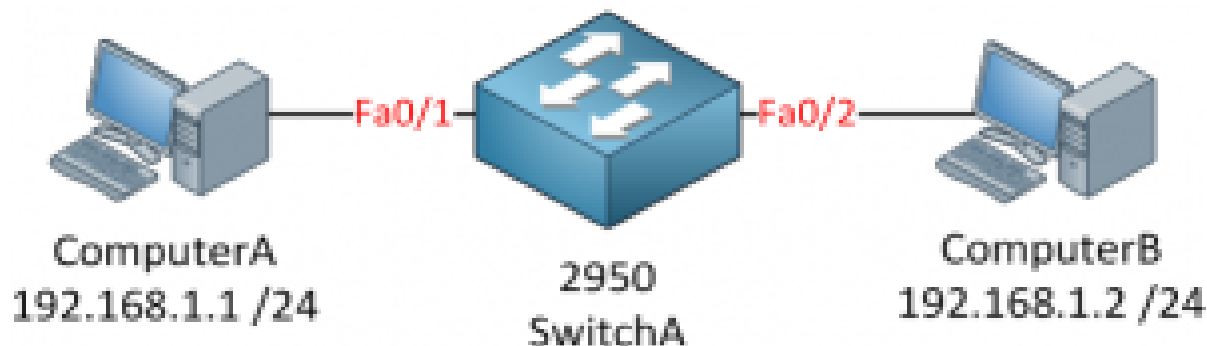# How to configure VLANs on Cisco Catalyst Switch | NetworkLessons.com

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In this article I will show you how to configure VLANs on Cisco Catalyst Switches and how to assign interfaces to certain VLANs. Let's start with a simple network topology:

Let's start with a simple example. ComputerA and ComputerB are connected to SwitchA.

First we will look at the default VLAN configuration on SwitchA:

```
SwitchA#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                Fa0/9, Fa0/10, Fa0/12
                                                Fa0/13, Fa0/14, Fa0/22
                                                Fa0/23, Fa0/24, Gi0/1, Gi0/2
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup
```

Interesting…VLAN 1 is the default LAN and you can see that all active interfaces are assigned to VLAN 1.

VLAN information is not saved in the running-config or startup-config but in a separate file called vlan.dat on your flash memory. If you want to delete the VLAN information you should delete this file by typing **delete flash:vlan.dat**. I configured an IP address on ComputerA and ComputerB so they are in the same subnet.

Let's see if ComputerA and ComputerB can reach each other:

```
C:\Documents and Settings\ComputerA>ping 192.168.1.2


Pinging 192.168.1.2 with 32 bytes of data:


Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128


Ping statistics for 192.168.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Even with the default switch configuration ComputerA is able to reach ComputerB. Let's see if I can create a new VLAN for ComputerA and ComputerB:

```
SwitchA(config)#vlan 50
SwitchA(config-vlan)#name Computers
SwitchA(config-vlan)#exit
```

This is how you create a new VLAN. If you want you can give it a name but this is optional. I'm calling my VLAN "Computers".

```
SwitchA#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- ------------------------------


1    default                          active    Fa0/1, 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,
                                                Fa0/23, Fa0/24, Gi0/1, Gi0/2
50   Computers                        active
```

VLAN 50 was created on SwitchA and you can see that it's active. However no ports are currently in VLAN 50. Let's see if we can change this…

```
SwitchA(config)interface fa0/1
SwitchA(config-if)#switchport mode access
SwitchA(config-if)#switchport access vlan 50


SwitchA(config)interface fa0/2
```

```
SwitchA(config-if)#switchport mode access
SwitchA(config-if)#switchport access vlan 50
```

First I will configure the switchport in **access mode** with the **switchport mode access command.** By using the **switchport access vlan** command we can move our interfaces to another VLAN.

```
SwitchA#show vlan

VLAN Name                             Status    Ports
---- ------------------------------   --------- ------------------------------

1    default                          active    Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                Fa0/9, Fa0/10,, Fa0/12
                                                Fa0/13, Fa0/14, Fa0/15,
                                                Fa0/23, Fa0/24, Gi0/2


50   Computers                        active    Fa0/1, Fa0/2
```

Excellent! Both computers are now in VLAN 50. Let's verify our configuration by checking if they can ping each other:

```
C:\Documents and Settings\ComputerA>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Our computers are able to reach each other within VLAN 50. Besides pinging each other we can also use another show command to verify our configuration:

```
SwitchA#show interfaces fa0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: static access
Operational Mode: static access
```

```
Administrative Trunking Encapsulation: negotiate
Operational Trunking Encapsulation: native
Negotiation of Trunking: Off
Access Mode VLAN: 50 (Computers)
Trunking Native Mode VLAN: 1 (default)
```

```
SwitchA#show interfaces fa0/2 switchport
Name: Fa0/2
Switchport: Enabled
Administrative Mode: static access
Operational Mode: static access
Administrative Trunking Encapsulation: negotiate
Operational Trunking Encapsulation: native
Negotiation of Trunking: Off
Access Mode VLAN: 50 (Computers)
Trunking Native Mode VLAN: 1 (default)
```

By using the "show interfaces switchport" command we can see that the **operational mode** is "static access" which means it's in access mode. We can also verify that the interface is assigned to VLAN 50.

- Configurations
- SwitchA

```
hostname SwitchA
!
vlan 50
 name Computers
!
interface FastEthernet0/1
 switchport mode access
 switchport access vlan 50
!
interface FastEthernet0/2
 switchport mode access
 switchport access vlan 50
!
end
```

This is all I wanted to show you, in the next article I'll show you how to configure trunks so that you can carry VLAN traffic from one switch to another. If you enjoyed this article please leave a comment!

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