

Настройка **access** портов:

SW-3, 4, 5:

```
Switch(config)#int gi1/0
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#int gi1/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 333
```

Настройка **trunk** портов:

SW-1, 2:

```
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int range gi0/0, gi0/2, gi1/0, gi1/2
Switch(config-if-range)#switchport trunk encapsulation dot1q
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#switchport trunk native 333
^
% Invalid input detected at '^' marker.

Switch(config-if-range)#switchport trunk native vlan 333
Switch(config-if-range)#exit
Switch(config)#exit
Switch#
*Dec 12 08:06:06.830: %SYS-5-CONFIG_I: Configured from console by console
Switch#show interfaces trunk
```

Port	Mode	Encapsulation	Status	Native vlan
Gi0/0	on	802.1q	trunking	333
Gi0/1	desirable	n-isl	trunking	1
Gi0/2	on	802.1q	trunking	333
Gi0/3	desirable	n-isl	trunking	1
Gi1/0	on	802.1q	trunking	333
Gi1/1	desirable	n-isl	trunking	1
Gi1/2	on	802.1q	trunking	333
Gi1/3	desirable	n-isl	trunking	1

SW-3, 4, 5:

```
Switch(config)#int range gi0/0, gi0/2
Switch(config-if-range)#switchport trunk encapsulation dot1q
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#switchport trunk native vlan 333
```

```
Switch#show interfaces trunk
```

Port	Mode	Encapsulation	Status	Native vlan
Gi0/0	on	802.1q	trunking	333
Gi0/1	desirable	n-isl	trunking	1
Gi0/2	on	802.1q	trunking	333
Gi0/3	desirable	n-isl	trunking	1

Проверка доступности других PC:

```
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 192.168.1.5
host (192.168.1.5) not reachable

PC2> ping 192.168.1.2

192.168.1.2 icmp_seq=1 ttl=64 time=0.001 ms
192.168.1.2 icmp_seq=2 ttl=64 time=0.001 ms
192.168.1.2 icmp_seq=3 ttl=64 time=0.001 ms
192.168.1.2 icmp_seq=4 ttl=64 time=0.001 ms
192.168.1.2 icmp_seq=5 ttl=64 time=0.001 ms

PC2> ping 192.168.1.4

84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=13.245 ms
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=1.643 ms
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=4.774 ms
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=7.153 ms
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=4.575 ms

PC2> ping 192.168.1.6

84 bytes from 192.168.1.6 icmp_seq=1 ttl=64 time=16.155 ms
84 bytes from 192.168.1.6 icmp_seq=2 ttl=64 time=7.132 ms
84 bytes from 192.168.1.6 icmp_seq=3 ttl=64 time=7.290 ms
84 bytes from 192.168.1.6 icmp_seq=4 ttl=64 time=1.691 ms
84 bytes from 192.168.1.6 icmp_seq=5 ttl=64 time=7.251 ms
```

PC2(192.168.1.2) находится в **VLAN333**, поэтому ему доступны **PC4(192.168.1.4)**, **PC6(192.168.1.6)**. А **PC1(192.168.1.1)**, **PC3(192.168.1.3)**, **PC5(192.168.1.5)** находятся в **VLAN20**, поэтому к ним нет доступа.

Для VLAN333 нет тэгов в заголовке:

```
40 6.602795 192.168.1.2 192.168.1.6 ICMP 98 Echo (ping) request id=0x2020, seq=1/256, ttl=64 (reply in 41)
> Frame 40: 98 bytes on wire (784 bits), 98 bytes captured (784 bits) on interface 0
> Ethernet II, Src: Private_66:68:01 (00:50:79:66:68:01), Dst: Private_66:68:05 (00:50:79:66:68:05)
> Destination: Private_66:68:05 (00:50:79:66:68:05)
> Source: Private_66:68:01 (00:50:79:66:68:01)
> Type: IPv4 (0x0800)
> Internet Protocol Version 4, Src: 192.168.1.2, Dst: 192.168.1.6
> Internet Control Message Protocol
```

Для VLAN20 тэги в заголовке есть:

```
242 43.157468 192.168.1.1 192.168.1.3 ICMP 102 Echo (ping) request id=0x4420, seq=2/512, ttl=64 (reply in 243)
> Frame 242: 102 bytes on wire (816 bits), 102 bytes captured (816 bits) on interface 0
> Ethernet II, Src: Private_66:68:00 (00:50:79:66:68:00), Dst: Private_66:68:02 (00:50:79:66:68:02)
> Destination: Private_66:68:02 (00:50:79:66:68:02)
> Source: Private_66:68:00 (00:50:79:66:68:00)
> Type: 802.1Q Virtual LAN (0x8100)
> 802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 20
> Internet Protocol Version 4, Src: 192.168.1.1, Dst: 192.168.1.3
> Internet Control Message Protocol
```