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Модуль 4

Лабораторная работа №4

Тема: Настройка виртуальной локальной сети (VLAN)

Задания:

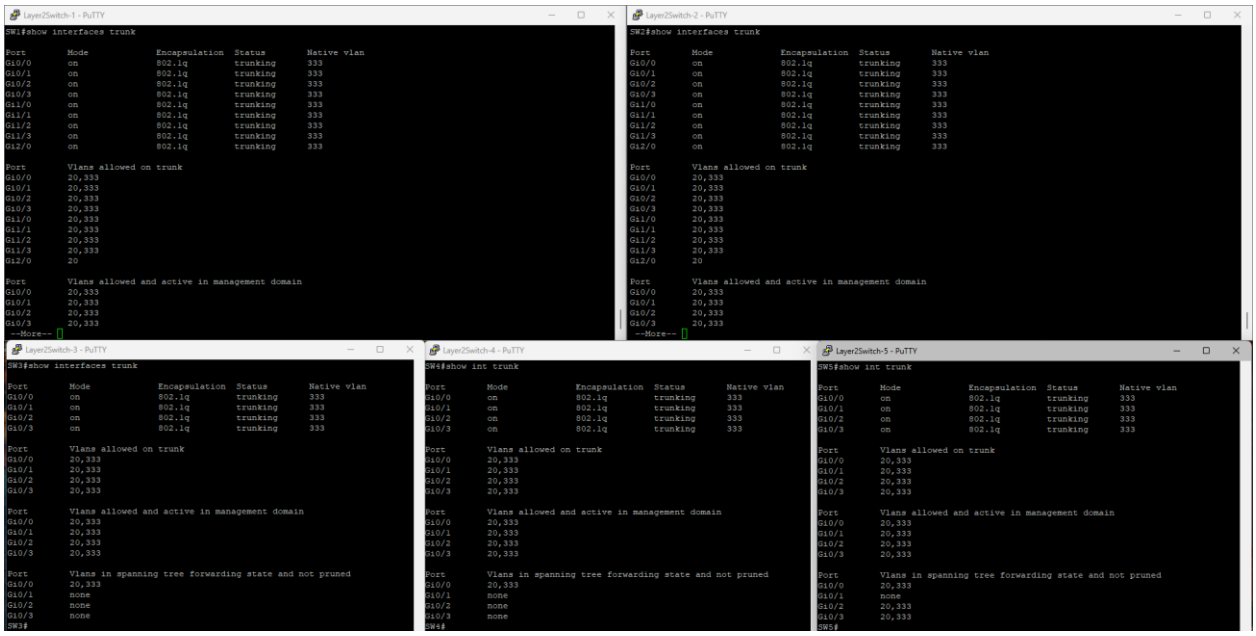
1) Для заданной на схеме schema-lab4 сети, состоящей из управляемых коммутаторов и персональных компьютеров настроить на коммутаторах логическую топологию используя протокол IEEE 802.1Q, для передачи пакетов VLAN333 между коммутаторами использовать Native VLAN

2) Проверить доступность персональных компьютеров, находящихся в одинаковых VLAN и недоступность находящихся в различных, результаты запротоколировать

3) Сохранить файлы конфигураций устройств в виде набора файлов с именами, соответствующими именам устройств

4*) Опциональное задание: Добавить в схему маршрутизатор, подключенный к коммутаторам Layer2Switch1 и Layer2Switch2, настроить через него маршрутизацию между VLAN

1) Настроил на всех коммутаторах вланы. Транк интерфейсы:



Транк режим стоит на всех портах между сетевыми устройствами на vlan 20 и 333.

Access на тех, которые ведут к оконечным устройствам:

```
SW4#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------
------
1    default                          active
20   VLAN20                           active    Gi1/0
100  VLAN100                          active
200  VLAN0200                         active
300  VLAN0300                         active
333  VLAN333                          active    Gi1/1
1002 fddi-default                     act/unsup
1003 trcrf-default                    act/unsup
1004 fddinet-default                  act/unsup
1005 trbrf-default                    act/unsup
```

```
SW3#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------
-
1    default                          active
20   VLAN20                           active    Gi1/0
100  VLAN100                          active
200  VLAN0200                         active
300  VLAN0300                         active
333  VLAN333                          active    Gi1/1
1002 fddi-default                     act/unsup
1003 trcrf-default                    act/unsup
1004 fddinet-default                  act/unsup
1005 trbrf-default                    act/unsup
```

```
SW5#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------
1    default                          active
20   VLAN20                           active    Gi1/0
100  VLAN100                          active
200  VLAN0200                         active
300  VLAN0300                         active
333  VLAN333                          active    Gi1/1
1002 fddi-default                     act/unsup
1003 trcrf-default                    act/unsup
1004 fddinet-default                  act/unsup
1005 trbrf-default                    act/unsup
```

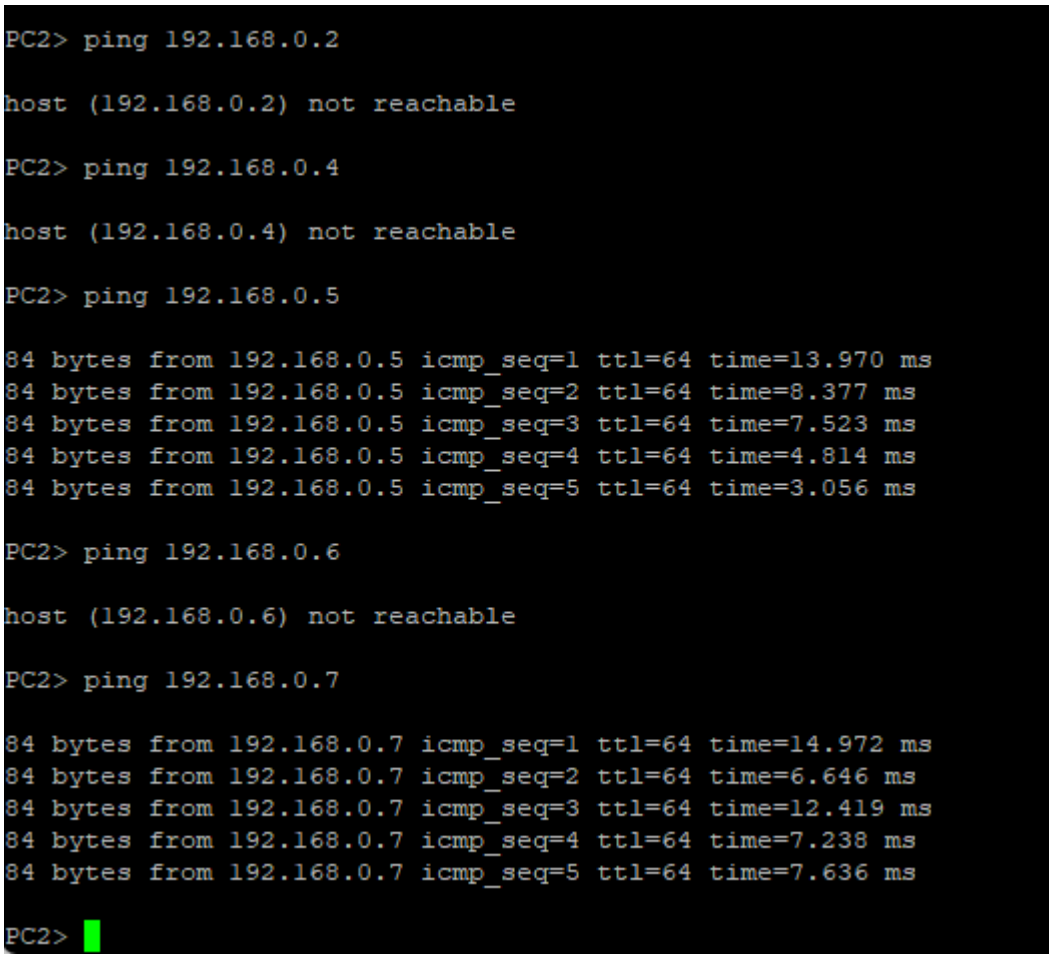
Native Vlan настроен у коммутаторов на портах между другими коммутаторами на vlan 333.

2) Доступность:

Первый пк:

```
PC1> ip 192.168.0.2/24
Checking for duplicate address...
PC1 : 192.168.0.2 255.255.255.0

PC1> ping 192.168.0.3

host (192.168.0.3) not reachable

PC1> ping 192.168.0.4

84 bytes from 192.168.0.4 icmp_seq=1 ttl=64 time=13.944 ms
84 bytes from 192.168.0.4 icmp_seq=2 ttl=64 time=7.932 ms
84 bytes from 192.168.0.4 icmp_seq=3 ttl=64 time=1.904 ms
84 bytes from 192.168.0.4 icmp_seq=4 ttl=64 time=12.879 ms
84 bytes from 192.168.0.4 icmp_seq=5 ttl=64 time=6.992 ms

PC1> ping 192.168.0.5

host (192.168.0.5) not reachable

PC1> ping 192.168.0.6

84 bytes from 192.168.0.6 icmp_seq=1 ttl=64 time=13.699 ms
84 bytes from 192.168.0.6 icmp_seq=2 ttl=64 time=7.690 ms
84 bytes from 192.168.0.6 icmp_seq=3 ttl=64 time=14.956 ms
84 bytes from 192.168.0.6 icmp_seq=4 ttl=64 time=15.089 ms
84 bytes from 192.168.0.6 icmp_seq=5 ttl=64 time=14.516 ms

PC1> ping 192.168.0.7

host (192.168.0.7) not reachable

PC1>
```

Второй пк:


PC2> ping 192.168.0.2
host (192.168.0.2) not reachable
PC2> ping 192.168.0.4
host (192.168.0.4) not reachable
PC2> ping 192.168.0.5
84 bytes from 192.168.0.5 icmp_seq=1 ttl=64 time=13.970 ms
84 bytes from 192.168.0.5 icmp_seq=2 ttl=64 time=8.377 ms
84 bytes from 192.168.0.5 icmp_seq=3 ttl=64 time=7.523 ms
84 bytes from 192.168.0.5 icmp_seq=4 ttl=64 time=4.814 ms
84 bytes from 192.168.0.5 icmp_seq=5 ttl=64 time=3.056 ms
PC2> ping 192.168.0.6
host (192.168.0.6) not reachable
PC2> ping 192.168.0.7
84 bytes from 192.168.0.7 icmp_seq=1 ttl=64 time=14.972 ms
84 bytes from 192.168.0.7 icmp_seq=2 ttl=64 time=6.646 ms
84 bytes from 192.168.0.7 icmp_seq=3 ttl=64 time=12.419 ms
84 bytes from 192.168.0.7 icmp_seq=4 ttl=64 time=7.238 ms
84 bytes from 192.168.0.7 icmp_seq=5 ttl=64 time=7.636 ms
PC2>

Третий пк:

```
PC3> ip 192.168.0.4/24
Checking for duplicate address...
PC3 : 192.168.0.4 255.255.255.0

PC3> ping 192.168.0.2

84 bytes from 192.168.0.2 icmp_seq=1 ttl=64 time=5.914 ms
84 bytes from 192.168.0.2 icmp_seq=2 ttl=64 time=3.532 ms
84 bytes from 192.168.0.2 icmp_seq=3 ttl=64 time=6.732 ms
84 bytes from 192.168.0.2 icmp_seq=4 ttl=64 time=7.389 ms
84 bytes from 192.168.0.2 icmp_seq=5 ttl=64 time=7.642 ms

PC3> ping 192.168.0.3

host (192.168.0.3) not reachable

PC3> ping 192.168.0.5

host (192.168.0.5) not reachable

PC3> ping 192.168.0.6

84 bytes from 192.168.0.6 icmp_seq=1 ttl=64 time=11.604 ms
84 bytes from 192.168.0.6 icmp_seq=2 ttl=64 time=7.758 ms
84 bytes from 192.168.0.6 icmp_seq=3 ttl=64 time=6.281 ms
84 bytes from 192.168.0.6 icmp_seq=4 ttl=64 time=5.601 ms
84 bytes from 192.168.0.6 icmp_seq=5 ttl=64 time=2.004 ms

PC3> ping 192.168.0.7

host (192.168.0.7) not reachable

PC3>
```

Четвертый пк:

```
PC4> ip 192.168.0.5/24
Checking for duplicate address...
PC4 : 192.168.0.5 255.255.255.0

PC4>
PC4> ping 192.168.0.2

host (192.168.0.2) not reachable

PC4> ping 192.168.0.3

84 bytes from 192.168.0.3 icmp_seq=1 ttl=64 time=4.998 ms
84 bytes from 192.168.0.3 icmp_seq=2 ttl=64 time=10.599 ms
84 bytes from 192.168.0.3 icmp_seq=3 ttl=64 time=6.367 ms
84 bytes from 192.168.0.3 icmp_seq=4 ttl=64 time=11.864 ms
84 bytes from 192.168.0.3 icmp_seq=5 ttl=64 time=2.933 ms

PC4> ping 192.168.0.4

host (192.168.0.4) not reachable

PC4> ping 192.168.0.6

host (192.168.0.6) not reachable

PC4> ping 192.168.0.7

84 bytes from 192.168.0.7 icmp_seq=1 ttl=64 time=10.868 ms
84 bytes from 192.168.0.7 icmp_seq=2 ttl=64 time=6.719 ms
84 bytes from 192.168.0.7 icmp_seq=3 ttl=64 time=1.946 ms
84 bytes from 192.168.0.7 icmp_seq=4 ttl=64 time=4.917 ms
84 bytes from 192.168.0.7 icmp_seq=5 ttl=64 time=6.225 ms

PC4>
```

Пятый пк:

```
PC5> ip 192.168.0.6/24
Checking for duplicate address...
PC5 : 192.168.0.6 255.255.255.0

PC5> ping 192.168.0.2

84 bytes from 192.168.0.2 icmp_seq=1 ttl=64 time=11.794 ms
84 bytes from 192.168.0.2 icmp_seq=2 ttl=64 time=7.957 ms
84 bytes from 192.168.0.2 icmp_seq=3 ttl=64 time=8.470 ms
84 bytes from 192.168.0.2 icmp_seq=4 ttl=64 time=6.596 ms
84 bytes from 192.168.0.2 icmp_seq=5 ttl=64 time=5.696 ms

PC5> ping 192.168.0.3

host (192.168.0.3) not reachable

PC5> ping 192.168.0.4

84 bytes from 192.168.0.4 icmp_seq=1 ttl=64 time=10.348 ms
84 bytes from 192.168.0.4 icmp_seq=2 ttl=64 time=1.952 ms
84 bytes from 192.168.0.4 icmp_seq=3 ttl=64 time=8.046 ms
84 bytes from 192.168.0.4 icmp_seq=4 ttl=64 time=12.445 ms
84 bytes from 192.168.0.4 icmp_seq=5 ttl=64 time=7.712 ms

PC5> ping 192.168.0.5

host (192.168.0.5) not reachable

PC5> ping 192.168.0.7

host (192.168.0.7) not reachable

PC5>
```

Шестой пк:

```
PC6> ip 192.168.0.7/24
Checking for duplicate address...
PC6 : 192.168.0.7 255.255.255.0

PC6> ping 192.168.0.2

host (192.168.0.2) not reachable

PC6> ping 192.168.0.3

84 bytes from 192.168.0.3 icmp_seq=1 ttl=64 time=5.049 ms
84 bytes from 192.168.0.3 icmp_seq=2 ttl=64 time=6.669 ms
84 bytes from 192.168.0.3 icmp_seq=3 ttl=64 time=8.013 ms
84 bytes from 192.168.0.3 icmp_seq=4 ttl=64 time=3.335 ms
84 bytes from 192.168.0.3 icmp_seq=5 ttl=64 time=2.856 ms

PC6> ping 192.168.0.4

host (192.168.0.4) not reachable

PC6> ping 192.168.0.5

84 bytes from 192.168.0.5 icmp_seq=1 ttl=64 time=9.227 ms
84 bytes from 192.168.0.5 icmp_seq=2 ttl=64 time=9.931 ms
84 bytes from 192.168.0.5 icmp_seq=3 ttl=64 time=6.036 ms
84 bytes from 192.168.0.5 icmp_seq=4 ttl=64 time=4.000 ms
84 bytes from 192.168.0.5 icmp_seq=5 ttl=64 time=7.714 ms

PC6> ping 192.168.0.6

host (192.168.0.6) not reachable

PC6>
```

3) Файлы находятся в гитхабе.