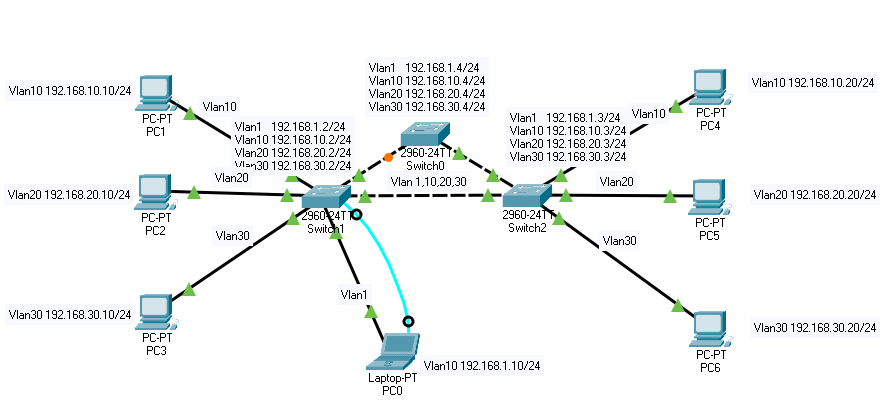
**Homework 3**

**CSCE 4535 Final Grade 5%**

**Objectives:**

**The objective of this Lab is to learn Layer 2 networking which includes, vlan configuration, vlan trunking, intra vlan connectivity, lack of inter vlan connectivity and operation of the spanning-tree protocol.**

**Build the network with the following specifications using packet tracer as shown in diagram below:**



**The network consists of 7 PC’s and three switches. PC0 serves as a remote console for Management.** **PC1 & PC4 are on vlan 10, PC2 & PC5 are on vlan 20, and PC3 & PC6 are on vlan 30.**



* **Configure the following:**

1. Console cable for PC0 for management (We use Laptop0 (PC0) for initial configuration of each switch)

(configure switch 1 as shown in the diagram and then dis-connect the console cable from switch 1 and connect it to switch2 for initial configuration of switch 2 and then dis-connect the console cable from switch 2 and connect it to switch3 for initial configuration of switch 3)

1. Ethernet cable for PC0 for remote management
2. Ethernet cables for remaining PC’s as assigned to correct switchport
3. Set IP address for each PC as assigned
4. Create vlan 10, 20 & 30 and name them student, Lab & staff respectively for each switch
5. Set “switchport mode access” for ports 1, 2, 3 on each switch
6. Set “switchport access vlan xx” for ports 1, 2, 3 on each switch respectively
7. Set IP address for each vlan as assigned using “Interface vlan xx” command followed by IP address command on each switch
8. Set up dot1Q trunk between switch-1, Switch-2 and switch-3 with vlans 1, 10, 20, 30 using “switchport mode trunk” command followed by “switchport trunk allowed vlan” command on each switch
9. Apply Security Script to setup the following:
   1. Configure Hostname for MLS-1
   2. Configure enable “secret password” cisco
   3. Configure “line console 0 password” cisco
   4. Configure the console Idle privilege exec timeout of 5 minutes
   5. Now encrypt the console password
   6. Now add a banner “No unauthorized access allowed!”
   7. Configure vty lines 0-4 for remote access
   8. Configure password “cisco” for remote login
10. Save your configuration for Switch-1, Switch-2 & switch-3
11. Save your Packet tracer activity file (.pkt) on your USB drive. You will need it in future

* **Submit the following for grading (**Submit a word file with the following):

1. The configuration item from Switch-1 Switch2 & Switch-3 for this homework

Config file from Switch1:

!

version 15.0

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname Switch1

!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0

!

!

!

!

!

!

spanning-tree mode pvst

spanning-tree extend system-id

!

interface FastEthernet0/1

switchport access vlan 10

switchport mode access

!

interface FastEthernet0/2

switchport access vlan 20

switchport mode access

!

interface FastEthernet0/3

switchport access vlan 30

switchport mode access

!

interface FastEthernet0/4

!

interface FastEthernet0/5

switchport trunk allowed vlan 1,10,20,30

switchport mode trunk

!

interface FastEthernet0/6

switchport trunk allowed vlan 1,10,20,30

switchport mode trunk

!

interface FastEthernet0/7

!

interface FastEthernet0/8

!

interface FastEthernet0/9

!

interface FastEthernet0/10

!

interface FastEthernet0/11

!

interface FastEthernet0/12

!

interface FastEthernet0/13

!

interface FastEthernet0/14

!

interface FastEthernet0/15

!

interface FastEthernet0/16

!

interface FastEthernet0/17

!

interface FastEthernet0/18

!

interface FastEthernet0/19

!

interface FastEthernet0/20

!

interface FastEthernet0/21

!

interface FastEthernet0/22

!

interface FastEthernet0/23

!

interface FastEthernet0/24

!

interface GigabitEthernet0/1

!

interface GigabitEthernet0/2

!

interface Vlan1

ip address 192.168.1.2 255.255.255.0

!

interface Vlan10

ip address 192.168.10.2 255.255.255.0

!

interface Vlan20

ip address 192.168.20.2 255.255.255.0

!

interface Vlan30

ip address 192.168.30.2 255.255.255.0

!

ip default-gateway 192.168.1.1

!

banner motd #No unauthorized access allowed!#

!

!

!

line con 0

password 7 0822455D0A16

login

exec-timeout 5 0

!

line vty 0 4

password 7 0822455D0A16

login

transport input telnet

line vty 5 15

login

!

!

!

!

end

Config file from Switch2:

!

version 15.0

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname Switch2

!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0

!

!

!

!

!

!

spanning-tree mode pvst

spanning-tree extend system-id

!

interface FastEthernet0/1

switchport access vlan 10

switchport mode access

!

interface FastEthernet0/2

switchport access vlan 20

switchport mode access

!

interface FastEthernet0/3

switchport access vlan 30

switchport mode access

!

interface FastEthernet0/4

!

interface FastEthernet0/5

switchport trunk allowed vlan 1,10,20,30

switchport mode trunk

!

interface FastEthernet0/6

!

interface FastEthernet0/7

switchport trunk allowed vlan 1,10,20,30

switchport mode trunk

!

interface FastEthernet0/8

!

interface FastEthernet0/9

!

interface FastEthernet0/10

!

interface FastEthernet0/11

!

interface FastEthernet0/12

!

interface FastEthernet0/13

!

interface FastEthernet0/14

!

interface FastEthernet0/15

!

interface FastEthernet0/16

!

interface FastEthernet0/17

!

interface FastEthernet0/18

!

interface FastEthernet0/19

!

interface FastEthernet0/20

!

interface FastEthernet0/21

!

interface FastEthernet0/22

!

interface FastEthernet0/23

!

interface FastEthernet0/24

!

interface GigabitEthernet0/1

!

interface GigabitEthernet0/2

!

interface Vlan1

ip address 192.168.1.3 255.255.255.0

!

interface Vlan10

ip address 192.168.10.3 255.255.255.0

!

interface Vlan20

ip address 192.168.20.3 255.255.255.0

!

interface Vlan30

ip address 192.168.30.3 255.255.255.0

!

banner motd #No unauthorized access allowed!#

!

!

!

line con 0

password 7 0822455D0A16

login

exec-timeout 5 0

!

line vty 0 4

password 7 0822455D0A16

login

transport input telnet

line vty 5 15

login

!

!

!

!

end

Config file for Switch3:

!

version 15.0

no service timestamps log datetime msec

no service timestamps debug datetime msec

service password-encryption

!

hostname Switch3

!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0

!

!

!

!

!

!

spanning-tree mode pvst

spanning-tree extend system-id

!

interface FastEthernet0/1

switchport access vlan 10

switchport mode access

!

interface FastEthernet0/2

switchport access vlan 20

switchport mode access

!

interface FastEthernet0/3

switchport access vlan 30

switchport mode access

!

interface FastEthernet0/4

!

interface FastEthernet0/5

!

interface FastEthernet0/6

switchport trunk allowed vlan 1,10,20,30

switchport mode trunk

!

interface FastEthernet0/7

switchport trunk allowed vlan 1,10,20,30

switchport mode trunk

!

interface FastEthernet0/8

!

interface FastEthernet0/9

!

interface FastEthernet0/10

!

interface FastEthernet0/11

!

interface FastEthernet0/12

!

interface FastEthernet0/13

!

interface FastEthernet0/14

!

interface FastEthernet0/15

!

interface FastEthernet0/16

!

interface FastEthernet0/17

!

interface FastEthernet0/18

!

interface FastEthernet0/19

!

interface FastEthernet0/20

!

interface FastEthernet0/21

!

interface FastEthernet0/22

!

interface FastEthernet0/23

!

interface FastEthernet0/24

!

interface GigabitEthernet0/1

!

interface GigabitEthernet0/2

!

interface Vlan1

ip address 192.168.1.4 255.255.255.0

!

interface Vlan10

ip address 192.168.10.4 255.255.255.0

!

interface Vlan20

ip address 192.168.20.4 255.255.255.0

!

interface Vlan30

ip address 192.168.30.4 255.255.255.0

!

banner motd #No unauthorized access allowed!#

!

!

!

line con 0

password 7 0822455D0A16

login

exec-timeout 5 0

!

line vty 0 4

password 7 0822455D0A16

login

transport input telnet

line vty 5 15

login

!

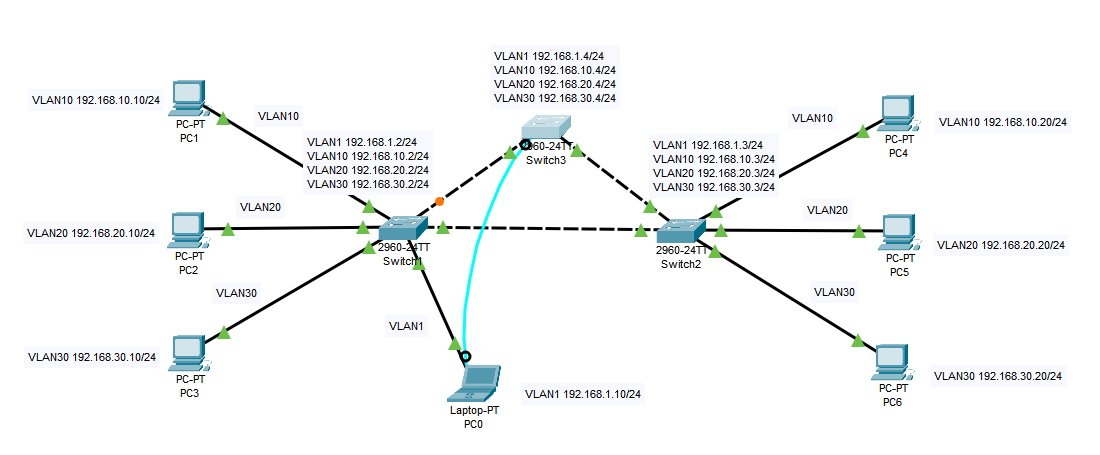
!

!

!

end

1. Label and Submit a copy of your network diagram (you can use windows “snip” to copy)



1. Submit normalized “show vlan” output from Switch-1, Switch-2 & Switch-3

Switch1:

VLAN Name Status Ports

---- -------------------------------- --------- -------------------------------

1 default active Fa0/4, Fa0/7, Fa0/8, Fa0/9

Fa0/10, Fa0/11, Fa0/12, Fa0/13

Fa0/14, Fa0/15, Fa0/16, Fa0/17

Fa0/18, Fa0/19, Fa0/20, Fa0/21

Fa0/22, Fa0/23, Fa0/24, Gig0/1

Gig0/2

10 student active Fa0/1

20 Lab active Fa0/2

30 Staff active Fa0/3

1002 fddi-default active

1003 token-ring-default active

1004 fddinet-default active

1005 trnet-default active

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

1 enet 100001 1500 - - - - - 0 0

10 enet 100010 1500 - - - - - 0 0

20 enet 100020 1500 - - - - - 0 0

30 enet 100030 1500 - - - - - 0 0

1002 fddi 101002 1500 - - - - - 0 0

1003 tr 101003 1500 - - - - - 0 0

1004 fdnet 101004 1500 - - - ieee - 0 0

1005 trnet 101005 1500 - - - ibm - 0 0

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs

------------------------------------------------------------------------------

Primary Secondary Type Ports

------- --------- ----------------- ------------------------------------------

Switch2:

VLAN Name Status Ports

---- -------------------------------- --------- -------------------------------

1 default active Fa0/4, Fa0/6, Fa0/8, Fa0/9

Fa0/10, Fa0/11, Fa0/12, Fa0/13

Fa0/14, Fa0/15, Fa0/16, Fa0/17

Fa0/18, Fa0/19, Fa0/20, Fa0/21

Fa0/22, Fa0/23, Fa0/24, Gig0/1

Gig0/2

10 student active Fa0/1

20 Lab active Fa0/2

30 staff active Fa0/3

1002 fddi-default active

1003 token-ring-default active

1004 fddinet-default active

1005 trnet-default active

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

1 enet 100001 1500 - - - - - 0 0

10 enet 100010 1500 - - - - - 0 0

20 enet 100020 1500 - - - - - 0 0

30 enet 100030 1500 - - - - - 0 0

1002 fddi 101002 1500 - - - - - 0 0

1003 tr 101003 1500 - - - - - 0 0

1004 fdnet 101004 1500 - - - ieee - 0 0

1005 trnet 101005 1500 - - - ibm - 0 0

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs

------------------------------------------------------------------------------

Primary Secondary Type Ports

------- --------- ----------------- ------------------------------------------

Switch3:

VLAN Name Status Ports

---- -------------------------------- --------- -------------------------------

1 default active Fa0/4, Fa0/5, Fa0/8, Fa0/9

Fa0/10, Fa0/11, Fa0/12, Fa0/13

Fa0/14, Fa0/15, Fa0/16, Fa0/17

Fa0/18, Fa0/19, Fa0/20, Fa0/21

Fa0/22, Fa0/23, Fa0/24, Gig0/1

Gig0/2

10 student active Fa0/1

20 Lab active Fa0/2

30 staff active Fa0/3

1002 fddi-default active

1003 token-ring-default active

1004 fddinet-default active

1005 trnet-default active

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

1 enet 100001 1500 - - - - - 0 0

10 enet 100010 1500 - - - - - 0 0

20 enet 100020 1500 - - - - - 0 0

30 enet 100030 1500 - - - - - 0 0

1002 fddi 101002 1500 - - - - - 0 0

1003 tr 101003 1500 - - - - - 0 0

1004 fdnet 101004 1500 - - - ieee - 0 0

1005 trnet 101005 1500 - - - ibm - 0 0

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2

---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs

------------------------------------------------------------------------------

Primary Secondary Type Ports

------- --------- ----------------- ------------------------------------------

1. Submit normalized “show spanning-tree active” output from Switch-1, Switch-2 & Switch-3

Switch1:

VLAN0001

Spanning tree enabled protocol ieee

Root ID Priority 32769

Address 0050.0FE6.BE33

Cost 19

Port 5(FastEthernet0/5)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)

Address 00E0.B064.DB61

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/5 Root FWD 19 128.5 P2p

Fa0/6 Altn BLK 19 128.6 P2p

Fa0/4 Desg FWD 19 128.4 P2p

VLAN0010

Spanning tree enabled protocol ieee

Root ID Priority 32778

Address 0050.0FE6.BE33

Cost 19

Port 5(FastEthernet0/5)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)

Address 00E0.B064.DB61

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/5 Root FWD 19 128.5 P2p

Fa0/6 Altn BLK 19 128.6 P2p

Fa0/1 Desg FWD 19 128.1 P2p

VLAN0020

Spanning tree enabled protocol ieee

Root ID Priority 32788

Address 0050.0FE6.BE33

Cost 19

Port 5(FastEthernet0/5)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)

Address 00E0.B064.DB61

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/5 Root FWD 19 128.5 P2p

Fa0/6 Altn BLK 19 128.6 P2p

Fa0/2 Desg FWD 19 128.2 P2p

VLAN0030

Spanning tree enabled protocol ieee

Root ID Priority 32798

Address 0050.0FE6.BE33

Cost 19

Port 5(FastEthernet0/5)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)

Address 00E0.B064.DB61

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/5 Root FWD 19 128.5 P2p

Fa0/6 Altn BLK 19 128.6 P2p

Fa0/3 Desg FWD 19 128.3 P2p

Switch2:

VLAN0001

Spanning tree enabled protocol ieee

Root ID Priority 32769

Address 0050.0FE6.BE33

This bridge is the root

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)

Address 0050.0FE6.BE33

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/7 Desg FWD 19 128.7 P2p

Fa0/5 Desg FWD 19 128.5 P2p

VLAN0010

Spanning tree enabled protocol ieee

Root ID Priority 32778

Address 0050.0FE6.BE33

This bridge is the root

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)

Address 0050.0FE6.BE33

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/1 Desg FWD 19 128.1 P2p

Fa0/7 Desg FWD 19 128.7 P2p

Fa0/5 Desg FWD 19 128.5 P2p

VLAN0020

Spanning tree enabled protocol ieee

Root ID Priority 32788

Address 0050.0FE6.BE33

This bridge is the root

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)

Address 0050.0FE6.BE33

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/2 Desg FWD 19 128.2 P2p

Fa0/7 Desg FWD 19 128.7 P2p

Fa0/5 Desg FWD 19 128.5 P2p

VLAN0030

Spanning tree enabled protocol ieee

Root ID Priority 32798

Address 0050.0FE6.BE33

This bridge is the root

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)

Address 0050.0FE6.BE33

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/3 Desg FWD 19 128.3 P2p

Fa0/7 Desg FWD 19 128.7 P2p

Fa0/5 Desg FWD 19 128.5 P2p

Switch3:

VLAN0001

Spanning tree enabled protocol ieee

Root ID Priority 32769

Address 0050.0FE6.BE33

Cost 19

Port 7(FastEthernet0/7)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)

Address 00D0.58AB.C084

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/7 Root FWD 19 128.7 P2p

Fa0/6 Desg FWD 19 128.6 P2p

VLAN0010

Spanning tree enabled protocol ieee

Root ID Priority 32778

Address 0050.0FE6.BE33

Cost 19

Port 7(FastEthernet0/7)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)

Address 00D0.58AB.C084

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/7 Root FWD 19 128.7 P2p

Fa0/6 Desg FWD 19 128.6 P2p

VLAN0020

Spanning tree enabled protocol ieee

Root ID Priority 32788

Address 0050.0FE6.BE33

Cost 19

Port 7(FastEthernet0/7)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)

Address 00D0.58AB.C084

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/7 Root FWD 19 128.7 P2p

Fa0/6 Desg FWD 19 128.6 P2p

VLAN0030

Spanning tree enabled protocol ieee

Root ID Priority 32798

Address 0050.0FE6.BE33

Cost 19

Port 7(FastEthernet0/7)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)

Address 00D0.58AB.C084

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface Role Sts Cost Prio.Nbr Type

---------------- ---- --- --------- -------- --------------------------------

Fa0/7 Root FWD 19 128.7 P2p

Fa0/6 Desg FWD 19 128.6 P2p

1. Verify connectivity from PC0 to Switch-1, Switch-2 & Switch-3 by logging into the switch using telnet.

PC0 to Switch1:

Cisco Packet Tracer PC Command Line 1.0

C:\>telnet

Cisco Packet Tracer PC Telnet

Usage: telnet target [port]

C:\>telnet 192.168.1.2

Trying 192.168.1.2 ...OpenNo unauthorized access allowed!

User Access Verification

Password:

Switch1>

PC0 to Switch2:

C:\>telnet 192.168.1.3

Trying 192.168.1.3 ...OpenNo unauthorized access allowed!

User Access Verification

Password:

Switch2>

PC0 to Switch3:

C:\>telnet 192.168.1.4

Trying 192.168.1.4 ...OpenNo unauthorized access allowed!

User Access Verification

Password:

Switch3>

1. Verify Switch-1, Switch-2 & Switch-3 connectivity to PC0 with ping command

Ping from PC0 to Switch1:

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=255

Reply from 192.168.1.2: bytes=32 time<1ms TTL=255

Reply from 192.168.1.2: bytes=32 time<1ms TTL=255

Reply from 192.168.1.2: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.2:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

Ping from PC0 to Switch2:

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time=1ms TTL=255

Reply from 192.168.1.3: bytes=32 time<1ms TTL=255

Reply from 192.168.1.3: bytes=32 time=3ms TTL=255

Reply from 192.168.1.3: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 3ms, Average = 1ms

Ping from PC0 to Switch3:

C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time<1ms TTL=255

Reply from 192.168.1.4: bytes=32 time<1ms TTL=255

Reply from 192.168.1.4: bytes=32 time<1ms TTL=255

Reply from 192.168.1.4: bytes=32 time=12ms TTL=255

Ping statistics for 192.168.1.4:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 12ms, Average = 3ms

1. Verify network connectivity from PC1,2,3 to PC4,5,6 respectively

PC1 to PC4:

C:\>ping 192.168.10.20

Pinging 192.168.10.20 with 32 bytes of data:

Reply from 192.168.10.20: bytes=32 time=11ms TTL=128

Reply from 192.168.10.20: bytes=32 time<1ms TTL=128

Reply from 192.168.10.20: bytes=32 time=21ms TTL=128

Reply from 192.168.10.20: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.20:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 21ms, Average = 8ms

PC2 to PC5:

C:\>ping 192.168.20.20

Pinging 192.168.20.20 with 32 bytes of data:

Reply from 192.168.20.20: bytes=32 time=12ms TTL=128

Reply from 192.168.20.20: bytes=32 time=5ms TTL=128

Reply from 192.168.20.20: bytes=32 time=11ms TTL=128

Reply from 192.168.20.20: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.20.20:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 12ms, Average = 7ms

PC3 to PC6:

C:\>ping 192.168.30.20

Pinging 192.168.30.20 with 32 bytes of data:

Reply from 192.168.30.20: bytes=32 time=42ms TTL=128

Reply from 192.168.30.20: bytes=32 time=1ms TTL=128

Reply from 192.168.30.20: bytes=32 time<1ms TTL=128

Reply from 192.168.30.20: bytes=32 time=11ms TTL=128

Ping statistics for 192.168.30.20:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 42ms, Average = 13ms

1. Verify that there is no inter-vlan connectivity, for example PC1 to PC2, PC3, PC5, PC6 etc.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | PC1 | PC2 | PC3 | PC4 | PC5 | PC6 |
| PC1 | ==== | C:\>ping 192.168.20.10  Pinging 192.168.20.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.30.10  Pinging 192.168.30.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.10.20  Pinging 192.168.10.20 with 32 bytes of data:  Reply from 192.168.10.20: bytes=32 time=11ms TTL=128  Reply from 192.168.10.20: bytes=32 time<1ms TTL=128  Reply from 192.168.10.20: bytes=32 time=21ms TTL=128  Reply from 192.168.10.20: bytes=32 time<1ms TTL=128  Ping statistics for 192.168.10.20:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 21ms, Average = 8ms | C:\>ping 192.168.20.20  Pinging 192.168.20.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.30.20  Pinging 192.168.30.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), |
| PC2 | C:\>ping 192.168.10.10  Pinging 192.168.10.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | ==== | C:\>ping 192.168.30.10  Pinging 192.168.30.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss) | C:\>ping 192.168.10.20  Pinging 192.168.10.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.20.20  Pinging 192.168.20.20 with 32 bytes of data:  Reply from 192.168.20.20: bytes=32 time=12ms TTL=128  Reply from 192.168.20.20: bytes=32 time=5ms TTL=128  Reply from 192.168.20.20: bytes=32 time=11ms TTL=128  Reply from 192.168.20.20: bytes=32 time<1ms TTL=128  Ping statistics for 192.168.20.20:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 12ms, Average = 7ms | C:\>ping 192.168.30.20  Pinging 192.168.30.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), |
| PC3 | C:\>ping 192.168.10.10  Pinging 192.168.10.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.20.10  Pinging 192.168.20.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | ==== | C:\>ping 192.168.10.20  Pinging 192.168.10.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.20.20  Pinging 192.168.20.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.30.20  Pinging 192.168.30.20 with 32 bytes of data:  Reply from 192.168.30.20: bytes=32 time=42ms TTL=128  Reply from 192.168.30.20: bytes=32 time=1ms TTL=128  Reply from 192.168.30.20: bytes=32 time<1ms TTL=128  Reply from 192.168.30.20: bytes=32 time=11ms TTL=128  Ping statistics for 192.168.30.20:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 42ms, Average = 13ms |
| PC4 | C:\>ping 192.168.10.10  Pinging 192.168.10.10 with 32 bytes of data:  Reply from 192.168.10.10: bytes=32 time<1ms TTL=128  Reply from 192.168.10.10: bytes=32 time=13ms TTL=128  Reply from 192.168.10.10: bytes=32 time=1ms TTL=128  Reply from 192.168.10.10: bytes=32 time=1ms TTL=128  Ping statistics for 192.168.10.10:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 13ms, Average = 3ms | C:\>ping 192.168.20.10  Pinging 192.168.20.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.30.10  Pinging 192.168.30.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | ==== | C:\>ping 192.168.20.20  Pinging 192.168.20.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.30.20  Pinging 192.168.30.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), |
| PC5 | C:\>ping 192.168.10.10  Pinging 192.168.10.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.20.10  Pinging 192.168.20.10 with 32 bytes of data:  Reply from 192.168.20.10: bytes=32 time<1ms TTL=128  Reply from 192.168.20.10: bytes=32 time<1ms TTL=128  Reply from 192.168.20.10: bytes=32 time=12ms TTL=128  Reply from 192.168.20.10: bytes=32 time<1ms TTL=128  Ping statistics for 192.168.20.10:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 12ms, Average = 3ms | C:\>ping 192.168.30.10  Pinging 192.168.30.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.10.20  Pinging 192.168.10.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss) | ==== | C:\>ping 192.168.30.20  Pinging 192.168.30.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.30.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), |
| PC6 | C:\>ping 192.168.10.10  Pinging 192.168.10.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.20.10  Pinging 192.168.20.10 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.10:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.30.10  Pinging 192.168.30.10 with 32 bytes of data:  Reply from 192.168.30.10: bytes=32 time<1ms TTL=128  Reply from 192.168.30.10: bytes=32 time=1ms TTL=128  Reply from 192.168.30.10: bytes=32 time=16ms TTL=128  Reply from 192.168.30.10: bytes=32 time=2ms TTL=128  Ping statistics for 192.168.30.10:  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 16ms, Average = 4ms | C:\>ping 192.168.10.20  Pinging 192.168.10.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.10.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | C:\>ping 192.168.20.20  Pinging 192.168.20.20 with 32 bytes of data:  Request timed out.  Request timed out.  Request timed out.  Request timed out.  Ping statistics for 192.168.20.20:  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), | ==== |

1. Log your console output for the test in step “3, 4, 5, 6, 7, 8 above” in a word document and include it in your submission for grading.

**Please note that the grading for Homeworks and Labs require that you configure correct vlans on the switch and trunk based on the design. Configuring access vlans or configuring all vlans on trunk is not acceptable. I have seen many networks destroyed by this bad practice. I want to make sure that you do not learn this bad habit. You will not get full credit for work if you use this bad practice for homeworks and Labs.**