

Зотов Дмитрий
Лабораторная 3

1) Настроить на коммутаторах логическую топологию используя протокол IEEE 802.1Q, для передачи пакетов VLAN333 между коммутаторами использовать Native VLAN

Layer2Switch-3

Для PC1

```
Switch#conf ter
Switch(config)#interface Gi1/0
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#end
```

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

Для PC2

```
Switch#conf ter
Switch(config)#interface Gi1/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 333
Switch(config-if)#end
```

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	

Для портов коммутаторов

```
Switch#conf ter
Switch(config)#int range g0/0-3
Switch(config-if-range)#shut
Switch(config-if-range)#switchport trunk encapsulation dot1q
Switch(config-if-range)#switchport trunk native vlan 333
Switch(config-if-range)#switchport trunk allowed vlan 20,333
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#no shut
Switch(config-if-range)#end
```

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

```
PC1> ip 192.168.1.1 192.168.1.11
Checking for duplicate address...
PC1 : 192.168.1.1 255.255.255.0 gateway 192.168.1.11

PC1> ping 192.168.1.2

host (192.168.1.2) not reachable

PC1> ping 192.168.1.3

84 bytes from 192.168.1.3 icmp_seq=1 ttl=64 time=13.197 ms
84 bytes from 192.168.1.3 icmp_seq=2 ttl=64 time=6.379 ms
84 bytes from 192.168.1.3 icmp_seq=3 ttl=64 time=27.680 ms
84 bytes from 192.168.1.3 icmp_seq=4 ttl=64 time=4.197 ms
84 bytes from 192.168.1.3 icmp_seq=5 ttl=64 time=4.232 ms

PC1> ping 192.168.1.4

host (192.168.1.4) not reachable

PC1> ping 192.168.1.5

84 bytes from 192.168.1.5 icmp_seq=1 ttl=64 time=9.387 ms
84 bytes from 192.168.1.5 icmp_seq=2 ttl=64 time=8.472 ms
84 bytes from 192.168.1.5 icmp_seq=3 ttl=64 time=14.819 ms
84 bytes from 192.168.1.5 icmp_seq=4 ttl=64 time=20.063 ms
84 bytes from 192.168.1.5 icmp_seq=5 ttl=64 time=12.237 ms

PC1> ping 192.168.1.6

host (192.168.1.6) not reachable

PC1> █
```

```
PC2> ip 192.168.1.2 192.168.1.12
Checking for duplicate address...
PC2 : 192.168.1.2 255.255.255.0 gateway 192.168.1.12

PC2> ping 192.168.1.1

host (192.168.1.1) not reachable

PC2> ping 192.168.1.3

host (192.168.1.3) not reachable

PC2> ping 192.168.1.4

84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=23.784 ms
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=5.840 ms
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=6.304 ms
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=8.324 ms
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=8.132 ms

PC2> ping 192.168.1.5

host (192.168.1.5) not reachable

PC2> ping 192.168.1.6

84 bytes from 192.168.1.6 icmp_seq=1 ttl=64 time=20.688 ms
84 bytes from 192.168.1.6 icmp_seq=2 ttl=64 time=4.865 ms
84 bytes from 192.168.1.6 icmp_seq=3 ttl=64 time=12.885 ms
84 bytes from 192.168.1.6 icmp_seq=4 ttl=64 time=12.015 ms
84 bytes from 192.168.1.6 icmp_seq=5 ttl=64 time=3.787 ms

PC2> █
```

```
PC3> ip 192.168.1.3 192.168.1.13
Checking for duplicate address...
PC3 : 192.168.1.3 255.255.255.0 gateway 192.168.1.13

PC3> ping 192.168.1.1

84 bytes from 192.168.1.1 icmp_seq=1 ttl=64 time=14.563 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=64 time=17.195 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=64 time=9.401 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=64 time=5.906 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=64 time=28.744 ms

PC3> ping 192.168.1.2

host (192.168.1.2) not reachable

PC3> ping 192.168.1.4

host (192.168.1.4) not reachable

PC3> ping 192.168.1.5

84 bytes from 192.168.1.5 icmp_seq=1 ttl=64 time=11.047 ms
84 bytes from 192.168.1.5 icmp_seq=2 ttl=64 time=21.665 ms
84 bytes from 192.168.1.5 icmp_seq=3 ttl=64 time=4.642 ms
84 bytes from 192.168.1.5 icmp_seq=4 ttl=64 time=13.208 ms
84 bytes from 192.168.1.5 icmp_seq=5 ttl=64 time=9.424 ms

PC3> ping 192.168.1.6

host (192.168.1.6) not reachable

PC3> █
```

```
PC4> ip 192.168.1.4 192.168.1.14
Checking for duplicate address...
PC4 : 192.168.1.4 255.255.255.0 gateway 192.168.1.14

PC4> ping 192.168.1.1

host (192.168.1.1) not reachable

PC4> ping 192.168.1.2

84 bytes from 192.168.1.2 icmp_seq=1 ttl=64 time=8.372 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=64 time=3.120 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=64 time=26.550 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=64 time=8.436 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=64 time=15.645 ms

PC4> ping 192.168.1.3

host (192.168.1.3) not reachable

PC4> ping 192.168.1.5

host (192.168.1.5) not reachable

PC4> ping 192.168.1.6

84 bytes from 192.168.1.6 icmp_seq=1 ttl=64 time=28.819 ms
84 bytes from 192.168.1.6 icmp_seq=2 ttl=64 time=15.818 ms
84 bytes from 192.168.1.6 icmp_seq=3 ttl=64 time=12.541 ms
84 bytes from 192.168.1.6 icmp_seq=4 ttl=64 time=13.837 ms
84 bytes from 192.168.1.6 icmp_seq=5 ttl=64 time=4.283 ms

PC4> █
```

```
PC5> ip 192.168.1.5 192.168.1.15
Checking for duplicate address...
PC5 : 192.168.1.5 255.255.255.0 gateway 192.168.1.15

PC5> ping 192.168.1.1

84 bytes from 192.168.1.1 icmp_seq=1 ttl=64 time=3.555 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=64 time=4.093 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=64 time=23.080 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=64 time=17.660 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=64 time=8.021 ms

PC5> ping 192.168.1.2

host (192.168.1.2) not reachable

PC5> ping 192.168.1.3

84 bytes from 192.168.1.3 icmp_seq=1 ttl=64 time=7.762 ms
84 bytes from 192.168.1.3 icmp_seq=2 ttl=64 time=11.032 ms
84 bytes from 192.168.1.3 icmp_seq=3 ttl=64 time=17.020 ms
84 bytes from 192.168.1.3 icmp_seq=4 ttl=64 time=11.563 ms
84 bytes from 192.168.1.3 icmp_seq=5 ttl=64 time=9.185 ms

PC5> ping 192.168.1.4

host (192.168.1.4) not reachable

PC5> ping 192.168.1.6

host (192.168.1.6) not reachable

PC5> █
```

```
PC6> ip 192.168.1.6 192.168.1.16
Checking for duplicate address...
PC6 : 192.168.1.6 255.255.255.0 gateway 192.168.1.16

PC6> ping 192.168.1.1
host (192.168.1.1) not reachable

PC6> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=64 time=18.005 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=64 time=8.748 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=64 time=8.727 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=64 time=12.913 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=64 time=9.486 ms

PC6> ping 192.168.1.3
host (192.168.1.3) not reachable

PC6> ping 192.168.1.4
84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=24.736 ms
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=18.163 ms
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=14.812 ms
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=21.343 ms
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=8.318 ms

PC6> ping 192.168.1.5
host (192.168.1.5) not reachable

PC6> 
```

3) Перехватить в Wireshark пакеты с тегами и без тегов, результаты задокументировать

VLAN20 имеет тег ID: 20

[illegible]

VLAN333 не имеет тега, потому что он в режиме native

125	103.445239	Private_66:68:01	Broadcast	ARP	64 who has 192.168.1.4? Tell 192.168.1.2	
> Frame 125: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface -, id 0						0000
> Ethernet II, Src: Private_66:68:01 (00:50:79:66:68:01), Dst: Broadcast (ff:ff:ff:ff:ff:ff)						0010
> Address Resolution Protocol (request)						0020
						0030
						0040
						0050
						0060
						0070
						0080
						0090
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