

РОССИЙСКИЙ УНИВЕРСИТЕТ ДРУЖБЫ НАРОДОВ

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ОТЧЕТ

ПО ЛАБОРАТОРНОЙ РАБОТЕ № 5

Конфигурирование VLAN

дисциплина: Администрирование локальных сетей

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МОСКВА

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ЦЕЛЬ РАБОТЫ

Получить основные навыки по настройке VLAN на коммутаторах сети.

ХОД РАБОТЫ

1. На коммутаторах сети настроили Trunk-порты на соответствующих интерфейсах (Рис. 1-6).

```
msk-donskaya-agsargsyan-sw-1>en
Password:
msk-donskaya-agsargsyan-sw-1#con f
% Ambiguous command: "con f"
msk-donskaya-agsargsyan-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agsargsyan-sw-1(config)#interface g0/1
msk-donskaya-agsargsyan-sw-1(config-if)#switchport mode trunk

msk-donskaya-agsargsyan-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

msk-donskaya-agsargsyan-sw-1(config-if)#interface g0/2
msk-donskaya-agsargsyan-sw-1(config-if)#exit
msk-donskaya-agsargsyan-sw-1(config)#interface g0/2
msk-donskaya-agsargsyan-sw-1(config-if)#switchport mode trunk

msk-donskaya-agsargsyan-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

msk-donskaya-agsargsyan-sw-1(config-if)#
msk-donskaya-agsargsyan-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agsargsyan-sw-1#wr memory
Building configuration...
[OK]
msk-donskaya-agsargsyan-sw-1#sh run
```

Рис. 1

```
msk-donskaya-agsargsyan-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agsargsyan-sw-1(config)#interface f0/1
msk-donskaya-agsargsyan-sw-1(config-if)#switchport mode trunk

msk-donskaya-agsargsyan-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up

msk-donskaya-agsargsyan-sw-1(config-if)#exit
msk-donskaya-agsargsyan-sw-1(config)#exit
msk-donskaya-agsargsyan-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agsargsyan-sw-1#wr memory
Building configuration...
[OK]
msk-donskaya-agsargsyan-sw-1#
```

Рис. 2

```

Password:

msk-donskaya-agsargsyan-sw-2>en
Password:
msk-donskaya-agsargsyan-sw-2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agsargsyan-sw-2(config)#interface g0/1
msk-donskaya-agsargsyan-sw-2(config-if)#switchport mode trunk
msk-donskaya-agsargsyan-sw-2(config-if)#exit
msk-donskaya-agsargsyan-sw-2(config)#interface g0/2
msk-donskaya-agsargsyan-sw-2(config-if)#switchport mode trunk

msk-donskaya-agsargsyan-sw-2(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

msk-donskaya-agsargsyan-sw-2(config-if)#exit
msk-donskaya-agsargsyan-sw-2(config)#exit
msk-donskaya-agsargsyan-sw-2#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agsargsyan-sw-2#wr memory
Building configuration...
[OK]
msk-donskaya-agsargsyan-sw-2#sh run

```

Рис. 3

```

msk-donskaya-agsargsyan-3>en
Password:
msk-donskaya-agsargsyan-3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agsargsyan-3(config)#interface g0/1
msk-donskaya-agsargsyan-3(config-if)#switchport mode trunk
msk-donskaya-agsargsyan-3(config-if)#exit
msk-donskaya-agsargsyan-3(config)#exit
msk-donskaya-agsargsyan-3#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agsargsyan-3#wr memory
Building configuration...
[OK]
msk-donskaya-agsargsyan-3#

```

Рис. 4

```

msk-donskaya-agsargsyan-sw-4>en
Password:
msk-donskaya-agsargsyan-sw-4#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agsargsyan-sw-4(config)#interface g0/
^

% Invalid input detected at '^' marker.

msk-donskaya-agsargsyan-sw-4(config)#interface g0/1
msk-donskaya-agsargsyan-sw-4(config-if)#switchport mode trunk
msk-donskaya-agsargsyan-sw-4(config-if)#exit
msk-donskaya-agsargsyan-sw-4(config)#exit
msk-donskaya-agsargsyan-sw-4#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agsargsyan-sw-4#wr memory
Building configuration...
[OK]
msk-donskaya-agsargsyan-sw-4#

```

Рис. 5

```

msk-pavlovskaya-agsargsyan-sw-1#en
msk-pavlovskaya-agsargsyan-sw-1#con f
% Ambiguous command: "con f"
msk-pavlovskaya-agsargsyan-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-pavlovskaya-agsargsyan-sw-1(config)#cisco
^
% Invalid input detected at '^' marker.

msk-pavlovskaya-agsargsyan-sw-1(config)#interface f0/24
msk-pavlovskaya-agsargsyan-sw-1(config-if)#switchport mode trunk
msk-pavlovskaya-agsargsyan-sw-1(config-if)#
msk-pavlovskaya-agsargsyan-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-pavlovskaya-agsargsyan-sw-1#wr m
Building configuration...
[OK]
msk-pavlovskaya-agsargsyan-sw-1#

```

Рис. 6

2. Настроил коммутатор msk-donskaya-sw-1 как VTP-сервер и прописал на нём номера и названия VLAN (Рис. 7).

```

Building configuration...
[OK]
msk-donskaya-agsargsyan-sw-1#en
msk-donskaya-agsargsyan-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agsargsyan-sw-1(config)#vtp mode server
Device mode already VTP SERVER.
msk-donskaya-agsargsyan-sw-1(config)#vtp domain donsкаaya
Changing VTP domain name from NULL to donsкаaya
msk-donskaya-agsargsyan-sw-1(config)#vtp password cisco
Setting device VLAN database password to cisco
msk-donskaya-agsargsyan-sw-1(config)#vlan 2
msk-donskaya-agsargsyan-sw-1(config-vlan)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

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

msk-donskaya-agsargsyan-sw-1(config-vlan)#vlan 2
msk-donskaya-agsargsyan-sw-1(config-vlan)#name management
msk-donskaya-agsargsyan-sw-1(config-vlan)#vlan 3
msk-donskaya-agsargsyan-sw-1(config-vlan)#name servers
msk-donskaya-agsargsyan-sw-1(config-vlan)#vlan 101
msk-donskaya-agsargsyan-sw-1(config-vlan)#name dk
msk-donskaya-agsargsyan-sw-1(config-vlan)#vlan 102
msk-donskaya-agsargsyan-sw-1(config-vlan)#name departaments
msk-donskaya-agsargsyan-sw-1(config-vlan)#vlan 103
msk-donskaya-agsargsyan-sw-1(config-vlan)#name adm
msk-donskaya-agsargsyan-sw-1(config-vlan)#vlan 104
msk-donskaya-agsargsyan-sw-1(config-vlan)#name other
msk-donskaya-agsargsyan-sw-1(config-vlan)#
msk-donskaya-agsargsyan-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agsargsyan-sw-1#wr memory
Building configuration...
[OK]
msk-donskaya-agsargsyan-sw-1#

```

Рис. 7

3. Остальные коммутаторы указал как vtp клиенты (Рис. 8-11).

```

msk-donskaya-agarsargyan-sw-2>en
Password:
msk-donskaya-agarsargyan-sw-2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agarsargyan-sw-2(config)#vtp mode client
Setting device to VTP CLIENT mode.
msk-donskaya-agarsargyan-sw-2(config)#vtp password cisco
Setting device VLAN database password to cisco
msk-donskaya-agarsargyan-sw-2(config)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

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

msk-donskaya-agarsargyan-sw-2(config)#exit
msk-donskaya-agarsargyan-sw-2#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agarsargyan-sw-2#sh vlan

```

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17 Fa0/18 Fa0/19

Рис. 8

```

msk-donskaya-agarsargyan-3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-agarsargyan-3(config)#vtp mode client
Setting device to VTP CLIENT mode.
msk-donskaya-agarsargyan-3(config)#vtp password cisco
Setting device VLAN database password to cisco
msk-donskaya-agarsargyan-3(config)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

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

msk-donskaya-agarsargyan-3(config)#interface f0/1
msk-donskaya-agarsargyan-3(config-if)#switchport mode access
msk-donskaya-agarsargyan-3(config-if)#switchport access vlan 3
msk-donskaya-agarsargyan-3(config-if)#exit
msk-donskaya-agarsargyan-3(config)#exit
msk-donskaya-agarsargyan-3#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agarsargyan-3#wr m
Building configuration...
[OK]
msk-donskaya-agarsargyan-3#

```

Рис. 9

```

msk-donskaya-agsargsyan-sw-4(config)#vtp mode client
Setting device to VTP CLIENT mode.
msk-donskaya-agsargsyan-sw-4(config)#interface range f0/1 - 5
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport mode access
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport access vlan 101
msk-donskaya-agsargsyan-sw-4(config-if-range)#exit
^
% Invalid input detected at '^' marker.

msk-donskaya-agsargsyan-sw-4(config-if-range)#exit
msk-donskaya-agsargsyan-sw-4(config)#interface range f0/6 - 10
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport mode access
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport access vlan 102
msk-donskaya-agsargsyan-sw-4(config-if-range)#exit
msk-donskaya-agsargsyan-sw-4(config)#interface range f0/11 - 15
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport mode access
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport access vlan 103
msk-donskaya-agsargsyan-sw-4(config-if-range)#exit
msk-donskaya-agsargsyan-sw-4(config)#interface range f0/16 - 24
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport mode access
msk-donskaya-agsargsyan-sw-4(config-if-range)#switchport access vlan 104
msk-donskaya-agsargsyan-sw-4(config-if-range)#exit
msk-donskaya-agsargsyan-sw-4(config)#exit
msk-donskaya-agsargsyan-sw-4#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-agsargsyan-sw-4#wr memory
Building configuration...
[OK]
msk-donskaya-agsargsyan-sw-4#

```

Рис. 10

```

Primary Secondary Type          Ports
-----
msk-pavlovskaya-agsargsyan-sw-1#
msk-pavlovskaya-agsargsyan-sw-1#
msk-pavlovskaya-agsargsyan-sw-1#
msk-pavlovskaya-agsargsyan-sw-1#
msk-pavlovskaya-agsargsyan-sw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-pavlovskaya-agsargsyan-sw-1(config)#vtp mode client
Device mode already VTP CLIENT.
msk-pavlovskaya-agsargsyan-sw-1(config)#vtp password cisco
Setting device VLAN database password to cisco
msk-pavlovskaya-agsargsyan-sw-1(config)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

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

msk-pavlovskaya-agsargsyan-sw-1(config)#exit
msk-pavlovskaya-agsargsyan-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

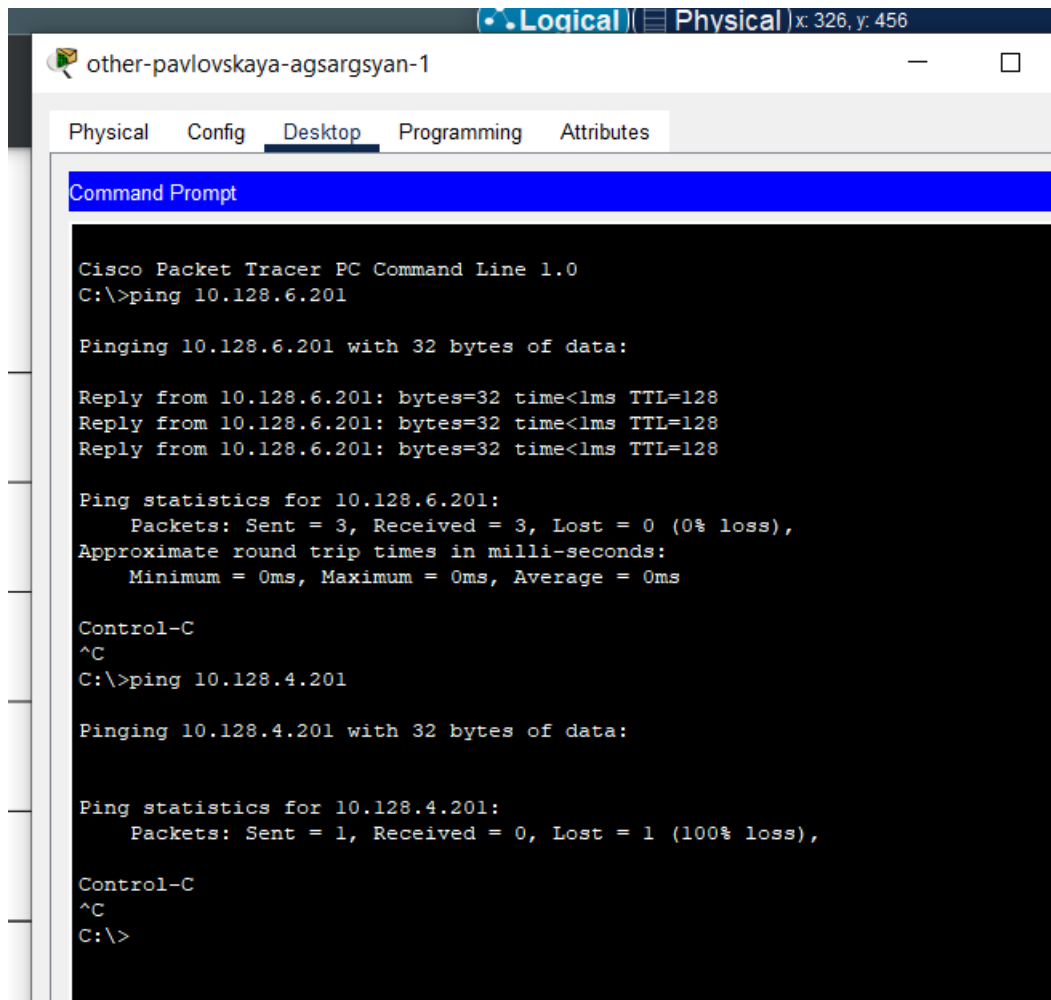
msk-pavlovskaya-agsargsyan-sw-1#sh vlan

```

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Gig0/1 Gig0/2
2	management	active	
3	servers	active	
101	dk	active	
102	departaments	active	
103	adm	active	

Рис. 11

4. После указания статических IP-адресов на оконечных устройствах проверьте с помощью команды ping доступность устройств, принадлежащих одному VLAN, и недоступность устройств, принадлежащих разным VLAN. (Рис. 12).



```
other-pavlovskaya-agsargsyan-1
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.128.6.201

Pinging 10.128.6.201 with 32 bytes of data:

Reply from 10.128.6.201: bytes=32 time<1ms TTL=128
Reply from 10.128.6.201: bytes=32 time<1ms TTL=128
Reply from 10.128.6.201: bytes=32 time<1ms TTL=128

Ping statistics for 10.128.6.201:
    Packets: Sent = 3, Received = 3, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

Control-C
^C
C:\>ping 10.128.4.201

Pinging 10.128.4.201 with 32 bytes of data:

Ping statistics for 10.128.4.201:
    Packets: Sent = 1, Received = 0, Lost = 1 (100% loss),

Control-C
^C
C:\>
```

Рис. 12

5. Смоделировал передачу пакета по сети, просмотрел заголовки протоколов (Рис. 13).

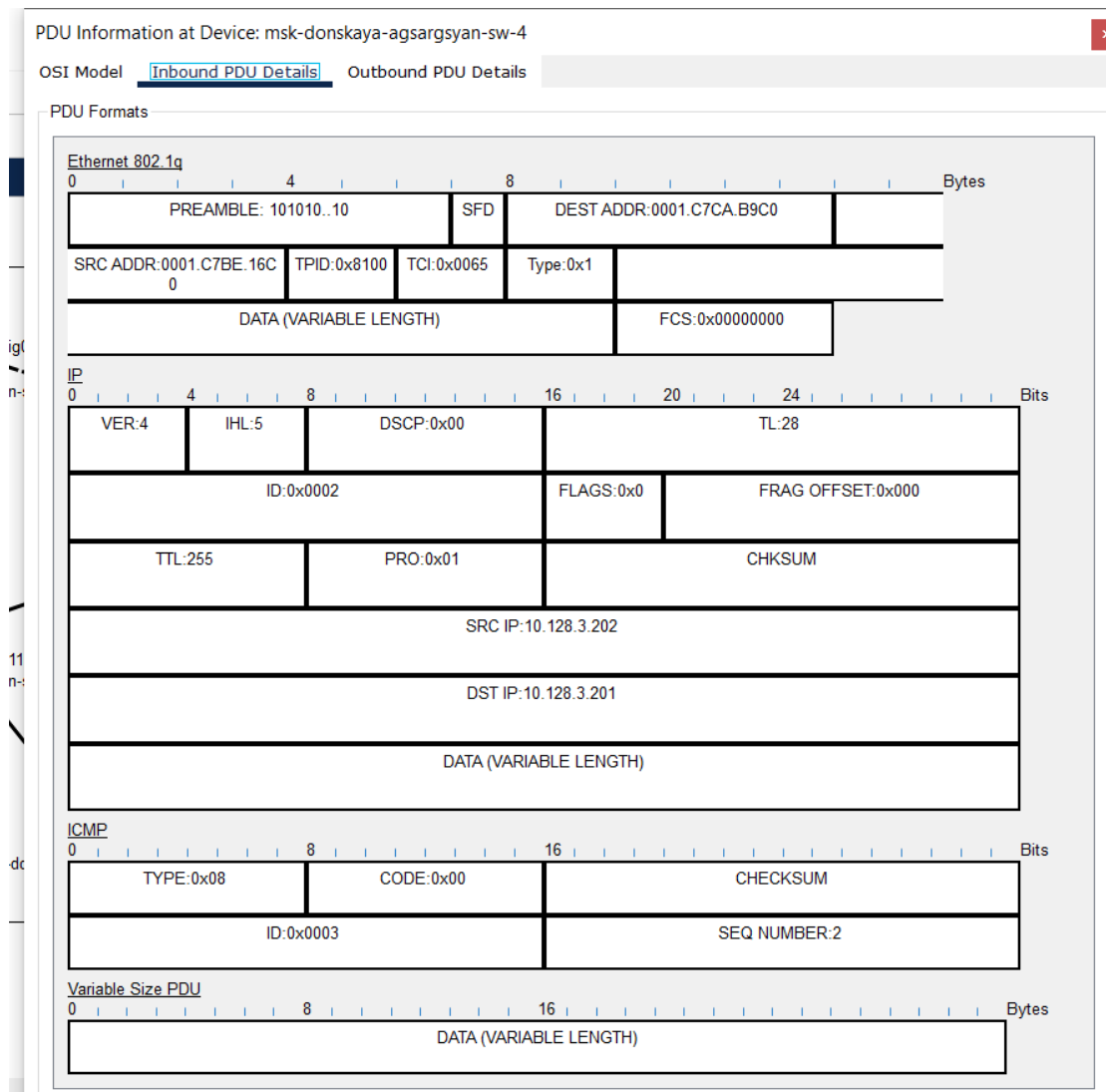


Рис. 13

Конфигурации оборудования

1. switch msk-donskaya-agsargsyan-sw-1

!

version 15.0

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname msk-donskaya-agsargsyan-sw-1

!

enable secret 5 \$1\$mERr\$hx5rVt7rPNoS4wqbXKX7m0

!

!

!


```
ip domain-name donskaya.rudn.edu
!
username admin secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
  switchport mode trunk
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
```

```
!  
interface FastEthernet0/14  
!  
interface FastEthernet0/15  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
!  
interface FastEthernet0/21  
!  
interface FastEthernet0/22  
!  
interface FastEthernet0/23  
!  
interface FastEthernet0/24  
!  
interface GigabitEthernet0/1  
  switchport mode trunk  
!  
interface GigabitEthernet0/2  
  switchport mode trunk  
!  
interface Vlan1  
  no ip address  
  shutdown  
!  
interface Vlan2  
  ip address 10.128.1.2 255.255.255.0
```

```
!  
ip default-gateway 10.128.1.1
```

```
!
```

```
!
```

```
!
```

```
!
```

```
line con 0
```

```
password 7 0822455D0A16
```

```
login
```

```
!
```

```
line vty 0 4
```

```
password 7 0822455D0A16
```

```
login
```

```
transport input ssh
```

```
line vty 5 15
```

```
login
```

```
!
```

```
!
```

```
!
```

```
!
```

```
end
```

2. msk-donskaya-agsargsyan-sw-2

```
!
```

```
version 12.1
```

```
no service timestamps log datetime msec
```

```
no service timestamps debug datetime msec
```

```
service password-encryption
```

```
!
```

```
hostname msk-donskaya-agsargsyan-sw-2
```

```
!
```

```
enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
```

```
!
```

```
!
```

```
!
```

```
ip domain-name dons kaya.rudn.edu
```

```
!  
username admin secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0  
!  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
interface FastEthernet0/1  
    switchport access vlan 3  
    switchport mode access  
!  
interface FastEthernet0/2  
    switchport access vlan 3  
    switchport mode access  
!  
interface FastEthernet0/3  
!  
interface FastEthernet0/4  
!  
interface FastEthernet0/5  
!  
interface FastEthernet0/6  
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
!  
interface FastEthernet0/12
```

```
!  
interface FastEthernet0/13  
!  
interface FastEthernet0/14  
!  
interface FastEthernet0/15  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
!  
interface FastEthernet0/21  
!  
interface FastEthernet0/22  
!  
interface FastEthernet0/23  
!  
interface FastEthernet0/24  
!  
interface GigabitEthernet0/1  
    switchport mode trunk  
!  
interface GigabitEthernet0/2  
    switchport mode trunk  
!  
interface Vlan1  
    no ip address  
    shutdown  
!
```

```
interface Vlan2
ip address 10.128.1.3 255.255.255.0
!
ip default-gateway 10.128.1.1
!
!
!
!
line con 0
password 7 0822455D0A16
login
!
line vty 0 4
password 7 0822455D0A16
login
transport input ssh
line vty 5 15
login
!
!
!
!
end
```

3. switch msk-donskaya-agsargsyan-sw-3

```
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname msk-donskaya-agsargsyan-3
!
enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
```

```
!  
!  
ip domain-name donskaya.rudn.edu  
!  
username admin secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0  
!  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
interface FastEthernet0/1  
    switchport access vlan 3  
    switchport mode access  
!  
interface FastEthernet0/2  
!  
interface FastEthernet0/3  
!  
interface FastEthernet0/4  
!  
interface FastEthernet0/5  
!  
interface FastEthernet0/6  
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
!
```

```
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
switchport mode trunk
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
```



```
interface Vlan2
ip address 10.128.1.4 255.255.255.0
!
ip default-gateway 10.128.1.1
!
!
!
!
line con 0
password 7 0822455D0A16
login
!
line vty 0 4
password 7 0822455D0A16
login
transport input ssh
line vty 5 15
login
!
!
!
!
end
```

4. msk-donskaya-agsargsyan-sw-4

```
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname msk-donskaya-agsargsyan-sw-4
!
enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
!
```

```
!  
ip domain-name donskaya.rudn.edu  
!  
username admin secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0  
!  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
interface FastEthernet0/1  
    switchport access vlan 101  
    switchport mode access  
!  
interface FastEthernet0/2  
    switchport access vlan 101  
    switchport mode access  
!  
interface FastEthernet0/3  
    switchport access vlan 101  
    switchport mode access  
!  
interface FastEthernet0/4  
    switchport access vlan 101  
    switchport mode access  
!  
interface FastEthernet0/5  
    switchport access vlan 101  
    switchport mode access  
!  
interface FastEthernet0/6  
    switchport access vlan 102  
    switchport mode access  
!  
interface FastEthernet0/7
```

```
switchport access vlan 102
switchport mode access
!
interface FastEthernet0/8
switchport access vlan 102
switchport mode access
!
interface FastEthernet0/9
switchport access vlan 102
switchport mode access
!
interface FastEthernet0/10
switchport access vlan 102
switchport mode access
!
interface FastEthernet0/11
switchport access vlan 103
switchport mode access
!
interface FastEthernet0/12
switchport access vlan 103
switchport mode access
!
interface FastEthernet0/13
switchport access vlan 103
switchport mode access
!
interface FastEthernet0/14
switchport access vlan 103
switchport mode access
!
interface FastEthernet0/15
switchport access vlan 103
switchport mode access
!
```

```
interface FastEthernet0/16
  switchport access vlan 104
  switchport mode access
!
interface FastEthernet0/17
  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
  switchport mode access
```

```
!  
interface GigabitEthernet0/1  
    switchport mode trunk  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1  
    no ip address  
    shutdown  
!  
interface Vlan2  
    ip address 10.128.1.5 255.255.255.0  
!  
ip default-gateway 10.128.1.1  
!  
!  
!  
!  
line con 0  
!  
line vty 0 4  
    password 7 0822455D0A16  
    login  
    transport input ssh  
line vty 5 15  
    login  
!  
!  
!  
!  
end
```

5. msk-pavlovskaya-agsargsyan-sw-1

```
!  
version 12.1
```

```
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname msk-pavlovskaya-agsargsyan-sw-1
!
enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
!
!
ip domain-name pavlovskaya.rudn.edu
!
username admin secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/2
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/3
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/4
  switchport access vlan 101
  switchport mode access
!
```

```
interface FastEthernet0/5
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/6
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/7
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/8
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/9
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/10
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/11
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/12
  switchport access vlan 101
  switchport mode access
!
interface FastEthernet0/13
  switchport access vlan 101
  switchport mode access
```

```
!  
interface FastEthernet0/14  
  switchport access vlan 101  
  switchport mode access  
!  
interface FastEthernet0/15  
  switchport access vlan 101  
  switchport mode access  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
  switchport access vlan 104  
  switchport mode access  
!  
interface FastEthernet0/21  
!  
interface FastEthernet0/22  
!  
interface FastEthernet0/23  
!  
interface FastEthernet0/24  
  switchport mode trunk  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1
```



```
no ip address
shutdown
!
interface Vlan2
ip address 10.128.1.6 255.255.255.0
!
ip default-gateway 10.128.1.1
!
!
!
!
line con 0
password 7 0822455D0A16
login
!
line vty 0 4
password 7 0822455D0A16
login
transport input ssh
line vty 5 15
login
!
!
!
!
end
```

ОТВЕТЫ НА КОНТРОЛЬНЫЕ ВОПРОСЫ

1. Какая команда используется для просмотра списка VLAN на сетевом устройстве?

show vlan или sh vlan

2. Охарактеризуйте VLAN Trunking Protocol (VTP). Приведите перечень команд для настройки и просмотра информации о VLAN. Протокол локальной сети для обмена информацией о VLAN на выбранном транковом порту.

switchport mode trunk/access

switchport access vlan <vlan number>

vtp mode server/client

vtp domain <domain name>

vtp password <password>

vlan <vlan number>

name <name>

3. Охарактеризуйте Internet Control Message Protocol (ICMP).

Используется для передачи сообщений об ошибках и других исключительных ситуациях, возникших при передаче данных. Также на ICMP возлагаются некоторые сервисные функции.

4. Охарактеризуйте Address Resolution Protocol (ARP).

Используется для определения MAC-адреса по IP-адресу другого компьютера.

5. Что такое MAC-адрес? Какова его структура?

MAC-адрес, физический адрес — Уникальный идентификатор, присваиваемый каждой единице активного оборудования или некоторым их интерфейсам в компьютерных сетях Ethernet.

ВЫВОД

Я Получил основные навыки по настройке VLAN на коммутаторах сети.