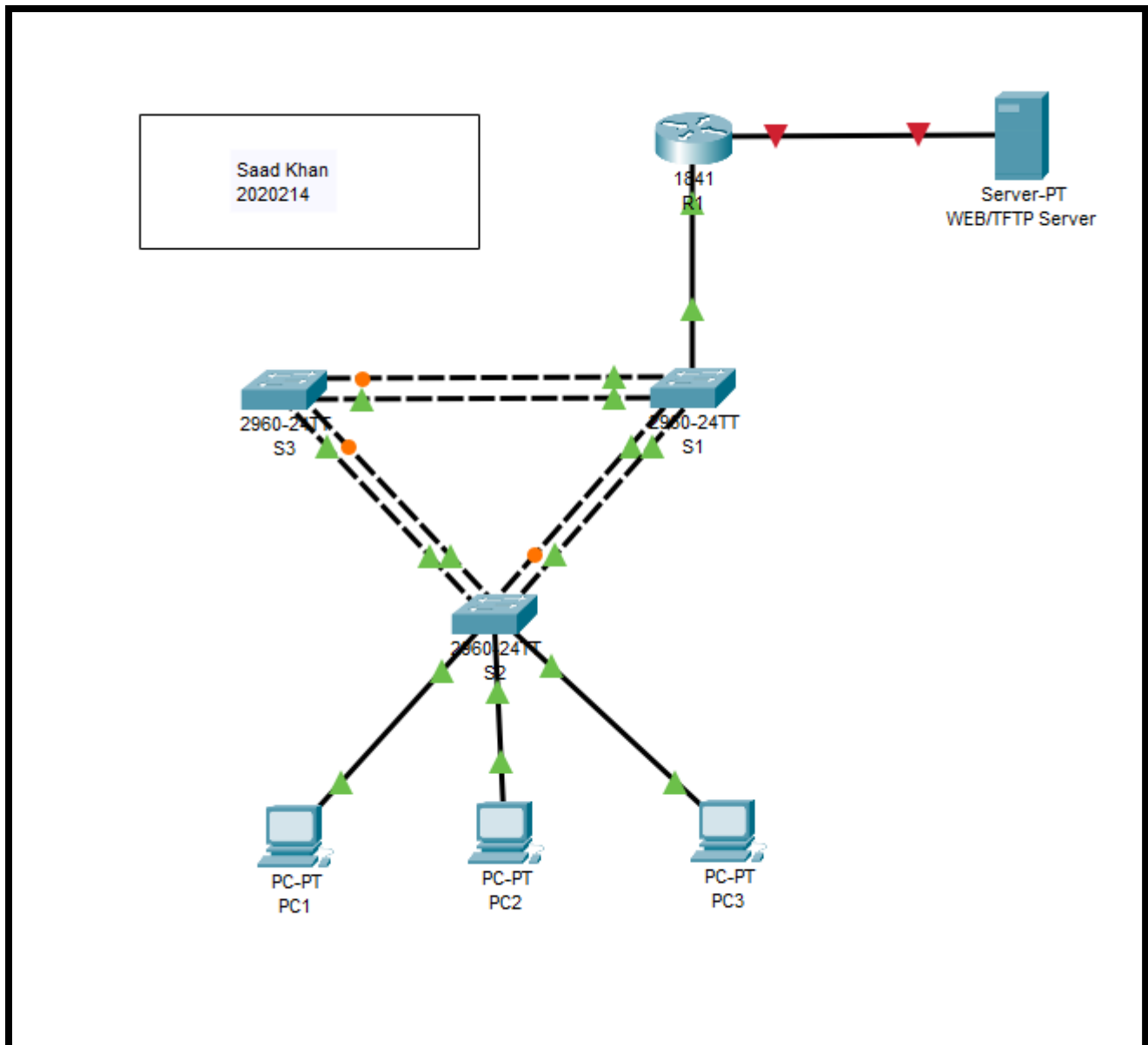# DOCUMENTATION

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Reg: 2020414

Task 1: Performing Basic Switch Configurations

Commands:

- Config term
- hostname s1
- enable secret class
- no ip domain-loopup
- ip default-gateway 172.17.99.1
- console 0
- password cisco
- login
- line vty 0 15
- password cisco
- login
- end

```
Switch(config)#
Switch(config)#hostname S1
S1(config)#enable secret class
S1(config)#no ip domain-lookup
S1(config)#ip default gateway 172.17.99.1
                       ^
% Invalid input detected at '^' marker.

S1(config)#ip default-gateway 172.17.99.1
S1(config)#line console 0
S1(config-line)#password cisco
S1(config-line)#login
S1(config-line)#line vty 0 15
S1(config-line)#password cisco
S1(config-line)#login
S1(config-line)#end
S1#
%SYS-5-CONFIG_I: Configured from console by console

S1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
S1#config term
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)#interface vlan99
S1(config-if)#ip address 172.17.99.11 255.255.255.0
S1(config-if)#no shutdown
S1(config-if)#exit
S1(config)#
```
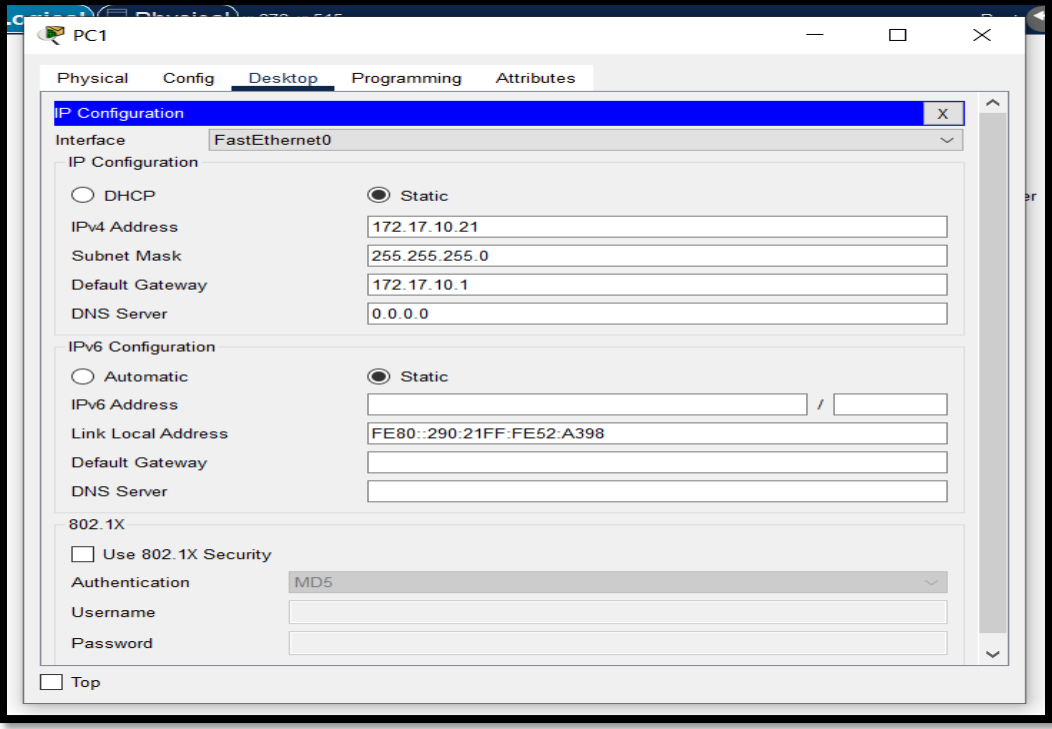
```
20   Students                        active
30   Guests                          active
99   VLAN0099                        active
1002 fddi-default                    active
1003 token-ring-default              active
1004 fddinet-default                 active
1005 trnet-default                   active
S2#config term
Enter configuration commands, one per line.  End with CNTL/Z.
S2(config)#interface range fa0/6-10
S2(config-if-range)#switchport access vlan 30
S2(config-if-range)#interface range fa0/11-17
S2(config-if-range)#switchport access vlan 10
S2(config-if-range)#interface range fa0/18-24
S2(config-if-range)#switchport access vlan 20
S2(config-if-range)#end
S2#
%SYS-5-CONFIG_I: Configured from console by console

S2#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
S2#config term
Enter configuration commands, one per line.  End with CNTL/Z.
S2(config)#interface range fa0/1-5
S2(config-if-range)#switchport mode trunk
```

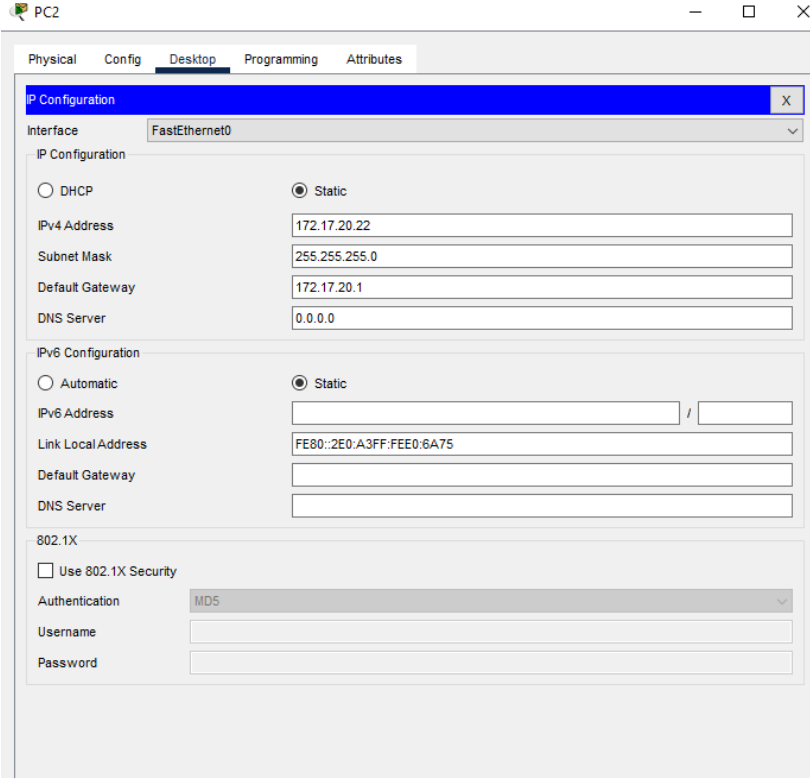**Task 2: Configure the Ethernet Interfaces on the Host PCs**

PC1:

PC2:

PC3:

Task 3: Configure VTP on the Switches

Step 1. Enable the user ports on S2 in access mode.

```
S2#config term
Enter configuration commands, one per line.  End with CNTL/Z.
S2(config)#interface fa0/6
S2(config-if)#switchport mode access
S2(config-if)#no shutdown
S2(config-if)#interface fa0/11
S2(config-if)#switchport mode access
S2(config-if)#no shutdown
S2(config-if)#interface fa0/18
S2(config-if)#switchport mode access
S2(config-if)#no shutdown
S2(config-if)#
```

Step 2. Configure VTP

```
S1#config term
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)#vtp mode server
Device mode already VTP SERVER.
S1(config)#vtp domain Lab6
Changing VTP domain name from NULL to Lab6
S1(config)#
%LINK-5-CHANGED: Interface Vlan99, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan99, changed state to up

S1(config)#vtp domain Lab6
Domain name already set to Lab6.
S1(config)#vtp password cisco
Setting device VLAN database password to cisco
S1(config)#end
S1#
%SYS-5-CONFIG_I: Configured from console by console
```

```
S2(config-if)#exit
S2(config)#vtp mode client
Setting device to VTP CLIENT mode.
S2(config)#vtp domain Lab6
Domain name already set to Lab6.
S2(config)#vtp password cisco
Setting device VLAN database password to cisco
S2(config)#end
S2#
%SYS-5-CONFIG_I: Configured from console by console
```

```
S3(config)#vtp mode client
Device mode already VTP CLIENT.
S3(config)#vtp domain Lab6
Domain name already set to Lab6.
S3(config)#vtp password cisco
Setting device VLAN database password to cisco
S3(config)#end
S3#
%SYS-5-CONFIG_I: Configured from console by console
```

Step 3. Configure trunking ports and designate the native VLAN for the trunks.

```
S1#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)#interface fa0/1
S1(config-if)#switchport mode trunk
S1(config-if)#switchport trunk native vlan 99
S1(config-if)#no shutdown
S1(config-if)#end
S1#
%SYS-5-CONFIG_I: Configured from console by console
```

```
S2(config)#interface fa0/1
S2(config-if)#switchport mode trunk
S2(config-if)#switchport trunk native vlan 99
S2(config-if)#no shutdown
S2(config-if)#end
S2#
%SYS-5-CONFIG_I: Configured from console by console
```

```
S3(config)#interface fa0/1
S3(config-if)#switchport mode trunk
S3(config-if)#switchport trunk native vlan 99
S3(config-if)#no %SPANTREE-2-UNBLOCK_CONSIST_PORT: Unblocking FastEthernet0/1
on VLAN0099. Port consistency restored.

%SPANTREE-2-UNBLOCK_CONSIST_PORT: Unblocking FastEthernet0/1 on VLAN0001.
Port consistency restored.

% Incomplete command.
S3(config-if)#no shutdown
S3(config-if)#
```

Step 4. Configure the VTP server with VLANs

```
S1(config)#vlan 99
S1(config-vlan)#name management
S1(config-vlan)#vlan 10
S1(config-vlan)#name faculty/staff
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on
FastEthernet0/2 (1), with S2 FastEthernet0/1 (99).

S1(config-vlan)#vlan 10
S1(config-vlan)#name faculty/staff
S1(config-vlan)#vlan 20
S1(config-vlan)#name students
S1(config-vlan)#vlan 30
S1(config-vlan)#name guests
S1(config-vlan)#end
S1#
%SYS-5-CONFIG_I: Configured from console by console
```

Step 5. Verify that the VLANs created on S1 have been distributed to S2 and S3

```
S3#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- 
------------------------------
1    default                          active    Fa0/3, Fa0/4, Fa0/5, Fa0/6
                                                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   faculty/staff                    active
20   students                         active
30   guests                           active
99   management                       active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
S3#
```

```
S2#show vlan brief

VLAN Name                             Status    Ports
---- ------------------------------- ---------
--------------------------------
1    default                         active    Fa0/5, Gig0/1, Gig0/2
10   faculty/staff                   active    Fa0/11, Fa0/12, Fa0/13,
Fa0/14
                                               Fa0/15, Fa0/16, Fa0/17
20   students                        active    Fa0/18, Fa0/19, Fa0/20,
Fa0/21
                                               Fa0/22, Fa0/23, Fa0/24
30   guests                          active    Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                               Fa0/10
99   management                      active
1002 fddi-default                    active
1003 token-ring-default              active
1004 fddinet-default                 active
1005 trnet-default                   active
S2#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on
FastEthernet0/1 (99), with S1 FastEthernet0/2 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on
FastEthernet0/4 (99), with S3 FastEthernet0/2 (1).
```

Step 6. Configure the management interface address on all three switches.

```
S2(config)#interface vlan 99
S2(config-if)#ip address 172.17.99.12 255.255.255.0
S2(config-if)#
```

```
S3(config)#interface vlan99
S3(config-if)#address 172.17.99.13 255.255.255.0
                     ^
% Invalid input detected at '^' marker.

S3(config-if)#ip address 172.17.99.13 255.255.255.0
```

```
S1(config)#interface vlan99
S1(config-if)#ip address 172.17.99.11 255.255.255.0
S1(config-if)#
```

The ping was successful.

```
S1#ping 172.17.99.12

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.17.99.12, timeout is 2 seconds:
..!!!
Success rate is 60 percent (3/5), round-trip min/avg/max = 0/3/10 ms

S1#ping 172.17.99.13

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.17.99.13, timeout is 2 seconds:
!!.!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/24/67 ms
```

Step 7. Assign switch ports to VLANs on S2

```
S2(config)#interface fa0/6
S2(config-if)#switchport access vlan 30
S2(config-if)#interface fa0/11
S2(config-if)#switchport access vlan 10
S2(config-if)#interface fa0/18
S2(config-if)#switchport access vlan 20
S2(config-if)#end
S2#
%SYS-5-CONFIG_I: Configured from console by console

S2#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
S2#
```

Step 8. Check connectivity between VLANs.

```
Pinging 172.17.30.21 with 32 bytes of data:

Request timed out.

Ping statistics for 172.17.30.21:
    Packets: Sent = 1, Received = 0, Lost = 1 (100% loss),
```

```
C:\>ping 172.17.30.23

Pinging 172.17.30.23 with 32 bytes of data:

Request timed out.

Ping statistics for 172.17.30.23:
    Packets: Sent = 2, Received = 0, Lost = 2 (100% loss),
```

```
C:\>ping 172.17.20.22

Pinging 172.17.20.22 with 32 bytes of data:

Request timed out.
Request timed out.

Ping statistics for 172.17.20.22:
    Packets: Sent = 3, Received = 0, Lost = 3 (100% loss),
```

Pings were not successful.

Task 4: Configure the Router and the Remote Server LAN

Step 1. Create a basic configuration on the router.

```
Router>enable
Router#config terminal
Enter configuration commands, one per line.   End with CNTL/Z.
Router(config)#hostname R1
R1(config)#no ip domain-lookup
R1(config)#enable secret class
R1(config)#line console 0
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#line vty 0 15
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#
```

Step 2. Configure the trunking interface on R1.

```
R1(config)#interface fastethernet 0/0
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

R1(config-if)#interface fastethernet 0/0.1
R1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up

R1(config-subif)#encapsulation dotlq 1
                                      ^
% Invalid input detected at '^' marker.

R1(config-subif)#encapsulation dotlq 1
R1(config-subif)#ip address 172.17.1.1 255.255.255.0
R1(config-subif)#interface fastethernet 0/0.10
R1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.10, changed state to up

R1(config-subif)#encapsulation dotlq 10
R1(config-subif)#ip address 172.17.10.1 255.255.255.0
R1(config-subif)#interface fastethernet 0/0.20
R1(config-subif)#|
%LINK-5-CHANGED: Interface FastEthernet0/0.20, changed state to up

R1(config-subif)#encapsulation dotlq 20
R1(config-subif)#ip address 172.17.20.1 255.255.255.0
R1(config-subif)#interface fastethernet 0/0.30
R1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.30, changed state to up

R1(config-subif)#encapsulation dotlq 30
R1(config-subif)#ip address 172.17.30.1 255.255.255.0
R1(config-subif)#interface fastethernet 0/0.99
R1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.99, changed state to up

R1(config-subif)#encapsulation dotlq 99 native
R1(config-subif)#ip address 172.17.99.1 255.255.255.0
R1(config-subif)#
```

Step 3. Configure the server LAN interface on R1.

```
R1(config)#interface Fastethernet0/1
R1(config-if)#ip address 172.17.50.1 255.255.255.0
R1(config-if)#description server interface
R1(config-if)#no shutdown
```