Implement VTP

**LAN Switching and Wireless – Chapter 4**

Objectives

- Explain the role of VTP in a converged switched network

- Describe the operation of VTP: VTP domains, VTP Modes, VTP Advertisements, and VTP Pruning.

- Configure VTP on the switches in a converged network.

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Explain the Role of VTP in a Converged Switched Network
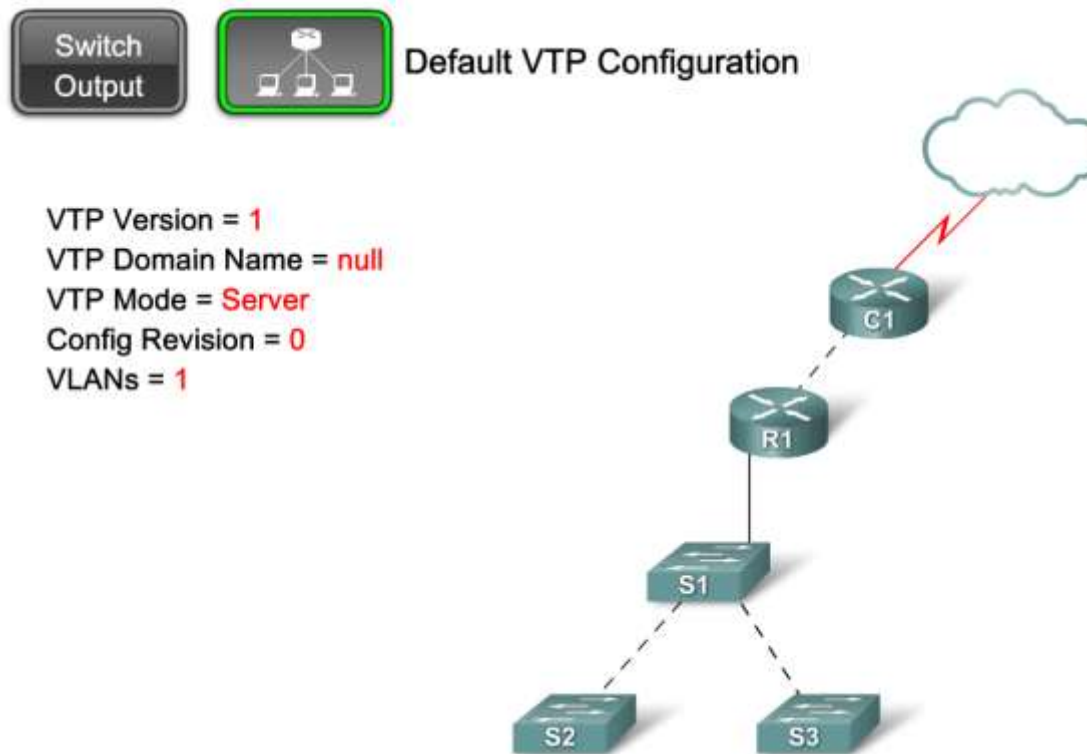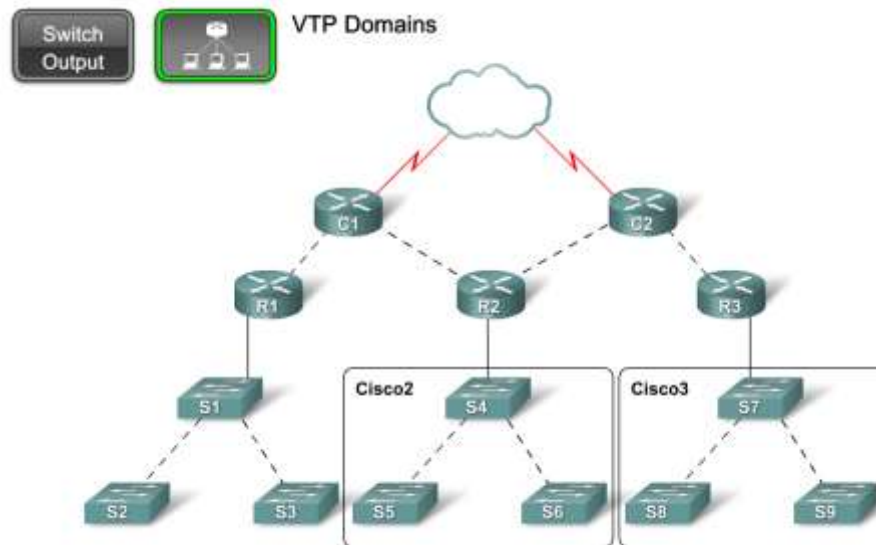
- Explain the role of VTP in a multi-switch network

What is VTP?
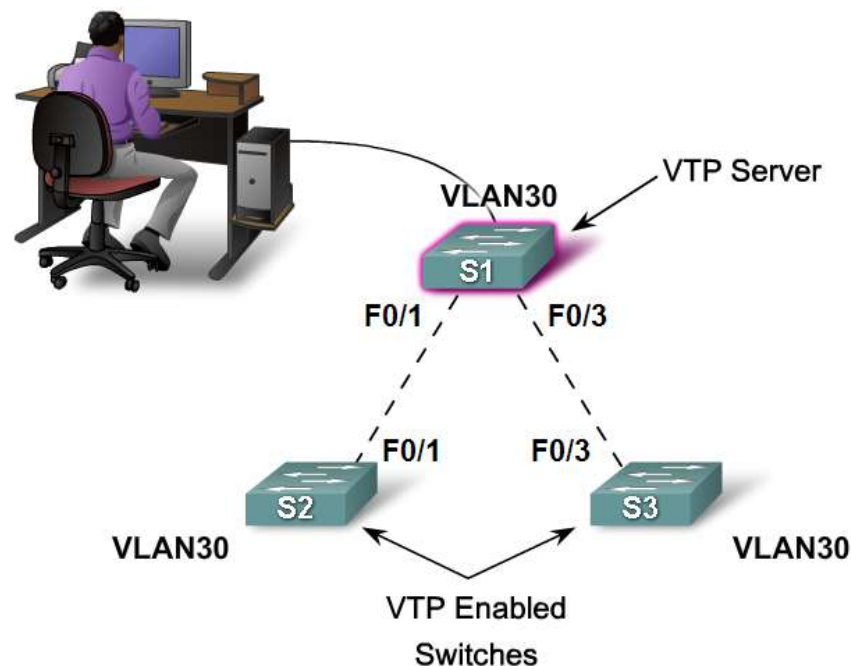
Describe the Operation of VTP

- Describe the importance of the default VTP configuration

Switch Output

Default VTP Configuration

VTP Version = 1
VTP Domain Name = null
VTP Mode = Server
Config Revision = 0
VLANs = 1

Describe the Operation of VTP

- Explain the role of domains in VTP

Describe the Operation of VTP

- Describe how VTP exchanges domain and VLAN information between switches in the same VTP domain

VTP Advertisements
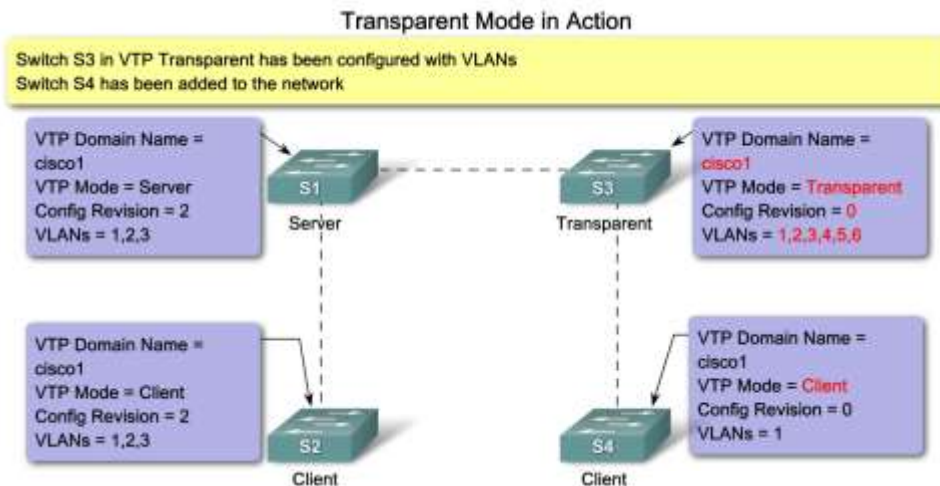
Summary advertisements:
- Are sent every 5 minutes by a VTP Server
- Inform VTP enabled switches of the current VTP configuration revision number
- Are sent immediately after a configuration change
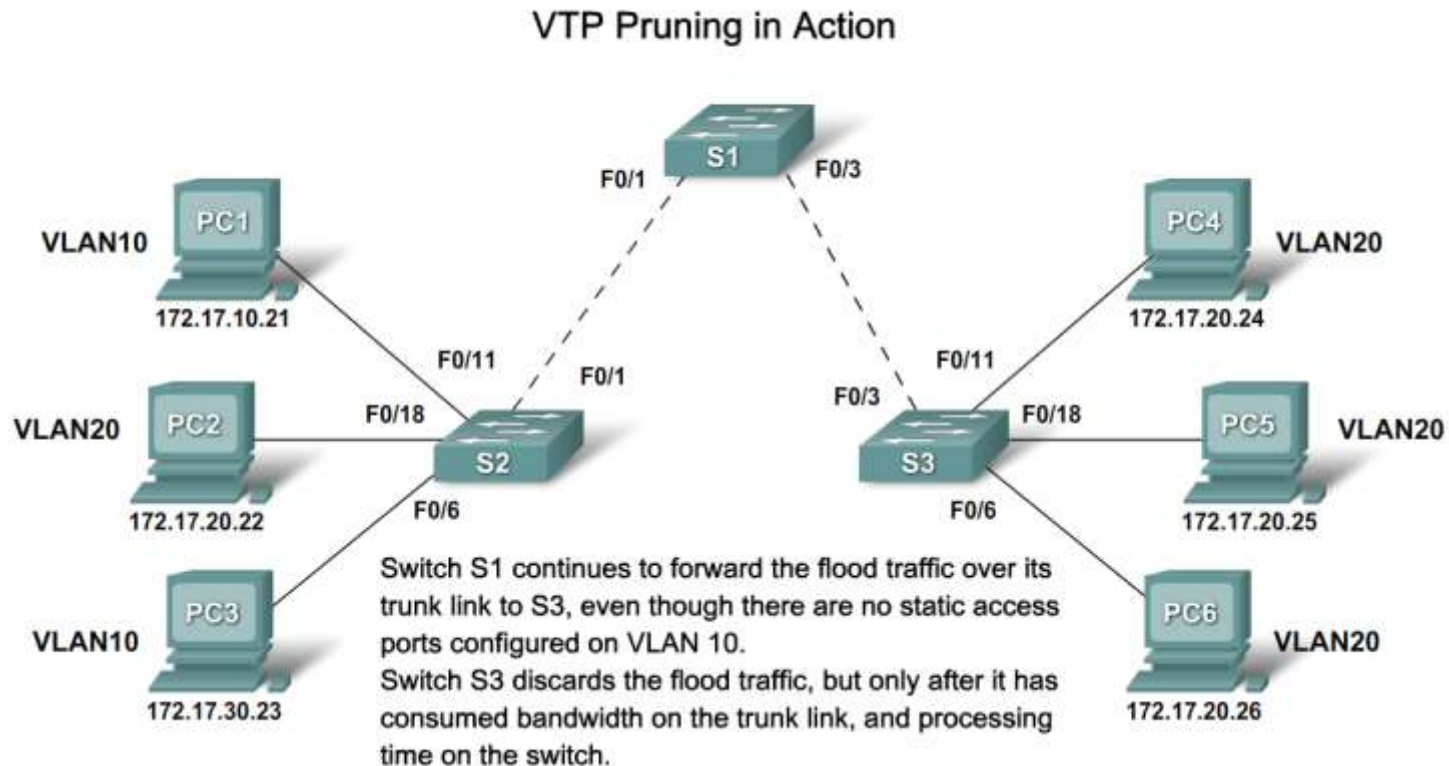
S1
Server

S2
Client
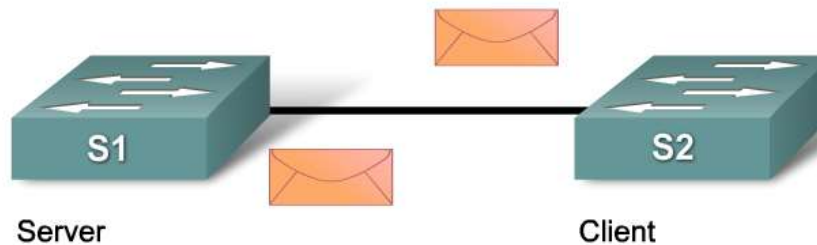
Describe the Operation of VTP

- Describe the role VTP modes play in enabling VTP to distribute and synchronize domain and VLAN configuration information in a network

Transparent Mode in Action

Switch S3 in VTP Transparent has been configured with VLANs
Switch S4 has been added to the network

VTP Domain Name = cisco1
VTP Mode = Server
Config Revision = 2
VLANs = 1,2,3

S1 — Server

VTP Domain Name = cisco1
VTP Mode = Transparent
Config Revision = 0
VLANs = 1,2,3,4,5,6

S3 — Transparent

VTP Domain Name = cisco1
VTP Mode = Client
Config Revision = 2
VLANs = 1,2,3

S2 — Client

VTP Domain Name = cisco1
VTP Mode = Client
Config Revision = 0
VLANs = 1

S4 — Client

VTP Modes

	VTP Server	VTP Client	VTP Transparent
Description	Manage Domain and VLAN configurations	Updates VTP configurations VTP client switches cannot change VLAN configurations.	Able to manage local VLAN configurations. Local VLAN configurations not shared with VTP network
Respond to VTP advertisements?	Participates fully	Participates fully	Only Forwards VTP advertisements
Global VLAN configuration preserved on restart?	Yes, global configurations stored in NVRAM	No, global configurations stored in RAM, not in NVRAM	No, local VLAN configuration only is stored in NVRAM
Update other VTP enabled switches?	Yes	Yes	No

Describe the Operation of VTP
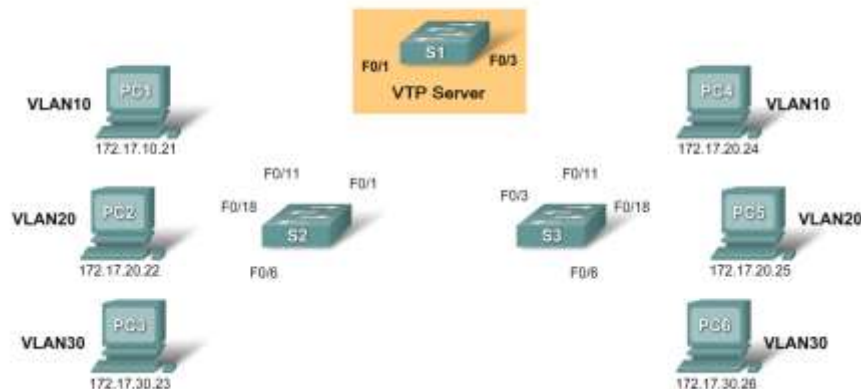
- Explain how VTP pruning functions

VTP Pruning in Action

Switch S1 continues to forward the flood traffic over its trunk link to S3, even though there are no static access ports configured on VLAN 10.
Switch S3 discards the flood traffic, but only after it has consumed bandwidth on the trunk link, and processing time on the switch.

Configure VTP on the Switches in a Converged Network

- Configure VTP on a Cisco Catalyst Switch

Configure VTP on the Switches in a Converged Network

- Identify and troubleshoot common VTP configuration problems
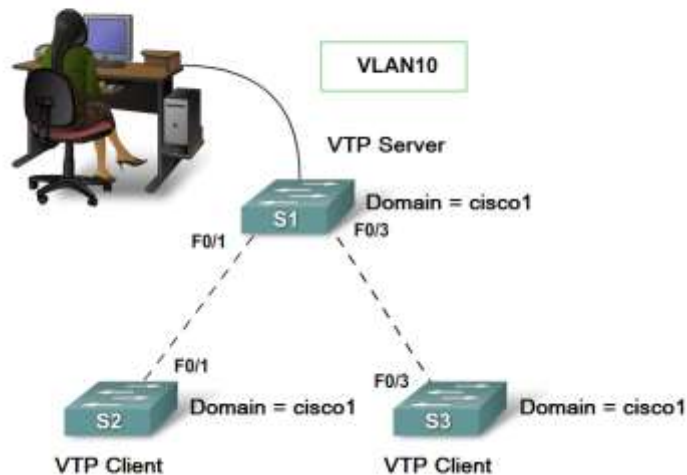
Common VTP Configuration Issues

- Incompatible VTP Versions
- VTP Password Issues
- Incorrect VTP Mode Name
- All Switches set to VTP Client Mode

Configure VTP on the Switches in a Converged Network

- Manage VLANs on a VTP enabled network

Managing VLANs on a VTP Server

VLAN10

VTP Server

Domain = cisco1

S1

F0/1   F0/3

F0/1

S2

Domain = cisco1

VTP Client

F0/3

S3

Domain = cisco1

VTP Client

```
S1>enable
Password:
S1#configure terminal
Enterr configuration commands, one per line. End with CNTL/Z.
S1(config)#vlan 10
S1(config)#name faculty
S1(config)#exit
S1(config)#interface FastEthernet 0/11
S1(config-if)#switchport access vlan 10
S1(config-if)#exit
S1(config)#exit
S1#
```

Summary

- VTP is a Cisco proprietary protocol used to exchange VLAN information across trunk links.

- A switch can be in one of 3 VTP operating modes

    Client

      Cannot create, modify or delete VLAN

    Server

      Can create, modify & delete VLAN

    Transparent

      Can create, modify, & delete LOCAL VLAN

      Forwards VTP advertisements.

Summary

- VTP pruning

    Limits unnecessary dissemination of VLAN information.

- Verify VTP configuration

    Show VTP status

    Show interfaces trunk

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