Trunk Configuration Part 2

In **Exercise 1** you partially configured a trunk link between **NYCORE1** and **NYACCESS1**. The configuration was completed on the **NYCORE1** side, however, not on the **NYACCESS1** side. You configured **VTP** in Exercise 2 so that **NYCORE1** will automatically share its VLANs with **NYACCESS1**.

Now that **NYACCESS1** has the appropriate VLANs configured, you can finish the trunk configuration.

Learning Outcomes

After completing this exercise, you will be able to:

- Create a trunk link and pass two VLANs through it

Your Devices

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

- **NYEDGE1** (Cisco 2911 Router)
- **NYWAN1** (Cisco 2911 Router)
- **NYACCESS1** (Cisco 2960-24 Switch)
- **NYCORE2** (Cisco 3750v2-24PS Switch)
- **PLABCSCO01** (Cisco Tools Server)

Task 1 - Trunk Configuration and Dynamic Trunking Protocol Part 2

At the end of **Exercise 1,** you had successfully configured interface **FastEthernet 0/24** on **NYACCESS1** as a trunk.

> Before typing the commands as noted, please ensure that the device is at the # prompt. If not, please type “enable” to proceed.

Step 1

Connect to **NYACCESS1** and configure the **FastEthernet 0/24** interface to allow VLANs **10** and **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
10,20
NYACCESS1(config-if)#exit
NYACCESS1(config)#exit
NYACCESS1#
```

Step 2

Take a look at the trunk interface with the following command to verify your configuration:

```
NYACCESS1#show interface trunk
Port        Mode             Encapsulation  Status
Native vlan
Fa0/24      on               802.1q         trunking
1
Port        Vlans allowed on trunk
Fa0/24      10,20
Port        Vlans allowed and active in management
domain
Fa0/24      10,20
Port        Vlans in spanning tree forwarding state and
```

```
not pruned
Fa0/24      10,20
NYACCESS1#
```

The VLANs have been added successfully to the trunk.

> ***Note:*** *When entering commands that allow VLANs on trunks, you are essentially overwriting any previously allowed VLAN configuration. The command removes any other allowed VLANs that may have been configured and allows only those in the command. In order to add allowed VLANs to an already existing list, use this format of the command:* ***switchport trunk allowed vlan add XX*** *where XX is the VLAN ID. Review your course material or use a search engine to research this topic further.*

Step 3

In order to test to see if the trunk is successfully passing traffic, you must first configure some devices on VLANs **10** and **20** on both the **NYCORE1** and the **NYACCES1** switch. You will use the following devices, and you will place the ports they are connected to within the appropriate VLAN:

- **NYEDGE1 VLAN10**
- **NYCORE2 VLAN10**
- **NYWAN1 VLAN 20**
- **PLABCSCO01 VLAN 20**

First, configure the appropriate ports on **NYCORE1**. Looking at the lab diagram, you can see that port **FastEthernet 1/0/1** connects to **NYEDGE1** should be on VLAN **10** and **FastEthernet 1/0/2** connects to **NYWAN1** and should be on VLAN **20**:

```
NYCORE1#configure terminal
Enter configuration commands, one per line.  End with
CNTL/Z.
NYCORE1(config)#interface fastethernet 1/0/1
NYCORE1(config-if)#switchport mode access
NYCORE1(config-if)#switchport access vlan 10
NYCORE1(config-if)#exit
NYCORE1(config)#interface fastethernet 1/0/2
NYCORE1(config-if)#switchport mode access
NYCORE1(config-if)#switchport access vlan 20
NYCORE1(config-if)#exit
NYCORE1(config)#
```

Step 4

Next, configure the appropriate ports on **NYACCESS1**. Looking at the lab diagram, you can see that port **FastEthernet 0/23** connects to **NYCORE2** and should be on VLAN **10** and **FastEthernet 0/1** connects to **PLABCSCO01** should be on VLAN **20**:

```
NYACCESS1#configure terminal
Enter configuration commands, one per line.  End with
CNTL/Z.
NYACCESS1(config)#interface fastethernet 0/23
NYACCESS1(config-if)#switchport mode access
NYACCESS1(config-if)#switchport access vlan 10
NYACCESS1(config-if)#exit
NYACCESS1(config)#interface fastethernet 0/1
NYACCESS1(config-if)#switchport mode access
NYACCESS1(config-if)#switchport access vlan 20
NYACCESS1(config-if)#exit
NYACCESS1(config)#
*Mar  1 04:26:29.919: %LINEPROTO-5-UPDOWN: Line
protocol on Interface Vlan1, changed state to down
```

> ***Note:*** *You may have noticed that the VLAN 1 interface has gone down on the* ***NYACCESS*** *switch. This is normal behavior. The VLAN* ***1*** *interface is what is known as a* ***Switched Virtual Interface*** *or* ***SVI****. Switches by their very nature are layer 2 devices and thus do not function with IP addresses.*

*However, it is necessary to connect to them and manage them remotely. IP connectivity is achieved via the **SVI**. A prerequisite for the **SVI** to be in an **up** state is that at least one active port must be on the VLAN of the **SVI**. Otherwise, the **SVI** goes down. **SVIs** are used for other purposes as well, and you can use your favorite search engine to research them further.*

Step 5

You are now ready to test your trunk configuration. For your convenience, the following is a list of IP addresses that each device is assigned with as well as the VLAN that you assigned to its port so that you can test connectivity using ping:

- **NYEDGE1** - VLAN **10 - 192.168.16.1**
- **NYWAN1** - VLAN **20 - 192.168.16.2**
- **NYCORE2** - VLAN **10 - 192.168.16.4**
- **PLABCSCO01** - VLAN **20 - 192.168.16.10**

Alert: Before testing make sure the **PLABCSCO01** server is on.

Connect to **NYEDGE1** and ping all three other devices. You should only get a response from **NYCORE2** which is on the same VLAN:

```
NYEDGE1#ping 192.168.16.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.16.2, timeout
is 2 seconds:
.....
Success rate is 0 percent (0/5)
NYEDGE1#ping 192.168.16.4
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.16.4, timeout
is 2 seconds:
..!!!
Success rate is 60 percent (3/5), round-trip
min/avg/max = 1/1/1 ms
NYEDGE1#ping 192.168.16.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.16.10,
timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
NYEDGE1#
```

You only get a response from **NYCORE2** which means that the communication can only have occurred over the trunk link between **NYACCESS1** and **NYCORE1**.

***Note:** The lab topology shows that **NYCORE2** has two links between it and **NYCORE1**. For the purposes of this lab, these two links have been shut down to ensure that there is only one path that the **NYCORE2** device can take to reach **NYEDGE1**. You can confirm this by examining the ports on the **NYCORE2** switch.*

Step 6

Connect to **NYWAN1** and ping all three other devices. This time, you should only get a response from **PLABCSCO01** which is on the same VLAN:

```
NYWAN1#ping 192.168.16.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.16.1, timeout
is 2 seconds:
.....
Success rate is 0 percent (0/5)
NYWAN1#ping 192.168.16.4
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.16.4, timeout
is 2 seconds:
.....
Success rate is 0 percent (0/5)
NYWAN1#ping 192.168.16.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.16.10,
```

```
timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip
min/avg/max = 1/1/1 ms
NYWAN1#
```

Once again, you get a response only from **PLABCSCO01** which is on the same VLAN. This communication can only have occurred over the trunk link.

You have successfully configured and verified the trunk configuration.

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