Лабораторная работа №5

Администрирование локальных сетей

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Цель работы

Цель работы

Получить основные навыки по настройке VLAN на коммутаторах сети.

Выполнение лабораторной работы

```
User Access Verification

Password:

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

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

msk-donskaya-ioithenko-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-ioithenko-sw-1(config-if)#interface f0/1
msk-donskaya-ioithenko-sw-1(config-if)#switchport mode trunk
msk-donskaya-ioithenko-sw-1(config-if)#
```

Рис. 1: Trunk-порты

```
User Access Verification

Password:

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

msk-donskaya-ioithenko-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-ioithenko-sw-2(config-if)#
```

Рис. 2: Trunk-порты

```
User Access Verification

Password:

msk-donskaya-ioithenko-sw-3>enable
Password:
msk-donskaya-ioithenko-sw-3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-ioithenko-sw-3(config)#interface g0/1
msk-donskaya-ioithenko-sw-3(config-if)#switchport mode trunk
msk-donskaya-ioithenko-sw-3(config-if)#
```

Рис. 3: Trunk-порты

```
User Access Verification

Password:

msk-donskaya-ioithenko-sw-4>enable
Password:
msk-donskaya-ioithenko-sw-4#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-ioithenko-sw-4(config)#interface g0/1
msk-donskaya-ioithenko-sw-4(config-if)#switchport mode trunk
msk-donskaya-ioithenko-sw-4(config-if)#
```

Рис. 4: Trunk-порты

```
User Access Verification

Password:

msk-pavlovskaya-ioithenko-sw-1>enable
Password:
msk-pavlovskaya-ioithenko-sw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-pavlovskaya-ioithenko-sw-1(config)#interface f0/24
msk-pavlovskaya-ioithenko-sw-1(config-if)#switchport mode trunk
msk-pavlovskaya-ioithenko-sw-1(config-if)#
```

Рис. 5: Trunk-порты

```
msk-donskaya-ioithenko-sw-1(config-if)#vtp mode server
Device mode already VTP SERVER.
msk-donskaya-ioithenko-sw-1(config)#vtp domain donskaya
Changing VTP domain name from NULL to donskaya
msk-donskaya-ioithenko-sw-1(config)#vtp password cisco
Setting device VLAN database password to cisco
msk-donskaya-ioithenko-sw-1(config)#vlan 2
msk-donskaya-ioithenko-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-ioithenko-sw-1(config-vlan)#name management
msk-donskaya-ioithenko-sw-1(config-vlan)#vlan 3
msk-donskaya-ioithenko-sw-1(config-vlan)#name servers
msk-donskaya-ioithenko-sw-1(config-vlan)#vlan 101
msk-donskaya-ioithenko-sw-1(config-vlan)#name dk
msk-donskaya-ioithenko-sw-1(config-vlan)#vlan 102
msk-donskaya-ioithenko-sw-1(config-vlan)#name departments
msk-donskaya-ioithenko-sw-1(config-vlan)#vlan 103
msk-donskaya-ioithenko-sw-1(config-vlan)#name adm
msk-donskaya-ioithenko-sw-1(config-vlan)#vlan 104
msk-donskaya-ioithenko-sw-1(config-vlan)#name other
msk-donskaya-ioithenko-sw-1(config-vlan)#
```

Рис. 6: VTP-сервер

```
msk-donskaya-ioithenko-sw-4>enable
Password:
msk-donskaya-ioithenko-sw-4#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-ioithenko-sw-4(config)#interface g0/1
msk-donskaya-ioithenko-sw-4(config-if)#switchport mode trunk
msk-donskaya-ioithenko-sw-4(config-if)#vtp mode client
Setting device to VTP CLIENT mode.
msk-donskaya-ioithenko-sw-4(config)#interface range f0/1 - 5
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport mode access
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport access vlan 101
msk-donskaya-ioithenko-sw-4(config-if-range)#interface range f0/6 - 10
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport mode access
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport access vlan 102
msk-donskaya-ioithenko-sw-4(config-if-range)#interface range f0/11 - 15
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport mode access
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport access vlan 103
msk-donskaya-ioithenko-sw-4(config-if-range)#interface range f0/16 - 24
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport mode access
msk-donskaya-ioithenko-sw-4(config-if-range)#switchport access vlan 104
msk-donskaya-ioithenko-sw-4(config-if-range)#
```

Рис. 7: VTP-клиент

```
msk-donskaya-ioithenko-sw-2>enable
Password:
msk-donskaya-ioithenko-sw-2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-ioithenko-sw-2(config)#vtp mode client
Setting device to VTP CLIENT mode.
msk-donskaya-ioithenko-sw-2(config)#interface range f0/1 - 2
msk-donskaya-ioithenko-sw-2(config-if-range)#switchport mode access
msk-donskaya-ioithenko-sw-2(config-if-range)#switchport access vlan 3
msk-donskaya-ioithenko-sw-2(config-if-range)#
```

Рис. 8: VTP-клиент

```
User Access Verification

Password:

msk-donskaya-ioithenko-sw-3>enable
Password:
msk-donskaya-ioithenko-sw-3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-ioithenko-sw-3(config)#vtp mode client
Setting device to VTP CLIENT mode.
msk-donskaya-ioithenko-sw-3(config)#interface ranfe f0/1 - 2
                                              ^
% Invalid input detected at '^' marker.

msk-donskaya-ioithenko-sw-3(config)#interface range f0/1 - 2
msk-donskaya-ioithenko-sw-3(config-if-range)#switchport mode access
msk-donskaya-ioithenko-sw-3(config-if-range)#switchport access vlan 3
msk-donskaya-ioithenko-sw-3(config-if-range)#
```

Рис. 9: VTP-клиент

```
msk-pavlovskaya-ioithenko-sw-1(config-if-range)#vtp mode client
Setting device to VTP CLIENT mode.
msk-pavlovskaya-ioithenko-sw-1(config)#interface range f0/1 -15
msk-pavlovskaya-ioithenko-sw-1(config-if-range)#switchport mode access
msk-pavlovskaya-ioithenko-sw-1(config-if-range)#switchport access vlan 101
msk-pavlovskaya-ioithenko-sw-1(config-if-range)#interface range f0/20
msk-pavlovskaya-ioithenko-sw-1(config-if-range)#switchport mode access
msk-pavlovskaya-ioithenko-sw-1(config-if-range)#switchport access vlan 104
msk-pavlovskaya-ioithenko-sw-1(config-if-range)#
```

Рис. 10: VTP-клиент

```
msk-donskaya-ioithenko-sw-1>enable
Password:
msk-donskaya-ioithenko-sw-1#show vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    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, Fa0/24
2    management                        active
3    servers                           active
101  dk                                active
102  departments                       active
103  adm                               active
104  other                             active
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
```

Рис. 11: VLAN

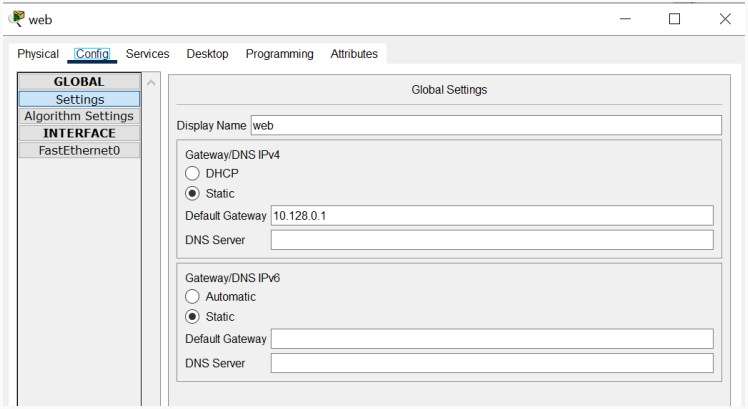
web
Physical
Config
Services
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Global Settings
Display Name
web
Gateway/DNS IPv4
DHCP
Static
Default Gateway
10.128.0.1
DNS Server
Gateway/DNS IPv6
Automatic
Static
Default Gateway
DNS Server

Рис. 12: Шлюз

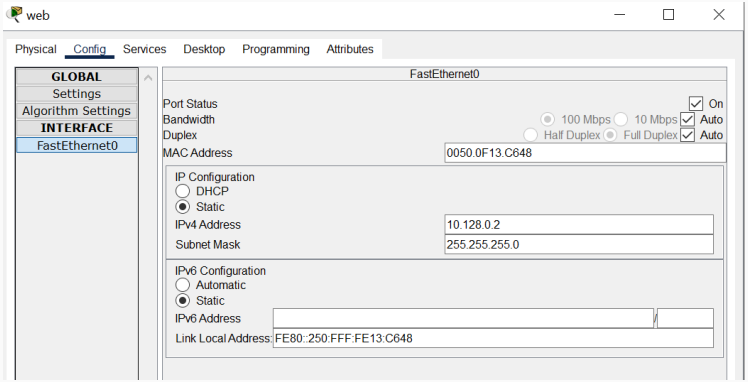

Рис. 13: IP-адрес

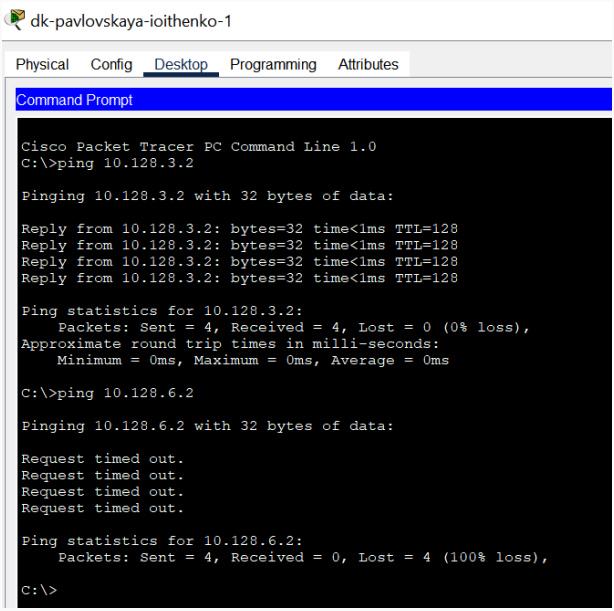

Рис. 14: Проверка доступности устройств

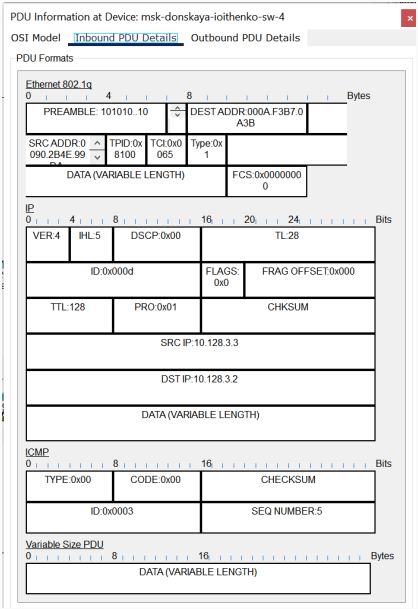
PDU Information at Device: msk-donskaya-ioithenko-sw-4
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
Ethernet 802.1q
0
4
8
Bytes
PREAMBLE: 101010..10
DEST ADDR:000A.F3B7.0A3B
SRC ADDR:090.2B4E.99
TPID:0x8100
TCI:0x0065
Type:0x1
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x000d
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:10.128.3.3
DST IP:10.128.3.2
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits
TYPE:0x00
CODE:0x00
CHECKSUM
ID:0x0003
SEQ NUMBER:5
Variable Size PDU
0
8
16
Bytes
DATA (VARIABLE LENGTH)

Рис. 15: ICMP

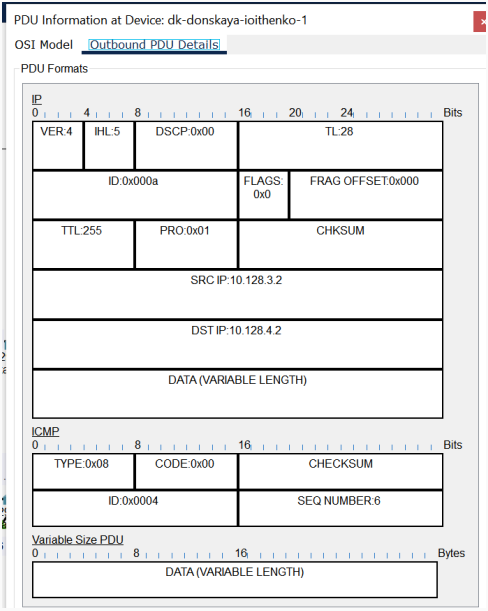
PDU Information at Device: dk-donskaya-ioithenko-1
OSI Model
Outbound PDU Details
PDU Formats
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x000a
FLAGS: 0x0
FRAG OFFSET:0x000
TTL:255
PRO:0x01
CHKSUM
SRC IP:10.128.3.2
DST IP:10.128.4.2
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits
TYPE:0x08
CODE:0x00
CHECKSUM
ID:0x0004
SEQ NUMBER:6
Variable Size PDU
0
8
16
Bytes
DATA (VARIABLE LENGTH)

Рис. 16: ICMP

Выводы

Выводы

В ходе выполнения лабораторной работы я получила основные навыки по настройке VLAN на коммутаторах сети.