# Chapter 2

## Configuring L2 VLANs on Cisco IOS

In this recipe we will outline how to configure L2 VLANs on Cisco IOS devices as per the network topology discussed in the intro in this chapter. We will configure the

### Getting Ready

We will be building on the pervious receipes discussed in this chapter to contunre to configrie the L2 VLANs on all the Lan devices within our sample topololgy.

### How to do it

* On ***the lan.yml*** file (under group\_vars folder) add the following

$ cat group\_vars/lan.yaml

vlans:

- name: Data

vlan\_id: 10

- name: Voice

vlan\_id: 20

- name: Web

vlan\_id: 100

* Update the ***pb\_build.yml*** playbook with the following task

---

- name: "PLAY 1: Configure All Lan Devices"

hosts: lan

tags: lan

connection: network\_cli

tasks:

🡨------- Snippet ------🡪

- name: "P1T4: Create L2 VLANs"

ios\_vlan:

aggregate: "{{ vlans }}"

register: ios\_vlans

tags: vlan

### How it is done

On the lan.yml file we define a vlans list data structure which holds all the VLANs we will need to configure on all our core and access switches. This variable will be available for all the core and access switches and ansible will use this variable in order to provision the required VLANs on the remote devices.

We use another declarative module called ***ios\_vlan*** which takes the vlan definition (its name and the vlan-id) and configure these VLANs on the remote managed device. Its pulls the existing configuration from the device and compare it with the list of devices that need to be present and only push the delta.

We use the loop construct to go through all the items in the vlans and configure all the respective vlans on all the devices.

After running this task on the devices below is the output from one of the access switches

## Configuring Access and Trunk Interfaces

In this recipe, we will show how to configure access and trunk interfaces on Cisco IOS-based devices and how to map interfaces to access vlan as well as how to allow specific vlans on the trunks. Following our sample toplolgy we will configure the interfaces on the devices as shown in thi table

|  |  |  |  |
| --- | --- | --- | --- |
| Device | Interface | Mode | Vlans |
| Core01 | Ethernet0/1 | Trunk | 10,20,100 |
| Core01 | Ethernet0/2 | Trunk | 10,20,100 |
| Core01 | Ethernet0/3 | Trunk | 10,20,100,200 |
| Access01 | Etherent0/1 | Trunk | 10,20,100 |
| Access01 | Ethenet0/2 | Trunk | 10,20,100 |
| Access01 | Ethernet0/3 | Access | 10 |

### Getting Ready

This recipe is a continuation for all the previous recipes in this chapter.

### How to do it

* On the lan.yml file under group\_vars folder add the following information

interfaces:

core01:

- name: Ethernet0/1

description: access01\_e0/1

mode: trunk

- name: Ethernet0/2

description: access02\_e0/1

mode: trunk

- name: Ethernet0/3

description: core01\_e0/3

mode: trunk

access01:

- name: Ethernet0/1

description: core01\_e0/1

mode: trunk

- name: Ethernet0/2

description: core02\_e0/1

mode: trunk

- name: Ethernet0/3

description: Data\_vlan

mode: access

vlan: 10

* Create a new ***core.yml*** file under group\_vars and include the following in it

core\_vlans:

- name: l3\_core\_vlan

vlan\_id: 200

interface: Ethernet0/3

* Update the pb\_build\_network.yml playbook with the following

---

- name: "PLAY 1: Configure All Lan Devices"

hosts: lan

tags: lan

tasks:

< ------- Snippet ----- >

- name: "P1T5: Configure L2 Trunks"

ios\_l2\_interface:

name: "{{ item.name }}"

mode: "{{ item.mode }}"

trunk\_allowed\_vlans: "{{ vlans | map(attribute='vlan\_id') | join(',') }}"

state: present

loop: "{{ interfaces[inventory\_hostname] | selectattr('mode','equalto','trunk') | list }}"

- name: "P1T6: Enable dot1q Trunks"

ios\_config:

lines:

- switchport trunk encapsulation dot1q

parents: interface {{item.name}}

loop: "{{ interfaces[inventory\_hostname] | selectattr('mode','equalto','trunk') | list }}"

tags: dot1q

- name: "P1T7: Configure Access Ports"

ios\_l2\_interface:

name: "{{ item.name }}"

mode: "{{ item.mode}}"

access\_vlan: "{{ item.vlan }}"

state: present

loop: "{{ interfaces[inventory\_hostname] | selectattr('mode','equalto','access') | list }}"

### How it is done

### There is More

## Configuring IP addresses on the Interfaces

### Getting Ready

### How to do it

### How it is done

### There is More

## Configuring OSPF

### Getting Ready

### How to do it

### How it is done

### There is More

## Configuring BGP

### Getting Ready

### How to do it

### How it is done

### There is More

## Collecting IOS facts

### Getting Ready

### How to do it

### How it is done

### There is More

## Running Operational Commands on IOS Devices

### Getting Ready

### How to do it

### How it is done

### There is More