CCNA – 200 – 301

(Lab # 2b)

VLAN Configuration (With Trunk)

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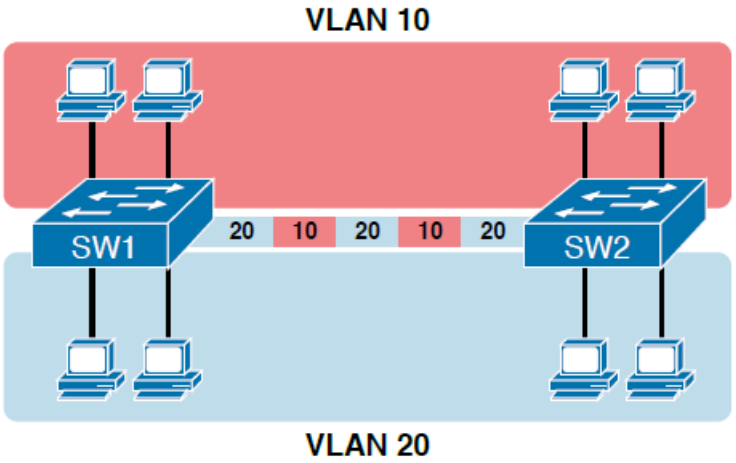
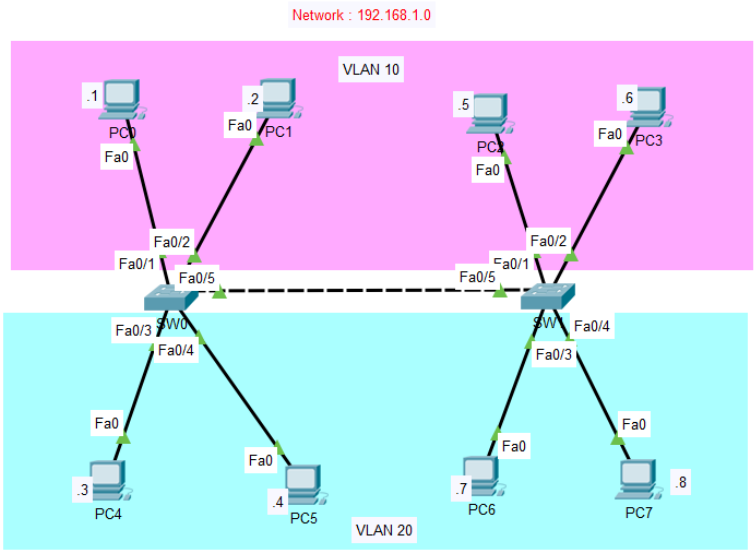
Objective:

- Creating two virtual LANs named **VLAN 10 and VLAN 20**.
- Network IP is 192.168.1.0 and all PCs are configured with IP address in range (192.168.1.1 to 192.168.1.8).
- Configuring switchports of both switches for VLAN 10 & VLAN 20 in access mode.
- For switch (SW0) and switch (SW1), the ports **f0/1** and **f0/2** are configured to be accessed in **VLAN 10**, while the ports **f0/3** and **f0/4** are configured to be accessed in **VLAN 20** and the port **f0/5** will be configured as trunk.
- Showing the results by pinging between the devices in both VLANs.



Logical Topology in Packet Tracer



Configuring Switch (SW0) for VLAN 10 & 20 & Trunking

```
SW0>enable
SW0#configure terminal
SW0(config)#interface range fastEthernet 0/1-2
SW0(config-if-range)#switchport mode access
SW0(config-if-range)#switchport access vlan 10
SW0(config-if-range)#exit
SW0(config)#interface range fastEthernet 0/3-4
SW0(config-if-range)#switchport mode access
SW0(config-if-range)#switchport access vlan 20
SW0(config-if-range)#exit
SW0(config)#interface fastEthernet 0/5
SW0(config-if)#switchport mode trunk
SW0(config-if)#exit
SW0(config)#do show vlan
```

```
SW0(config)#do show vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    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, Gig0/1
                                                 Gig0/2
10   VLAN0010                          active    Fa0/1, Fa0/2
20   VLAN0020                          active    Fa0/3, Fa0/4
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
```

Configuring Switch (SW1) for VLAN 10 & 20 & Trunking

```
SW1>enable
SW1#configure terminal
SW1(config)#interface range fastEthernet 0/1-2
SW1(config-if-range)#switchport mode access
SW1(config-if-range)#switchport access vlan 10
SW1(config-if-range)#exit
SW1(config)#interface range fastEthernet 0/3-4
SW1(config-if-range)#switchport mode access
SW1(config-if-range)#switchport access vlan 20
SW1(config-if-range)#exit
SW1(config)#interface fastEthernet 0/5
SW1(config-if)#switchport mode trunk
SW1(config-if)#exit
SW1(config)#do show vlan
```

```
SW1(config)#do show vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    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, Gig0/1
                                                 Gig0/2
10   VLAN0010                          active    Fa0/1, Fa0/2
20   VLAN0020                          active    Fa0/3, Fa0/4
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
```

Pinging from PC0 (VLAN10) to PC0 (VLAN10): Successful

```
C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=4ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 1ms
```

*Pinging from PC0 (**VLAN10**) to PC0 (**VLAN20**): Unsuccessful*

```
C:\>ping 192.168.1.7

Pinging 192.168.1.7 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.7:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

*Pinging from PC4 (**VLAN20**) to PC7 (**VLAN20**): Successful*

```
C:\>ping 192.168.1.8

Pinging 192.168.1.8 with 32 bytes of data:

Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time=1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

*Pinging from PC7 (**VLAN20**) to PC0 (**VLAN10**): Unsuccessful*

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```