Adding and Removing VLANs from a Trunk

As a network evolves, new VLANs must be created to accommodate the needs of the network. As a result, these VLANs often have to be propagated to multiple switches. Sometimes, VLANs are removed from networks or renumbered.

Learning Outcomes

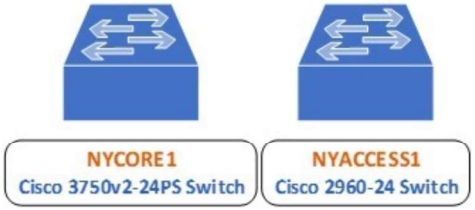
After completing this exercise, you will be able to:

- Add and remove VLANs to a trunk

Your Devices

You will be using the following devices in this lab. Please make sure these are powered on before proceeding.

- **NYCORE1** (Cisco 3750v2-24PS Switch)
- **NYACCESS1** (Cisco 2960-24 Switch)



Task 1 - Adding and Removing VLAN Trunks

You currently have a trunk between **NYCORE1** and **NYACCESS1**. You are required to add two more VLANs to the trunk, specifically, VLAN **30**, **Marketing** and VLAN **40**, **Research** to the trunk, but you must remove VLAN **20**, **Sales**.

Step 1

Connect to **NYCORE1** and create the two new VLANs that you will require. Verify that the VLANs have been created successfully:

```
NYCORE1#configure terminal
Enter configuration commands, one per line.  End with
CNTL/Z.
NYCORE1(config)#vlan 30
NYCORE1(config-vlan)#name Marketing
NYCORE1(config-vlan)#exit
NYCORE1(config)#vlan 40
NYCORE1(config-vlan)#name Research
NYCORE1(config-vlan)#exit
NYCORE1(config)#exit
NYCORE1#show vlan brief
VLAN Name                              Status    Ports
---- --------------------------------- --------
------------------------------
1    default                           active
Fa1/0/1, Fa1/0/2, Fa1/0/3

Fa1/0/4, Fa1/0/5, Fa1/0/6

Fa1/0/7, Fa1/0/8, Fa1/0/9

Fa1/0/10, Fa1/0/11, Fa1/0/12

Fa1/0/13, Fa1/0/14, Fa1/0/15

Fa1/0/16, Fa1/0/17, Fa1/0/18

Fa1/0/19, Fa1/0/20, Fa1/0/21

Fa1/0/23, Fa1/0/24, Gi1/0/1
                                                   Gi1/0/2
10   Management                        active
20   Sales                             active
30   Marketing                         active
40   Research                          active
99   Native                            act/lshut
1002 fddi-default                      act/unsup
```

```
1003 token-ring-default                act/unsup
1004 fddinet-default                   act/unsup
1005 trnet-default                     act/unsup
NYCORE1#
```

The VLANs have been created successfully. VTP should also have created these VLANs in the **NYACCESS1** switch as well. Feel free to verify this at your leisure.

Step 2

Next, examine the trunk connection to refresh your memory as to which VLANs are currently allowed:

```
NYCORE1#show interface trunk
Port        Mode             Encapsulation  Status
Native vlan
Fa1/0/22    on               802.1q         trunking
99
Fa1/0/23    auto             n-802.1q       trunking
1
Port        Vlans allowed on trunk
Fa1/0/22    10,20
Fa1/0/23    1-4094
Port        Vlans allowed and active in management
domain
Fa1/0/22    10,20
Fa1/0/23    1,10,20,30
Port        Vlans in spanning tree forwarding state and
not pruned
Fa1/0/22    10,20
Fa1/0/23    1,10,20,30
NYCORE1#
```

VLANs 10 and 20 are currently allowed on the **Fa1/0/22** trunk.

Step 3

In this step, you will examine the commands available to you for adding and removing VLANs from a trunk. Use Cisco's context-sensitive help using the **?** character as follows:

```
NYCORE1#configure terminal
Enter configuration commands, one per line.  End with
CNTL/Z.
NYCORE1(config)#interface fastethernet 1/0/22
NYCORE1(config-if)#switchport trunk allowed vlan ?
  WORD    VLAN IDs of the allowed VLANs when this port
is in trunking mode
  add     add VLANs to the current list
  all     all VLANs
  except  all VLANs except the following
  none    no VLANs
  remove  remove VLANs from the current list
```

Step 4

In this step, you will use the **add** keyword to add VLANs **30** and **40** to the trunk as follows:

> ***Note:*** *Remember not to include a space after the "," when listing VLAN IDs.*

```
NYCORE1(config-if)#switchport trunk allowed vlan add
30,40
NYCORE1(config-if)#exit
NYCORE1(config)#exit
NYCORE1#
```

Step 5

Verify that the addition was executed correctly by examining the trunk interface once again:

```
NYCORE1#show interface trunk
Port        Mode             Encapsulation  Status
Native vlan
Fa1/0/22    on               802.1q         trunking
99
Fa1/0/23    auto             n-802.1q       trunking
1
Port        Vlans allowed on trunk
Fa1/0/22    10,20,30,40
Fa1/0/23    1-4094
Port        Vlans allowed and active in management
domain
Fa1/0/22    10,20,30,40
Fa1/0/23    1,10,20,30
Port        Vlans in spanning tree forwarding state and
not pruned
Fa1/0/22    10,20
Fa1/0/23    1,10,20,30,40
NYCORE1#
```

Notice that both VLANs **30** and **40** have been successfully added to **Fa1/0/22**.

Step 6

Next, you will remove VLAN 20 as per the instructions. To do so, use the following commands:

```
NYCORE1#configure terminal
Enter configuration commands, one per line.  End with
CNTL/Z.
NYCORE1(config)#interface fastethernet 1/0/22
NYCORE1(config-if)#switchport trunk allowed vlan remove
20
NYCORE1(config-if)#exit
NYCORE1(config)#exit
NYCORE1#
```

Step 7

Once again, verify the change by examining the trunk interface:

```
NYCORE1#show interface trunk
Port        Mode             Encapsulation  Status
Native vlan
Fa1/0/22    on               802.1q         trunking
99
Fa1/0/23    auto             n-802.1q       trunking
1
Port        Vlans allowed on trunk
Fa1/0/22    10,30,40
Fa1/0/23    1-4094
Port        Vlans allowed and active in management
domain
Fa1/0/22    10,30,40
Fa1/0/23    1,10,20,30
Port        Vlans in spanning tree forwarding state and
not pruned
Fa1/0/22    10,30,40
Fa1/0/23    1,10,20,30,40
NYCORE1#
```

The changes have been made successfully.

So far, you have made changes only to one end of the trunk. Keep in mind that the trunk is still functioning for VLAN **10** since it is correctly configured at both ends.

No other VLAN, however, can traverse this trunk at this point in time.

Step 8

In this step, you will connect to the **NYACCESS1** switch and configure the other end of the trunk. Specifically, you will add VLANs **30** and **40** and remove VLAN **20**:

```
NYACCESS1#configure terminal
Enter configuration commands, one per line.  End with
CNTL/Z.
NYACCESS1(config)#interface fastethernet 0/24
NYACCESS1(config-if)#switchport trunk allowed vlan add
30,40
NYACCESS1(config-if)#switchport trunk allowed vlan
remove 20
NYACCESS1(config-if)#exit
NYACCESS1(config)#exit
NYACCESS1#
```

Step 9

Examine the trunk interface on **NYACCESS1** to confirm the changes you made:

```
NYACCESS1#show interface trunk
Port        Mode             Encapsulation  Status
Native vlan
Fa0/24      on               802.1q         trunking
99
Port        Vlans allowed on trunk
Fa0/24      10,30,40
Port        Vlans allowed and active in management
domain
Fa0/24      10,30,40
Port        Vlans in spanning tree forwarding state and
not pruned
Fa0/24      10,30,40
NYACCESS1#
```

Both ends of the trunk are now configured correctly and are passing the appropriate trunks.

You have successfully removed and added VLANs to a trunk.

Leave the devices in their current states and move on to the next exercise.