**CMIT 351 Project 1**

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**Part 1: Design the Local Area Network**

Graphical user interface, diagram, application

Description automatically generated

**Part 2: Create the basic switch configurations**

**2.1 Cable the network**

1. I connected an ethernet cable from PC-A to port 6 on S1.
2. I connected an ethernet cable from PC-B to port 11 on S2.
3. I connected an ethernet cable from PC-C to port 1 on S2.
4. I connected an ethernet cable from port 1 on S1 to port 1 on S2

**2.2. Configure the basic switch functions**

1. I use the command enable to enter a privileged EXEC prompt mode.
2. I use the command “conf t” to enter the global config mode.
3. I use the command “enable secret class” to set the secret password.
4. I use the command “line con 0” to enter the interface.
5. I use the command “password cisco” to set the desired password.
6. I use the command “line vty 0 15” to enter the interface.
7. I use the command “password cisco” to set the desired password for “line vty 0 15.
8. I use the command “exit” to return to the config prompt. In the config prompt I use “banner motd ‘Unauthorized Access’ to set the MOTD.
9. I use the command “line con 0” to enter the console line. In the console line I use the command “logging synchronous” to turn on the synchronous logging.

(Repeat steps 1 through 9 for S2)

**2.3 Configure the computers**

1. I add an IP address of 192.168.10.3 with a subnet mask of 255.255.255.0 and gateway of 192.168.10.1 to PC-A.
2. I add an IP address of 192.168.10.4 with a subnet mask of 255.255.255.0 and gateway of 192.168.10.1 to PC-B
3. I add an IP address of 192.168.20.3 with a subnet mask of 255.255.255.0 and gateway of 192.168.20.1 to PC-C

**2.4 Test and Validate Connectivity**

1. I ping 192.168.10.4 from PC-A and the result is *reply from 192.168.10.4*
2. I ping 192.168.10.3 from PC-B and the result is *reply from 192.168.10.3*
3. I ping 192.168.10.4 from PC-C and the result is *request time out.*
4. I check the ethernet cable connection of both PC-B and PC-C and find a not completely seated ethernet cable in PC-C and retry ping.
5. I ping 192.168.10.4 from PC-C and the result is *reply from 192.168.10.4*

**Part 3: Define the VLANs**

1. I use the command “enable” to enter the privileged EXEC mode
2. I use the command “conf t” to enter the config mode
3. I use the command “vlan 10” to create the VLAN 10 and then the command “name Students” to name VLAN 10 Students.
4. I use the command “vlan 20” to create the VLAN 20 and then the command “name Faculty” to name VLAN 20 Faculty.
5. I use the command “vlan 99” to create the VLAN 99 and then the command “name Management” to name VLAN 99 Management.
6. I use the command “int fa0/6” to access the prompt, then I use “switchport mode access” to change the port to access, finally I used the command “switchport access vlan 10” to assign VLAN 10’s interface.
7. I use the command “int fa0/12-20” to access the prompt to those ranges, then I use “switchport mode access” to change the port to access, finally I used the command “switchport access vlan 10” to assign VLAN 10’s interface.
8. I use the command “int fa0/22-23” to access the prompt to those ranges, then I use “switchport mode access” to change the port to access, finally I used the command “switchport access vlan 10” to assign VLAN 10’s interface.
9. I use the command “int fa0/11” to access the prompt, then I use “switchport mode access” to change the port to access, finally I used the command “switchport access vlan 20” to assign VLAN 20’s interface.
10. I use the command “int fa0/21” to access the prompt, then I use “switchport mode access” to change the port to access, finally I used the command “switchport access vlan 20” to assign VLAN 20’s interface.
11. I use the command “int vlan 99” to access the interface. I use the command “ip address 192.168.1.11 255.255.255.0” to assign the IP address to the VLAN of the switch.

**(Repeat appropriate steps to configure S2)**

**Part 4: Implement VLAN Trunking**

1. I use the command “enable” to enter the privileged EXEC mode
2. I use the command “conf t” to enter the config mode
3. I use the command “int fa 0/1” to enter the interface prompt. I use the command “switchport mode trunk” to set it to trunking mode.
4. To verify all of the VLAN configurations I use the command “show running-config” and then I use the command “show ip interface”.
   * 1. When complete I diagnose the network by pining all computers and switches to ensure that they are all communicating and do not have any timeout replies or packet loss. Setup is complete and the network is ready for use.