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Internetworking
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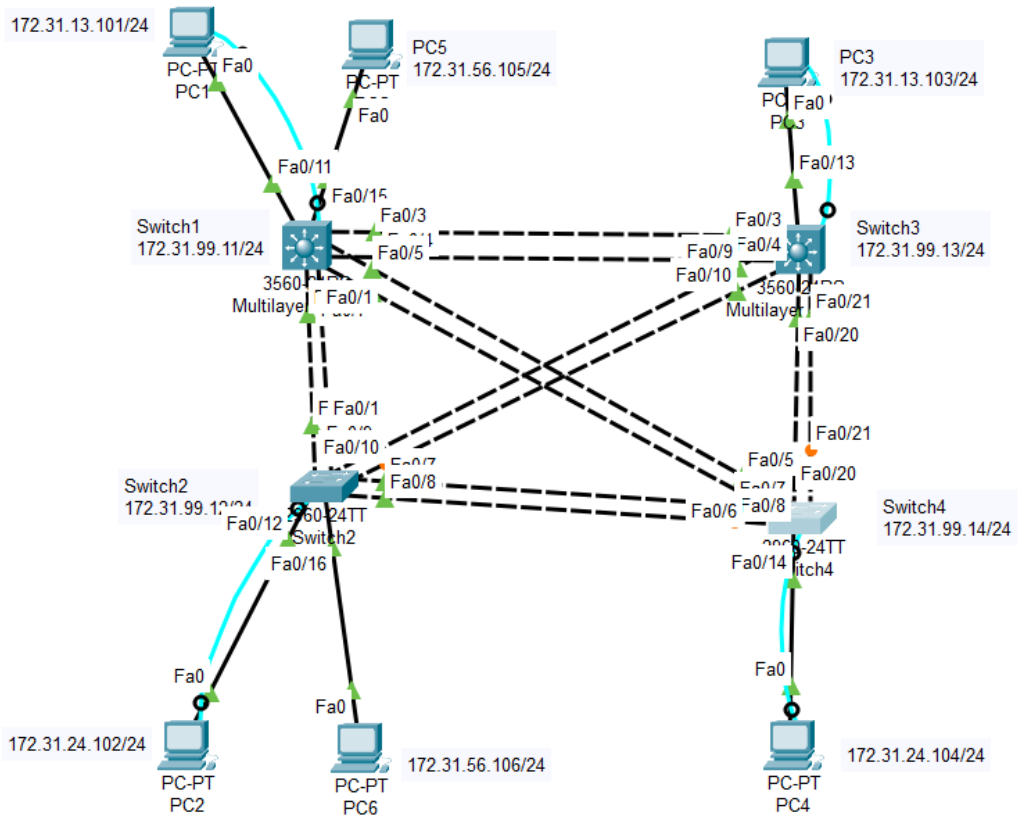
Lab 2 Lab Report

Lab Description:
Create a topology that will allow multi-connection switches to be set up, as well as creating and setting up new VLANs. You must also Set up Spanning-Tree Protocol and VTP Configuration.

Topography:



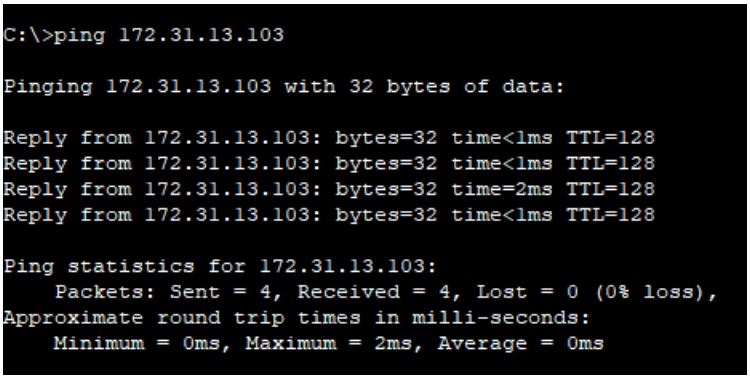
Syntax:

CLI Command	Description	Mode of Cisco OIS
ping	Used to ping ip addresses from a PC. You can ping other PC's or switches with this.	Windows CMD

Logging synchronous	Forces error messages to be on its own line, rather than interrupt a line that you're typing on.	Console Line
Enable	Enter Privileged Mode	User Mode
Conf t	Enter Global Configurator Mode	Privileged Mode
Line con 0	Enter the Console Line	Global Configurator Mode
Hostname	Used to name a switch or PC	Privileged Mode
Password	Used to set a password	Privileged Mode
Login	Used to require the password to utilize User Mode	Global Configurator Mode
Enable password	Used to set an unencrypted Privileged Password	Global Configurator Mode
Show ip interface brief (sh ip int brief)	Displays a brief list of all interfaces	Privileged Mode
vtp domain INETLAB	Renames the VTP domain from NULL to INETLAB	Global Configurator Mode
Vtp password cisco	Set a password within the VTP Domain	Global Configurator Mode
Vtp mode server/client	Sets the vtp mode between server or client, in the case of this lab.	Global Configurator Mode
Switchport mode access	Changes the mode of a switchport to access mode	Line configuration Mode (within a vlan)
Switchport trunk encapsulation dot1q	Sets up the switch to switch connect to use IEEE 802.1Q encapsulation	Within a vlan with a multi-Connection switch
Switchport mode trunk	Sets the mode for the switchport to trunk	Within a vlan
Spanning-tree vlan xx root primary	Setting up a spanning tree within a vlan, and setting it to root primary	Privileged mode

Verification:

F) from PC1 to PC3



G) From Switch1 to Switch 4

```
Switch1#ping 172.31.99.14

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.31.99.14, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/2/10 ms
```

H) Status of STP:

Vlan 13:

```
VLAN0013
  Spanning tree enabled protocol ieee
  Root ID     Priority    24589
              Address     0001.42C2.DE33
              Cost        19
              Port        3(FastEthernet0/3)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    24589  (priority 24576 sys-id-ext 13)
              Address     0050.0F52.EA6C
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20
```

Vlan 24:

```
VLAN0024
  Spanning tree enabled protocol ieee
  Root ID     Priority    24600
              Address     0001.42C2.DE33
              Cost        19
              Port        3(FastEthernet0/3)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    24600  (priority 24576 sys-id-ext 24)
              Address     0050.0F52.EA6C
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20
```

Vlan 56:

```
VLAN0056
  Spanning tree enabled protocol ieee
  Root ID     Priority    24632
              Address     0001.42C2.DE33
              Cost        19
              Port        3(FastEthernet0/3)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    24632  (priority 24576 sys-id-ext 56)
              Address     0050.0F52.EA6C
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20
```

Conclusion:

This lab was quite a bit more complex than the last, mainly due to the addition of STP and VTP configurations. I ran into a bit of a hiccup at the end of the lab, where my PC's couldn't reach each other, however this was quickly solved as I realized I forgot to fully set up all of the Fast Ethernet ports. Originally I only set up the vlan's that PC's were connected to, instead of PC's and switches. This lab took

quite a bit of thinking, but retrospectively wasn't terribly difficult due to most of the switches needing the same commands to set it up fully.