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# Cisco Switch VLAN Configuration

## **Objective**

A Virtual Local Area Network (VLAN) allows you to logically segment a Local Area Network (LAN) into different broadcast domains. In scenarios where sensitive data may be broadcast on a network, VLANs can be created to enhance security by designating a broadcast to a specific VLAN. Only users that belong to a VLAN are able to access and manipulate the data on that VLAN.

You can configure the ports and specify whether the port should be in access or trunk mode, and assign specific ports to VLANs. This article provides instructions on how to configure an interface VLAN as an access or trunk port on your switch through the Command Line Interface (CLI).

## **Introduction**

VLAN is a network that is usually segmented by function or application. VLANs behave much like physical LANs, but you can group hosts even if they are not physically co-located. A switch port can belong to a VLAN. Unicast, broadcast, and multicast packets are forwarded and flooded out ports in the same VLAN.

VLANs can also be used to enhance performance by reducing the need to send broadcasts and multicasts to unnecessary destinations. It also eases network configuration by logically connecting devices without physically relocating those devices.

## **Enter the Cisco CLI**

For this you will need PuTTY, the Cisco usb console [driver](https://software.cisco.com/download/home/282774222/type/282855122/release/3.1), and a USB-mini to USB-A wire. If you do not have these, please obtain them and refer to the previous document on reading serial data from a Cisco Switch. To complete the goal set for this document and completing the architecture, this will be the only exit needed from the walkthrough guide as you will first need access to the Cisco CLI to begin. If you already have access or once you have access, you may proceed to the next step.

## **Enable Exec mode to begin**

*switch1>enable* to enable exec mode

*password:password*

## **Setting up Default VLAN #1**

*switch1#config terminal*

**Commands not needed as name will stay default**

*~~switch1(config) #vlan 1~~*

*~~switch1(config-vlan) # name~~*

*~~switch1(config-vlan) #exit~~*

*switch1(config) #interface range gigabitethernet1/0/1-6*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 1*

*switch1(config-if-range) #exit*

*switch1(config) # interface vlan 1*

*switch1(config-if) #ip address 192.168.100.1 255.255.255.0*

*switch1(config-if) #end*

*switch1#show vlan*

## **Setting up ExternalUplink VLAN #2**

A static ip address is unneeded following the next document, vlan 2 will being using dhcp. Feel free to skip this configuration set

*switch1#config terminal*

*switch1(config) #vlan 2*

*switch1(config-vlan) #name ExternalUplink*

*switch1(config-vlan) #exit*

*switch1(config) #interface range gigabitethernet1/0/7-12*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 2*

*switch1(config-if-range) #~~exit~~* ***end***

*~~switch1#(config) #interface vlan 2~~*

*~~switch1#(config-if) #ip address 10.0.2.1 255.255.255.0~~*

*~~switch1#(config-if) #end~~*

*switch1#show vlan*

## **Setting up Controller VLAN #11**

*switch1#config terminal*

*switch1(config) #vlan 11*

*switch1(config-vlan) #name Controller*

*switch1(config-vlan) #exit*

*switch1(config) #interface range gigabitethernet1/0/13-18*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 11*

*switch1(config-if-range) #exit*

*switch1#(config) #interface vlan 11*

*switch1#(config-if) #ip address 10.0.11.1 255.255.255.0*

*switch1#(config-if) #end*

*switch1#show vlan*

## **Setting up Network VLAN #21**

*switch1#config terminal*

*switch1(config) #vlan 21*

*switch1(config-vlan) #name Network*

*switch1(config-vlan) #exit*

*switch1(config) #interface range gigabitethernet1/0/19-24*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 21*

*switch1(config-if-range) #exit*

*switch1#(config) #interface vlan 21*

*switch1#(config-if) #ip address 10.0.21.1 255.255.255.0*

*switch1#(config-if) #end*

*switch1#show vlan*

## **Setting up Compute VLAN #31**

*switch1#config terminal*

*switch1(config) #vlan 31*

*switch1(config-vlan) #name Compute*

*switch1(config-vlan) #exit*

*switch1(config) #interface range gigabitethernet1/0/25-30*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 31*

*switch1(config-if-range) #exit*

*switch1#(config) #interface vlan 31*

*switch1#(config-if) #ip address 10.0.31.1 255.255.255.0*

*switch1#(config-if) #end*

*switch1#show vlan*

## **Setting up FutureUse1 VLAN #41**

*switch1#config terminal*

*switch1(config) #vlan 41*

*switch1(config-vlan) #name FutureUse1*

*switch1(config-vlan) #exit*

*switch1(config) #interface range gigabitethernet1/0/31-36*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 41*

*switch1(config-if-range) #exit*

*switch1#(config) #interface vlan 41*

*switch1#(config-if) #ip address 10.0.41.1 255.255.255.0*

*switch1#(config-if) #end*

*switch1#show vlan*

## **Setting up FutureUse2 VLAN #51**

*switch1#config terminal*

*switch1(config) #vlan 51*

*switch1(config-vlan) #name FutureUse2*

*switch1(config-vlan) #exit*

*switch1(config) #interface range gigabitethernet1/0/37-42*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 51*

*switch1(config-if-range) #exit*

*switch1#(config) #interface vlan 51*

*switch1#(config-if) #ip address 10.0.51.1 255.255.255.0*

*switch1#(config-if) #end*

*switch1#show vlan*

## **Setting up FutureUse3 VLAN #61**

*switch1#config terminal*

*switch1(config) #vlan 61*

*switch1(config-vlan) #name FutureUse2*

*switch1(config-vlan) #exit*

*switch1(config) #interface range gigabitethernet1/0/43-48*

*switch1(config-if-range) #switchport mode access*

*switch1(config-if-range) #switchport access vlan 51*

*switch1(config-if-range) #exit*

*switch1#(config) #interface vlan 51*

*switch1#(config-if) #ip address 10.0.51.1 255.255.255.0*

*switch1#(config-if) #end*

*switch1#show vlan*

## **Verify and Save**

Give everything one last look through and verify it looks good.

*switch1#show interfaces switchport*

*switch1#show vlan*

*switch1# copy running-config startup-config*

Click *ENTER* to select [startup-config]for destination filename

After [OK] *switch1#show vlan*

