначальной настройке коммутаторов сети.

Задание

- 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

Выполнение лабораторной работы

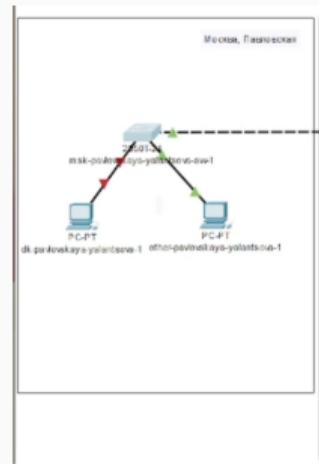


Рис. 1: Размещение коммутаторов и оконечных устройств согласно схеме сети L1 в
Москва, Павловская

Выполнение лабораторной работы

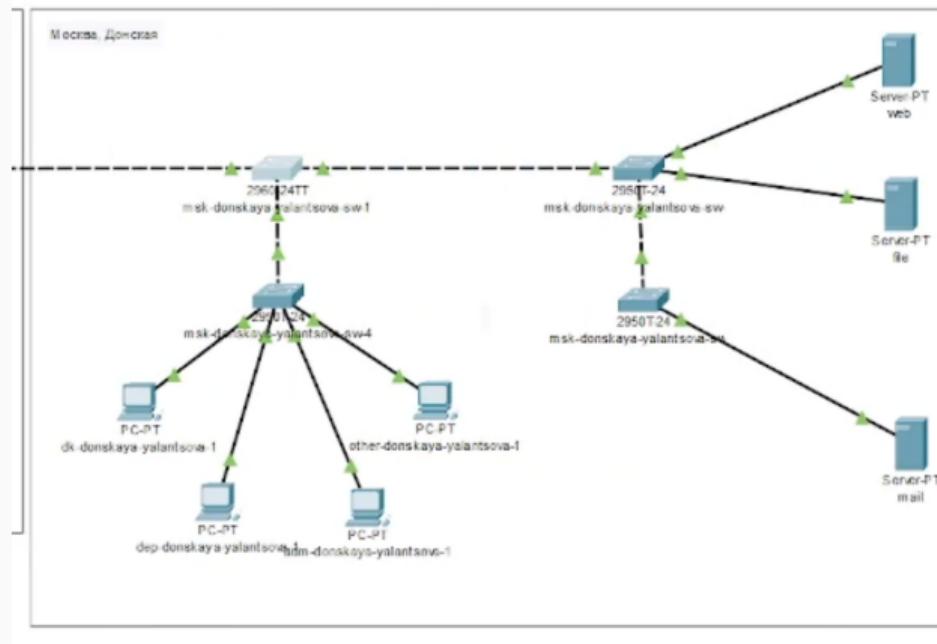


Рис. 2: Размещение коммутаторов и оконечных устройств согласно схеме сети L1 в
Москва, Донская

Выполнение лабораторной работы

```
Switch>enable
Switch>configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-yalantsova-sw-1
msk-donskaya-yalantsova-sw-1(config)#interface vlan2
msk-donskaya-yalantsova-sw-1(config-if)#no shutdown
msk-donskaya-yalantsova-sw-1(config-if)#ip address 10.128.1.2 255.255.255.0
msk-donskaya-yalantsova-sw-1(config-if)#exit
msk-donskaya-yalantsova-sw-1(config)#ip default gateway 10.128.1.1
                                         ^
% Invalid input detected at '^' marker.

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

msk-donskaya-yalantsova-sw-1(config-line)#password cisco
msk-donskaya-yalantsova-sw-1(config-line)#login
msk-donskaya-yalantsova-sw-1(config-line)#exit
msk-donskaya-yalantsova-sw-1(config-line)#enable 0
msk-donskaya-yalantsova-sw-1(config-line)#password cisco
msk-donskaya-yalantsova-sw-1(config-line)#login
msk-donskaya-yalantsova-sw-1(config-line)#exit
msk-donskaya-yalantsova-sw-1(config)#secret cisco
msk-donskaya-yalantsova-sw-1(config)#service password encryption
                                         ^
% Invalid input detected at '^' marker.

msk-donskaya-yalantsova-sw-1(config)#service password-encryption
msk-donskaya-yalantsova-sw-1(config)#username admin privilege 1 secret cisco
msk-donskaya-yalantsova-sw-1(config)#ip domain name donskaya.rudn.edu
msk-donskaya-yalantsova-sw-1(config)#crypto key generate rsa
The name for the keys will be msk-donskaya-yalantsova-sw-1.donskaya.rudn.edu
Once the size of the key modulus is in the range of 360 to 4096 for public
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-yalantsova-sw-1(config)#ip domain-name donskaya.rudn.edu
*New I 0.0.1.0/32 0000-0-ENABLED 2011-09-19 00:00:00
*msk-donskaya-yalantsova-sw-1 has been configured to generate keys
% You already have RSA keys defined named msk-donskaya-yalantsova-sw-1.donskaya.rudn.edu .
% Do you really want to replace them? (yes/no): no
msk-donskaya-yalantsova-sw-1(config-line)vty 0 4
msk-donskaya-yalantsova-sw-1(config-line)#transport input ssh
msk-donskaya-yalantsova-sw-1(config-line)#exit
msk-donskaya-yalantsova-sw-1(config)#exit
```

Рис. 3: Конфигурация коммутатора msk-donskaya-yalantsova-sw-1

Выполнение лабораторной работы



The screenshot shows the Cisco IOS Command Line Interface (CLI) running on a device named 'msk-donskaya-yalantsova-sw-2'. The interface is in 'Config' mode, indicated by the tab at the top. The command history displays the configuration steps:

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-yalantsova-sw-1
msk-donskaya-yalantsova-sw-1(config)#hostname msk-donskaya-yalantsova-sw-2
msk-donskaya-yalantsova-sw-2(config)#interface vland
msk-donskaya-yalantsova-sw-2(config-if)#no shutdown
msk-donskaya-yalantsova-sw-2(config-if)#ip address 10.128.1.3 255.255.255.0
msk-donskaya-yalantsova-sw-2(config-if)#exit
msk-donskaya-yalantsova-sw-2(config)#ip default-gateway 10.128.1.1
msk-donskaya-yalantsova-sw-2(config)#line vty 0 4
msk-donskaya-yalantsova-sw-2(config-line)#password cisco
msk-donskaya-yalantsova-sw-2(config-line)#login
msk-donskaya-yalantsova-sw-2(config-line)#exit
msk-donskaya-yalantsova-sw-2(config)#line console 0
msk-donskaya-yalantsova-sw-2(config-line)#password cisco
msk-donskaya-yalantsova-sw-2(config-line)#login
msk-donskaya-yalantsova-sw-2(config-line)#exit
msk-donskaya-yalantsova-sw-2(config)#enable secret cisco
msk-donskaya-yalantsova-sw-2(config)#service password encryption
%
% Invalid input detected at '^' marker.

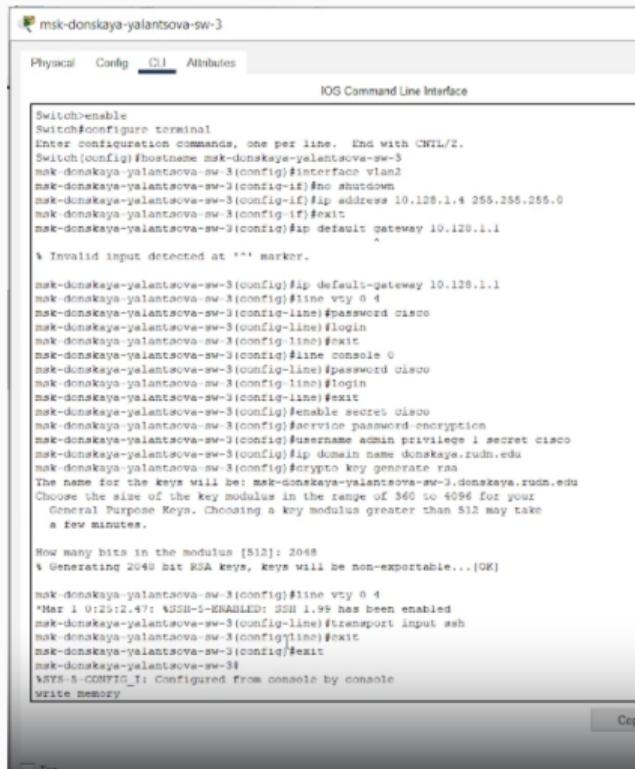
msk-donskaya-yalantsova-sw-2(config)#service password-encryption
msk-donskaya-yalantsova-sw-2(config)#username admin privilege 1 secret cisco
msk-donskaya-yalantsova-sw-2(config)#ip domain name donskaya.rudn.edu
msk-donskaya-yalantsova-sw-2(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-yalantsova-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-yalantsova-sw-2(config)#line vty 0 4
% Mar 1 01:19:44.522: %SSH-5-ENABLED: SSH 1.99 has been enabled
msk-donskaya-yalantsova-sw-2(config-line)#transport input ssh
msk-donskaya-yalantsova-sw-2(config-line)#exit
msk-donskaya-yalantsova-sw-2(config)#exit
msk-donskaya-yalantsova-sw-2#
%SYS-5-CONFIG-T: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-yalantsova-sw-2#
```

Рис. 4: Конфигурация коммутатора msk-donskaya-yalantsova-sw-2

Выполнение лабораторной работы



The screenshot shows a terminal window titled "msk-donskaya-yalantsova-sw-3". The window has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" being the active tab. The title bar also displays "IOS Command Line Interface". The main area of the window contains the following configuration commands:

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CRTL/Z.
Switch(config)#hostname msk-donskaya-yalantsova-sw-3
msk-donskaya-yalantsova-sw-3(config)#interface vlan2
msk-donskaya-yalantsova-sw-3(config-if)#no shutdown
msk-donskaya-yalantsova-sw-3(config-if)#ip address 10.128.1.4 255.255.255.0
msk-donskaya-yalantsova-sw-3(config-if)#exit
msk-donskaya-yalantsova-sw-3(config)#ip default gateway 10.128.1.1
^
% Invalid input detected at '***' marker.

msk-donskaya-yalantsova-sw-3(config)#ip default-gateway 10.128.1.1
msk-donskaya-yalantsova-sw-3(config)#line vty 0 4
msk-donskaya-yalantsova-sw-3(config-line)#password cisco
msk-donskaya-yalantsova-sw-3(config-line)#login
msk-donskaya-yalantsova-sw-3(config-line)#exit
msk-donskaya-yalantsova-sw-3(config)#line console 0
msk-donskaya-yalantsova-sw-3(config-line)#password cisco
msk-donskaya-yalantsova-sw-3(config-line)#login
msk-donskaya-yalantsova-sw-3(config-line)#exit
msk-donskaya-yalantsova-sw-3(config)#enable secrets cisco
msk-donskaya-yalantsova-sw-3(config)#service password-encryption
msk-donskaya-yalantsova-sw-3(config)#username admin privilege 1 secret cisco
msk-donskaya-yalantsova-sw-3(config)#ip domain name donskaya.rudn.edu
msk-donskaya-yalantsova-sw-3(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-yalantsova-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-yalantsova-sw-3(config)#line vty 0 4
*Mar 0 0:25:12.47: %SSH-2-ENABLED: SSH 1.99 has been enabled
msk-donskaya-yalantsova-sw-3(config-line)#transport input ssh
msk-donskaya-yalantsova-sw-3(config-line)#exit
msk-donskaya-yalantsova-sw-3(config)#exit
msk-donskaya-yalantsova-sw-3#
%SYS-3-CONFIG_I: Configured from console by console
write memory
```

At the bottom right of the terminal window, there is a "Copy" button.

Рис. 5: Конфигурация коммутатора msk-donskaya-yalantsova-sw-3

Выполнение лабораторной работы

The screenshot shows a terminal window titled "msk-donskaya-yalantsova-sw-4". The tab bar includes "Physical", "Config", "CLI" (which is selected), and "Attributes". The main area displays the IOS Command Line Interface (CLI) configuration commands:

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-donskaya-sw-4
Switch(config)#
% Invalid input detected at '^' marker.

Switch(config)#hostname msk-donskaya-yalantsova-sw-4
msk-donskaya-yalantsova-sw-4(config)#interface vlan2
msk-donskaya-yalantsova-sw-4(config-if)#no shutdown
msk-donskaya-yalantsova-sw-4(config-if)#ip address 10.128.1.2 255.255.255.0
msk-donskaya-yalantsova-sw-4(config-if)#ip address 10.128.1.1 255.255.255.0
msk-donskaya-yalantsova-sw-4(config-if)#exit
msk-donskaya-yalantsova-sw-4(config)#ip default gateway 10.128.1.1
% Invalid input detected at '^' marker.

msk-donskaya-yalantsova-sw-4(config)#ip default-gateway 10.128.1.1
msk-donskaya-yalantsova-sw-4(config)#line vty 0 4
msk-donskaya-yalantsova-sw-4(config-line)#password cisco
msk-donskaya-yalantsova-sw-4(config-line)#login
msk-donskaya-yalantsova-sw-4(config-line)#exit
msk-donskaya-yalantsova-sw-4(config)#line console 0
msk-donskaya-yalantsova-sw-4(config-line)#password cisco
msk-donskaya-yalantsova-sw-4(config-line)#login
msk-donskaya-yalantsova-sw-4(config-line)#exit
msk-donskaya-yalantsova-sw-4(config)#enable secret cisco
msk-donskaya-yalantsova-sw-4(config)#service password-encryption
msk-donskaya-yalantsova-sw-4(config)#username admin privilege 1 secret cisco
msk-donskaya-yalantsova-sw-4(config)#ip domain-name donskaya.rudn.edu
msk-donskaya-yalantsova-sw-4(config)#crypto key generate rsa
The name for the keys will be: msk-donskaya-yalantsova-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-yalantsova-sw-4(config)#

```

A "Copy" button is visible at the bottom right of the terminal window.

Рис. 6: Конфигурация коммутатора msk-donskaya-yalantsova-sw-4

Выполнение лабораторной работы

```
msk-donskaya-yalantsova-sw-4(config)#line vty 0 4
*Mar 1 0:31:52.578: %SSH-5-ENABLED: SSH 1.59 has been enabled
msk-donskaya-yalantsova-sw-4(config-line)#transport input ssh
msk-donskaya-yalantsova-sw-4(config-line)#exit
msk-donskaya-yalantsova-sw-4(config)#exit
msk-donskaya-yalantsova-sw-4#
%SYS-5-CONFIG_I: Configured from console by console
write memory
Building configuration...
[OK]
msk-donskaya-yalantsova-sw-4#
```

Рис. 7: Конфигурация коммутатора msk-donskaya-yalantsova-sw-4

Выполнение лабораторной работы

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-pavlovskaya-yalantsova-sw-1
msk-pavlovskaya-yalantsova-sw-1(config)#interface vlan3
msk-pavlovskaya-yalantsova-sw-1(config-if)#no shutdown
msk-pavlovskaya-yalantsova-sw-1(config-if)#ip address 10.128.1.6 255.255.255.0
msk-pavlovskaya-yalantsova-sw-1(config-if)#exit
msk-pavlovskaya-yalantsova-sw-1(config)#ip default-gateway 10.128.1.1
msk-pavlovskaya-yalantsova-sw-1(config)#line vty 0 4
msk-pavlovskaya-yalantsova-sw-1(config-line)#password cisco
msk-pavlovskaya-yalantsova-sw-1(config-line)#login
msk-pavlovskaya-yalantsova-sw-1(config-line)#exit
msk-pavlovskaya-yalantsova-sw-1(config)#line console 0
msk-pavlovskaya-yalantsova-sw-1(config-line)#password cisco
msk-pavlovskaya-yalantsova-sw-1(config-line)#login
msk-pavlovskaya-yalantsova-sw-1(config-line)#exit
msk-pavlovskaya-yalantsova-sw-1(config)#enable secret cisco
msk-pavlovskaya-yalantsova-sw-1(config)#service password-encryption
msk-pavlovskaya-yalantsova-sw-1(config)#username admin privilege 1 secret cisco
msk-pavlovskaya-yalantsova-sw-1(config)#ip domain name donskaya.rudn.edu
msk-pavlovskaya-yalantsova-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-pavlovskaya-yalantsova-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-yalantsova-sw-1(config)#line vty 0 4
*Mar 1 01:55:23.701 %SSH-5-FNARZEH: SSH 1.09 has been enabled
msk-pavlovskaya-yalantsova-sw-1(config-line)#transport input ssh
msk-pavlovskaya-yalantsova-sw-1(config-line)#exit
msk-pavlovskaya-yalantsova-sw-1(config)#exit
msk-pavlovskaya-yalantsova-sw-1#
[DNS-S-CONFIG] Configured from console by console
writing memory
Building configuration...
[OK]
msk-pavlovskaya-yalantsova-sw-1$
```

Copy Print

Рис. 8: Конфигурация коммутатора msk-pavlovskaya-yalantsova-sw-1

Выводы

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