

Лабораторная работа №5

Конфигурирование VLAN

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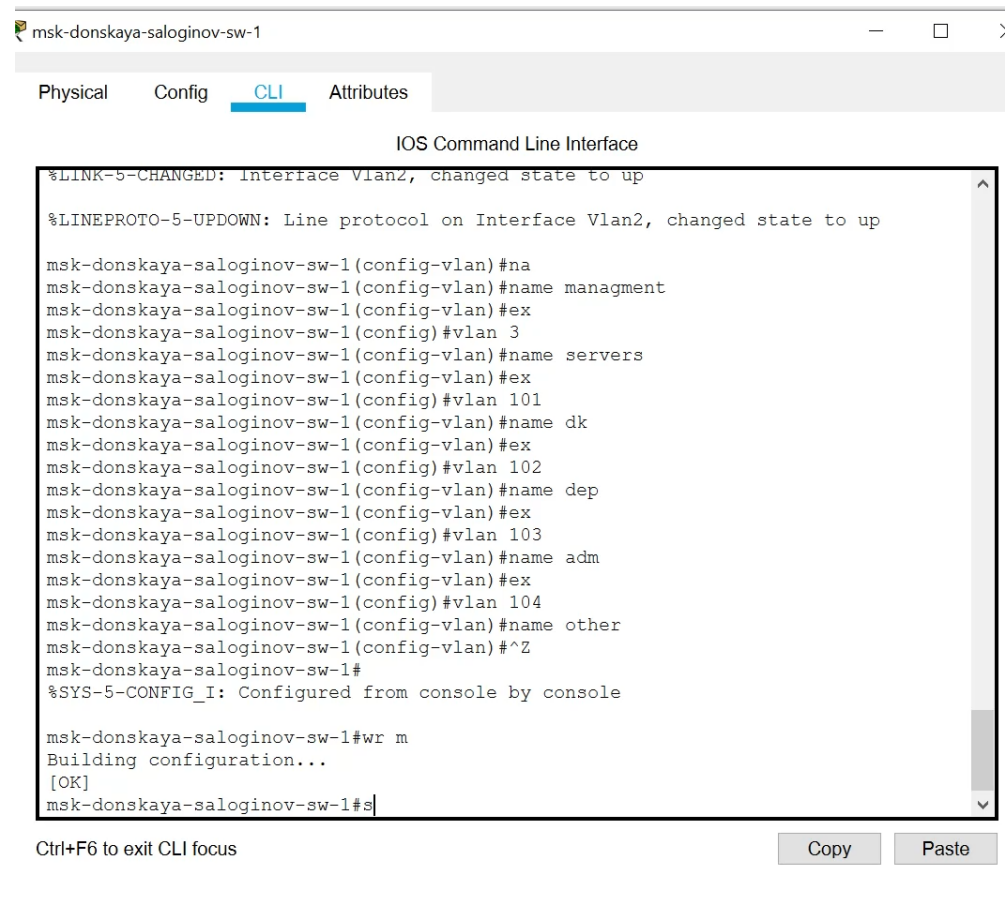
Этап 1

msk-donskaya-saluginov-sw-1

Physical Config CLI Attributes

```
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
switchport mode trunk
!
interface GigabitEthernet0/1
switchport mode trunk
!
interface GigabitEthernet0/2
switchport mode trunk
!
interface Vlan1
no ip address
shutdown
!
interface Vlan2
mac-address 0001.43e2.0501
ip address 10.128.1.2 255.255.255.0
!
--More--
```

Этап 2



The screenshot shows a window titled "msk-donskaya-salaginov-sw-1" with tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The interface shows a series of configuration commands and system messages. The commands are entered in a sequence, creating multiple VLANs and assigning names to them. The messages indicate that the interface state has changed to up and that the configuration is being built. The window also includes a "Copy" button and a "Paste" button at the bottom right.

```
msk-donskaya-salaginov-sw-1
Physical Config CLI Attributes

IOS Command Line Interface

%LINK-5-CHANGED: Interface Vlan2, changed state to up

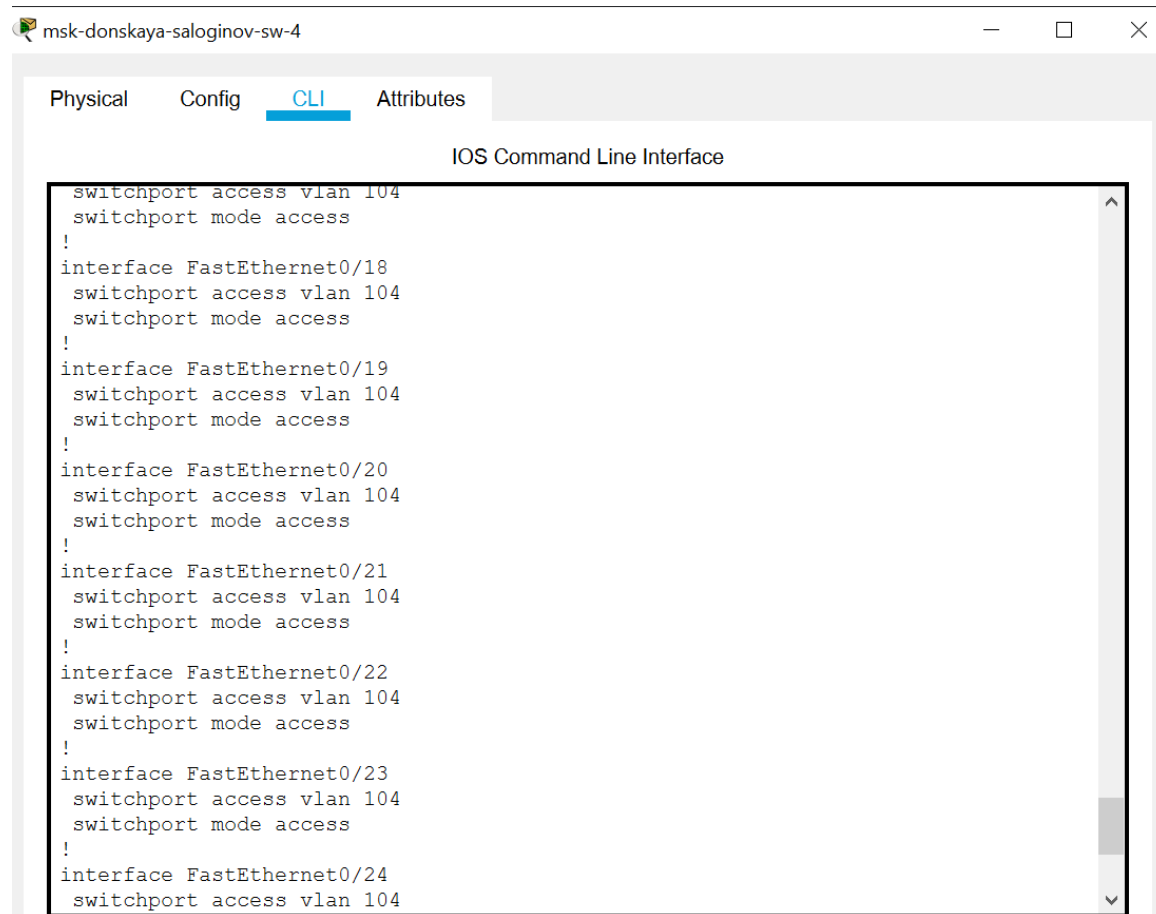
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan2, changed state to up

msk-donskaya-salaginov-sw-1(config-vlan)#na
msk-donskaya-salaginov-sw-1(config-vlan)#name managment
msk-donskaya-salaginov-sw-1(config-vlan)#ex
msk-donskaya-salaginov-sw-1(config)#vlan 3
msk-donskaya-salaginov-sw-1(config-vlan)#name servers
msk-donskaya-salaginov-sw-1(config-vlan)#ex
msk-donskaya-salaginov-sw-1(config)#vlan 101
msk-donskaya-salaginov-sw-1(config-vlan)#name dk
msk-donskaya-salaginov-sw-1(config-vlan)#ex
msk-donskaya-salaginov-sw-1(config)#vlan 102
msk-donskaya-salaginov-sw-1(config-vlan)#name dep
msk-donskaya-salaginov-sw-1(config-vlan)#ex
msk-donskaya-salaginov-sw-1(config)#vlan 103
msk-donskaya-salaginov-sw-1(config-vlan)#name adm
msk-donskaya-salaginov-sw-1(config-vlan)#ex
msk-donskaya-salaginov-sw-1(config)#vlan 104
msk-donskaya-salaginov-sw-1(config-vlan)#name other
msk-donskaya-salaginov-sw-1(config-vlan)#^Z
msk-donskaya-salaginov-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-salaginov-sw-1#wr m
Building configuration...
[OK]
msk-donskaya-salaginov-sw-1#s

Ctrl+F6 to exit CLI focus
Copy Paste
```

Этап 3



The screenshot shows a network configuration window titled "msk-donskaya-saluginov-sw-4". It has four tabs: "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is selected and highlighted with a blue underline. Below the tabs, the text "IOS Command Line Interface" is centered. A large text area contains the following configuration commands:

```
switchport access vlan 104
switchport mode access
!
interface FastEthernet0/18
switchport access vlan 104
switchport mode access
!
interface FastEthernet0/19
switchport access vlan 104
switchport mode access
!
interface FastEthernet0/20
switchport access vlan 104
switchport mode access
!
interface FastEthernet0/21
switchport access vlan 104
switchport mode access
!
interface FastEthernet0/22
switchport access vlan 104
switchport mode access
!
interface FastEthernet0/23
switchport access vlan 104
switchport mode access
!
interface FastEthernet0/24
switchport access vlan 104
```

A vertical scrollbar is visible on the right side of the text area, indicating that the configuration continues beyond what is shown.

Этап 4

The image displays three overlapping screenshots of a network configuration interface, likely from a Cisco Packet Tracer environment, showing the configuration of a FastEthernet0 interface. The interface is divided into tabs: Physical, Config (selected), Desktop, Programming, and Attributes. The left sidebar shows a tree structure with GLOBAL, Settings, Algorithm Settings, INTERFACE, FastEthernet0 (selected), and Bluetooth.

Top Screenshot (msk-donskaya-salaginov-dk):

- Port Status: ☒ On
- Bandwidth: ☒ 100 Mbps ☐ 10 Mbps
- Duplex: ☐ Half Duplex ☒ Full Duplex
- MAC Address: 0001.979A.EA34
- IP Configuration: ☐ DHCP ☒ Static
- IPv4 Address: 10.128.3.201
- Subnet Mask: 255.255.255.0

Bottom Left Screenshot (msk-donskaya-salaginov-dep):

- Port Status: ☐ On ☐ Off
- Bandwidth: ☐ 100 Mbps ☐ 10 Mbps
- Duplex: ☐ Half Duplex ☒ Full Duplex
- MAC Address: 0090.215B.AA32
- IP Configuration: ☐ DHCP ☒ Static
- IPv4 Address: 10.128.4.201
- Subnet Mask: 255.255.255.0

Bottom Right Screenshot (msk-donskaya-salaginov-adm):

- Port Status: ☐ On ☐ Off
- Bandwidth: ☐ 100 Mbps ☐ 10 Mbps
- Duplex: ☐ Half Duplex ☒ Full Duplex
- MAC Address: 0090.2B78.690B
- IP Configuration: ☐ DHCP ☒ Static
- IPv4 Address: 10.128.5.201
- Subnet Mask: 255.255.255.0

Этап 5

msk-donskaya-salaginov-dk

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Link-local IPv6 Address . . . . . : fe80::1234:5678:9abc::1
IPv6 Address . . . . . : ::
IPv4 Address . . . . . : 10.128.3.201
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : ::
                        10.128.3.1
```

Bluetooth Connection:

```
Connection-specific DNS Suffix...:
Link-local IPv6 Address . . . . . : ::
IPv6 Address . . . . . : ::
IPv4 Address . . . . . : 0.0.0.0
Subnet Mask . . . . . : 0.0.0.0
Default Gateway . . . . . : ::
                        0.0.0.0
```

C:\>ping 10.128.3.202

Pinging 10.128.3.202 with 32 bytes of data:

```
Reply from 10.128.3.202: bytes=32 time=12ms TTL=128
Reply from 10.128.3.202: bytes=32 time=10ms TTL=128
Reply from 10.128.3.202: bytes=32 time<1ms TTL=128
Reply from 10.128.3.202: bytes=32 time<1ms TTL=128
```

Ping statistics for 10.128.3.202:

```
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 5ms
```

msk-donskaya-salaginov-dk

Physical Config **Desktop** Programming Attributes

Command Prompt

Bluetooth Connection:

```
Connection-specific DNS Suffix...:
Link-local IPv6 Address . . . . . : ::
IPv6 Address . . . . . : ::
IPv4 Address . . . . . : 0.0.0.0
Subnet Mask . . . . . : 0.0.0.0
Default Gateway . . . . . : ::
                        0.0.0.0
```

C:\>ping 10.128.3.202

Pinging 10.128.3.202 with 32 bytes of data:

```
Reply from 10.128.3.202: bytes=32 time=12ms TTL=128
Reply from 10.128.3.202: bytes=32 time=10ms TTL=128
Reply from 10.128.3.202: bytes=32 time<1ms TTL=128
Reply from 10.128.3.202: bytes=32 time<1ms TTL=128
```

Ping statistics for 10.128.3.202:

```
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 5ms
```

C:\>ping 10.128.4.201

Pinging 10.128.4.201 with 32 bytes of data:

Request timed out.

Контрольные вопросы

- Какая команда используется для просмотра списка VLAN на сетевом устройстве?
- Охарактеризуйте VLAN Trunking Protocol (VTP). Приведите перечень команд с пояснениями для настройки и просмотра информации о VLAN.
- Охарактеризуйте Internet Control Message Protocol (ICMP). Опишите формат пакета ICMP.
- Охарактеризуйте Address Resolution Protocol (ARP). Опишите формат пакета ARP.
- Что такое MAC-адрес? Какова его структура?