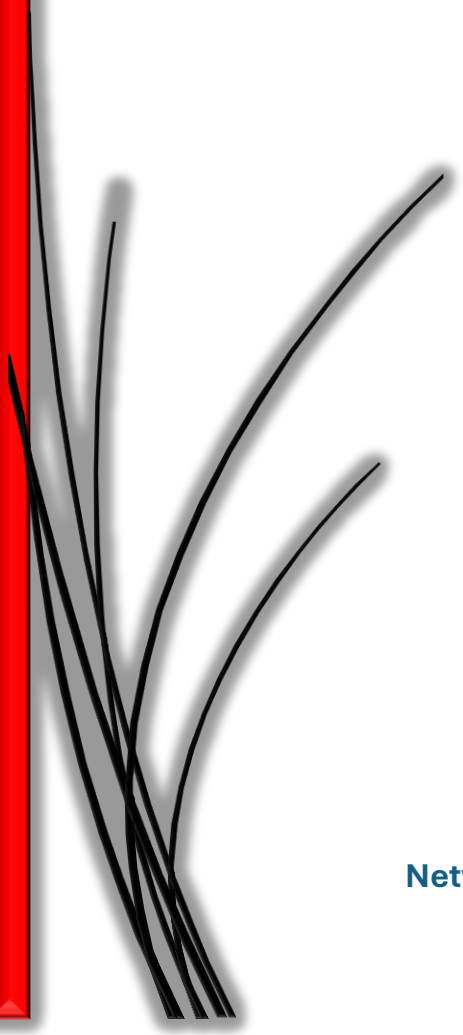
LABs

Protocol VTP

Networking



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Protocol VTP

- VTP [VLAN Trunk Protocol]

is a protocol developed by Cisco that is used to manage, create, update, and delete VLANs (Virtual Local Area Networks) across a network through switches.

- What is the idea of working the VTP protocol in Switches?

If we have more than one switch device within the network and we want to create VLANs in each switch, then instead of applying the settings for creating VLANs in each switch only, we apply them in one switch and activate the VTP protocol, and thus these networks will be created automatically on the rest of the switches (it copies these networks via the trunk port to the rest of the other switches).

- What is VTP mode: There are three types of VTP protocol that the switch depends on, which are as follows:

1. **Server Mode** It is the main switch that controls the management of switches, VLAN management, and sending updates and databases to all other switches connected to it.

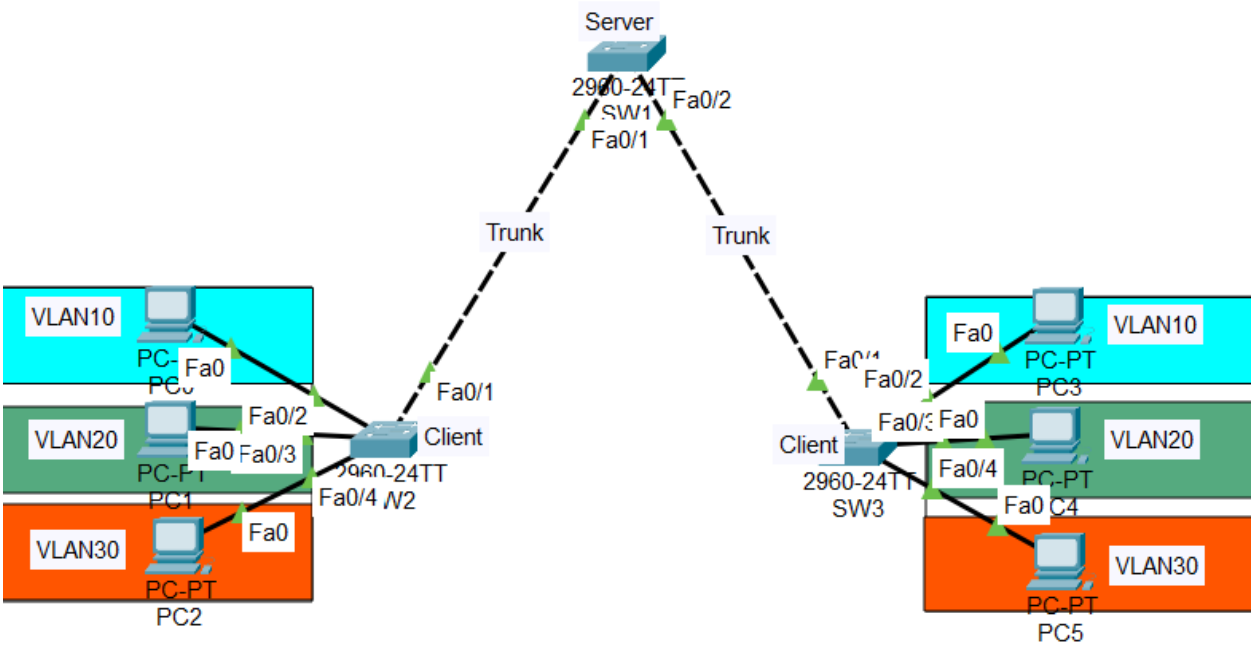
2. **Client Mode** It is a sub-switch that can only receive traffic. It cannot manage the network and cannot create a VLAN.

3. **Transparent Mode** Switches in this mode do not participate in VTP but can forward VTP advertisements through trunk links. VLANs created, modified, or deleted on a switch in transparent mode only affect that specific switch.

VTP pruning is a feature that reduces unnecessary VLAN traffic. When enabled, VTP pruning ensures that VLAN traffic is only sent to switches that require it, reducing bandwidth usage and improving network performance.

VTP domain is a collection of switches that share the same VTP domain name. Switches within the same VTP domain share VLAN information.

LAB1



Configurations VTP and Trunking and Create VLANs.

SW1

```
switch-server(config)#
switch-server(config)#int range fa0/1-2
switch-server(config-if-range)#switchport mode trunk

switch-server(config)#vtp domain ahmed
switch-server(config)#vtp password 1234
switch-server(config)#vtp mode server

switch-server(config)#vlan 10
switch-server(config-vlan)#name HR
switch-server(config)#vlan 20
switch-server(config-vlan)#name PR
switch-server(config)#vlan 30
switch-server(config-vlan)#name IT
switch-server(config-vlan)#
```

SW2

```
switch-client(config)#
switch-client(config)#vtp domain ahmed
switch-client(config)#vtp password 1234
switch-client(config)#vtp mode client
switch-client#show vlan
```

```
switch-client#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/2, 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   HR                               active
20   PR                               active
30   IT                               active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

SW3

```
switch-client(config)#
switch-client(config)#vtp domain ahmed
switch-client(config)#vtp password 1234
switch-client(config)#vtp mode client
switch-client#show vlan
```

```
switch-client#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/2, 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   HR                               active
20   PR                               active
30   IT                               active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

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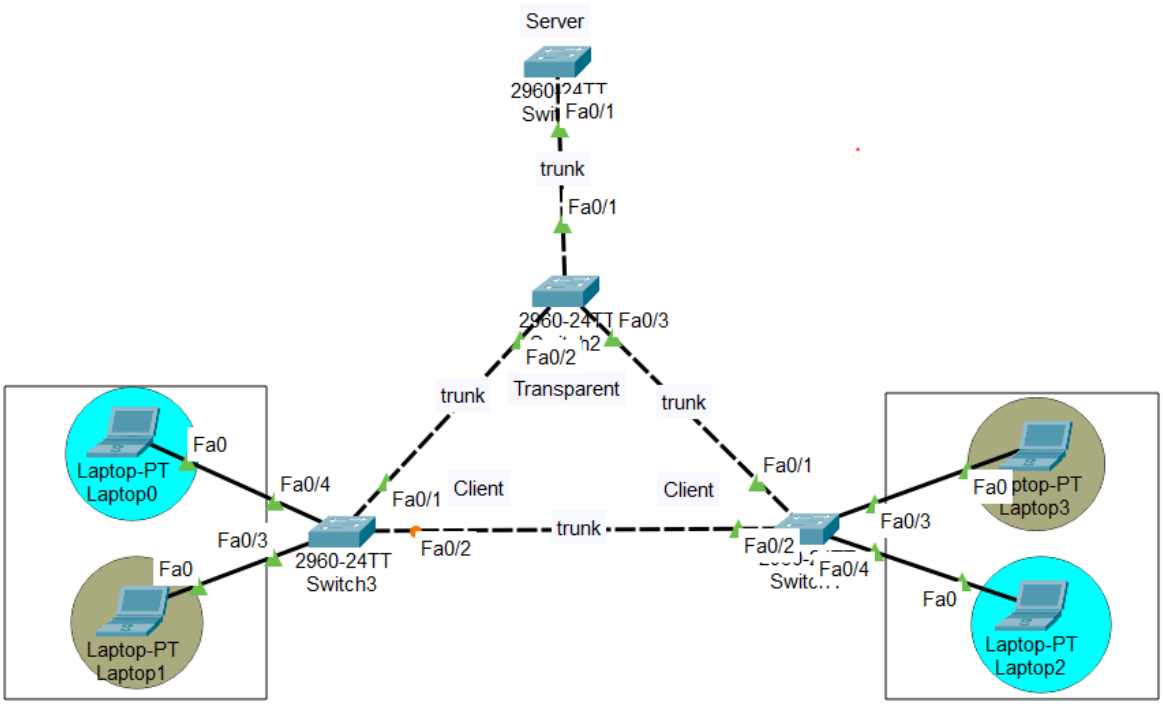
LAB2



SW1
switch-server(config)# switch-server(config)#int f0/1 switch-server(config-if)#switchport mode trunk switch-server(config)#vtp domain ahmed switch-server(config)#vtp password 1234 switch-server(config)#vtp mode server switch-server(config)#
SW2
switch-transparent(config)# switch-transparent(config)#int range fa0/1-2 switch-transparent(config-if-range)#switch mode trunk switch-transparent(config)#vtp domain ahmed switch-transparent(config)#vtp password 1234 switch-transparent(config)#vtp mode transparent switch-transparent(config)#

SW3

```
Client1(config)#
Client1(config)#int range fa0/1-2
Client1(config-if-range)#switch mode trunk

Client1(config)#vtp domain ahmed
Client1(config)#vtp password 1234
Client1(config)#vtp mode client
Client1(config)#
```

SW4

```
Client2(config)#
Client2(config)#int range fa0/1-2
Client2(config-if-range)#switch mode trunk

Client2(config)#vtp domain ahmed
Client2(config)#vtp password 1234
Client2(config)#vtp mode client
Client2(config)#
```

- **Create VLANs in switch-server and show VLANs in switches.**

```
switch-server(config)#
switch-server(config)#vlan 10
switch-server(config-vlan)#name HR
switch-server(config)#vlan 20
switch-server(config-vlan)#name PR
switch-server(config)#vlan 30
switch-server(config-vlan)#name IT
switch-server(config)#
```

```
switch-server#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/2, 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   HR                               active
20   PR                               active
30   IT                               active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

```
switch-transparent#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    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
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

```
Client1#
Client1#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/2, 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   HR                               active
20   PR                               active
30   IT                               active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

```
Client2#
Client2#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/2, 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   HR                               active
20   PR                               active
30   IT                               active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

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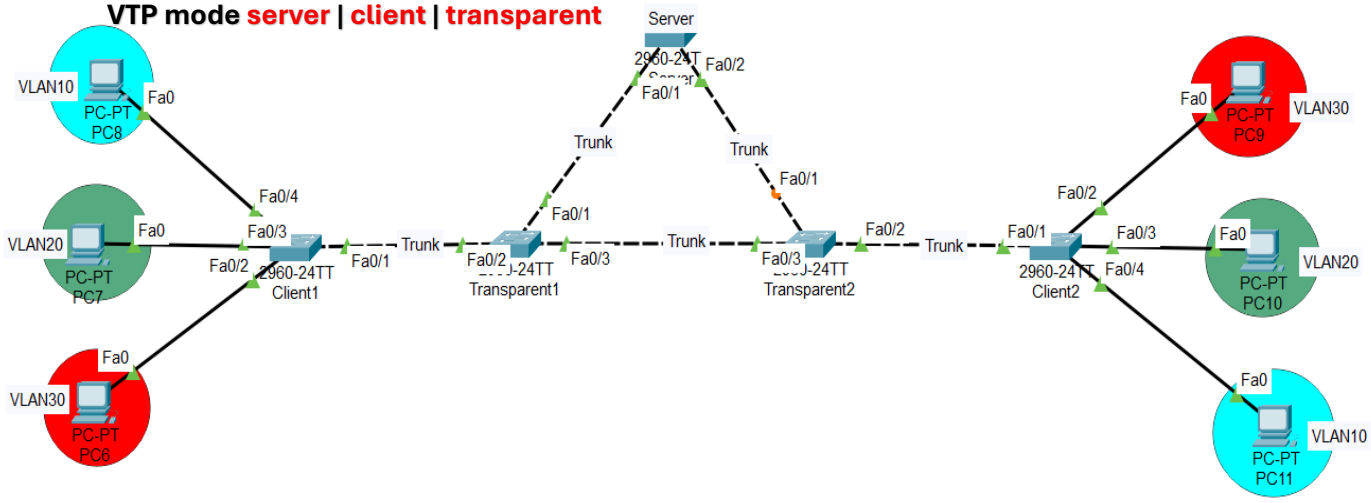
LAB3

VTP domain Allam.com

VTP password ahmed1234

VTP mode server | client | transparent

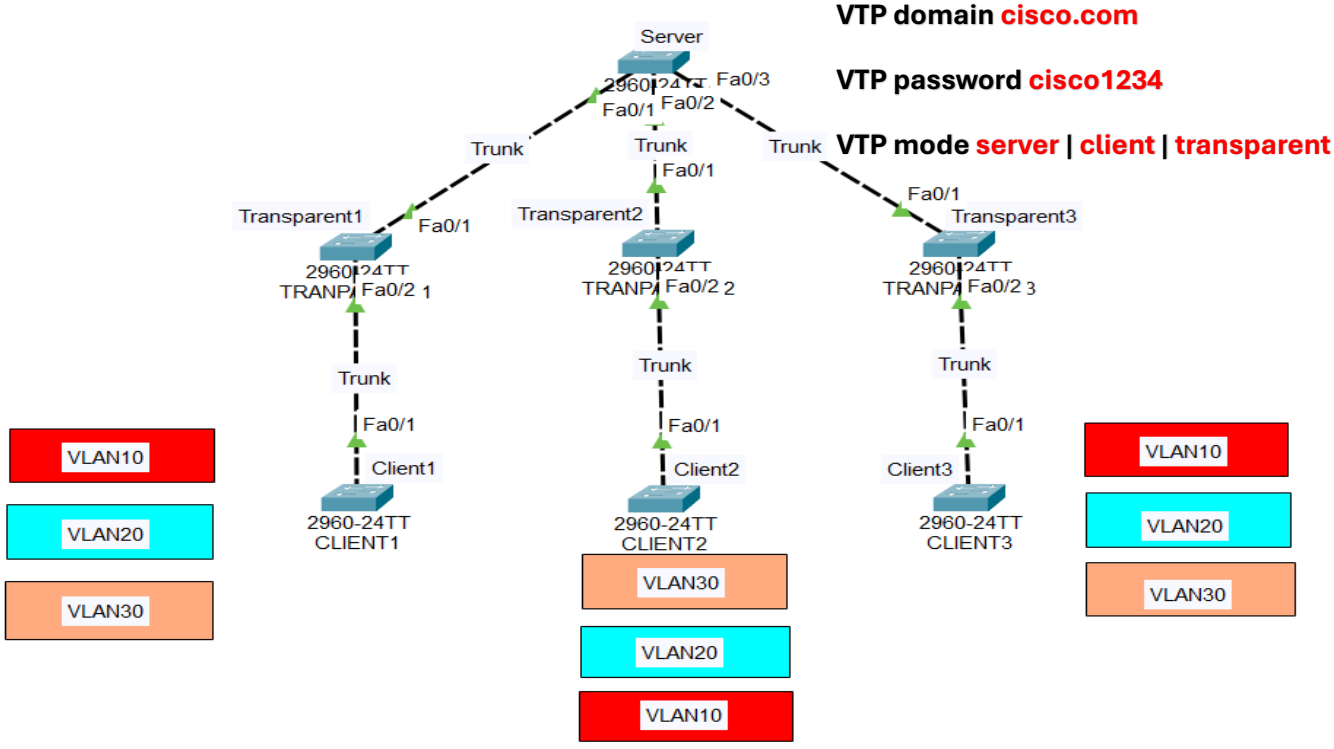


LAB4

VTP domain cisco.com

VTP password cisco1234

VTP mode server | client | transparent



Thanks