Configuring VTP

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Information About VTP

VTP is supported for VTP version 1 and 2.

Note You can configure VLANs without actually creating the VLANs. For more details, see Configuring a VLAN Before Creating the VLAN.

VTP

VTP is a Layer 2 messaging protocol that maintains VLAN consistency by managing the addition, deletion, and renaming of VLANs within a VTP domain. A VTP domain is made up of one or more network devices that share the same VTP domain name and that are connected with trunk interfaces. Each network device can be in only one VTP domain.

Layer 2 trunk interfaces, Layer 2 port channels, and virtual port channels (vPCs) support VTP functionality.

The VTP is disabled by default on the device. You can enable and configure VTP using the command-line interface (CLI). When VTP is disabled, the device does not relay any VTP protocol packets.

Note VTP worked only in transparent mode in the Cisco Nexus 9000 Series devices, allowing you to extend a VTP domain across the device.

When the device is in the VTP transparent mode, the device relays all VTP protocol packets that it receives on a trunk port to all other trunk ports. When you create or modify a VLAN that is in VTP transparent mode, those VLAN changes affect only the local device. A VTP transparent network device does not advertise its VLAN configuration and does not synchronize its VLAN configuration based on received advertisements.

Note VLAN 1 is required on all trunk ports used for switch interconnects if VTP is supported in the network. Disabling VLAN 1 from any of these ports prevents VTP from functioning properly.

VTP Overview

VTP allows each router or LAN device to transmit advertisements in frames on its trunk ports. These frames are sent to a multicast address where they can be received by all neighboring devices. They are not forwarded by normal bridging procedures. An advertisement lists the sending device's VTP management domain, its configuration revision number, the VLANs which it knows about, and certain parameters for each known VLAN. By hearing these advertisements, all devices in the same management domain learn about any new VLANs that are configured in the transmitting device. This process allows you to create and configure a new VLAN only on one device in the management domain, and then that information is automatically learned by all the other devices in the same management domain.

Once a device learns about a VLAN, the device receives all frames on that VLAN from any trunk port by default, and if appropriate, forwards them to each of its other trunk ports, if any. This process prevents unnecessary VLAN traffic from being sent to a device.

VTP also publishes information about the domain and the mode in a shared local database that can be read by other processes such as Cisco Discovery Protocol (CDP).

VTP Modes

VTP is supported in these modes:

- Transparent—Allows you to relay all VTP protocol packets that it receives on a trunk port to all other trunk ports. When you create or modify a VLAN that is in VTP transparent mode, those VLAN changes affect only the local device. A VTP transparent network device does not advertise its VLAN configuration and does not synchronize its VLAN configuration based on received advertisements.

If VTP is in transparent mode, you can configure VLAN long names of up to 128 characters.

VTP Per Interface

VTP allows you to enable or disable the VTP protocol on a per-port basis to control the VTP traffic. When a trunk is connected to a switch or end device, it drops incoming VTP packets and prevents VTP advertisements on this particular trunk. By default, VTP is enabled on all the switch ports.

Guidelines and Limitations for Configuring VTP

VTP has the following configuration guidelines and limitations:

- **show** commands with the **internal** keyword are not supported.
- In SNMP, the vlanTrunkPortVtpEnabled object indicates whether the VTP feature is enabled or not. The status of the vlanTrunkPortVtpEnabled object aligns with the output of the **show vtp trunk interface eth a/b** command.

- VTP advertisements are not sent out on Cisco Nexus Fabric Extender ports.
- VTP pruning is not possible with transparent devices. When there are transparent devices in a VTP domain, VTP pruning has to be disabled. If VTP pruning is not disabled on the neighboring devices, the Cisco Nexus devices will not learn any MACs from the neighboring device because the VLANs are pruned/disabled on the links pointing to the Nexus.

Default Settings

This table lists the default settings for VTP parameters.

Table 1: Default VTP Parameters

Parameters	Default
VTP	Disabled
VTP Mode	Transparent
VTP Domain	blank
VTP Version	1
VTP per Interface	Enabled

Configuring VTP

You can configure VTP on Cisco Nexus 9000 devices.

Note VLAN 1 is required on all trunk ports used for switch interconnects if VTP is used in transparent mode in the network. Disabling VLAN 1 from any of these ports prevents VTP from functioning properly in transparent mode.

Note VTP worked only in transparent mode.

SUMMARY STEPS

1. **config t**
2. **feature vtp**
3. **vtp domain** *domain-name*
4. **vtp version** {**1** | **2**}
5. **vtp file** *file-name*
6. **vtp password** *password-value*

7. **exit**
8. (Optional) **show vtp status**
9. (Optional) **show vtp counters**
10. (Optional) **show vtp interface**
11. (Optional) **show vtp password**
12. (Optional) **copy running-config startup-config**

DETAILED STEPS

Procedure

	Command or Action	Purpose

Step 1	**config t**
	Example:
	`switch# config t`
	`switch(config)#`
		Enters configuration mode.

Step 2	**feature vtp**
	Example:
	`switch(config)# feature vtp`
	`switch(config)#`
		Enables VTP on the device. The default is disabled.

Step 3	**vtp domain** *domain-name* **Example:** `switch(config)# vtp domain accounting`	Specifies the name of the VTP domain that you want this device to join. The default is blank.
Step 4	**vtp version** {**1** | **2**} **Example:** `switch(config)# vtp version 2`	Sets the VTP version that you want to use. The default is version 1.
Step 5	**vtp file** *file-name* **Example:** `switch(config)# vtp file vtp.dat`	Specifies the ASCII filename of the IFS file system file where the VTP configuration is stored.
Step 6	**vtp password** *password-value* **Example:** `switch(config)# vtp password cisco`	Specifies the password for the VTP administrative domain.

Step 7	**exit**
	Example:
	`switch(config)# exit`
	`switch#`
		Exits the configuration submode.

Step 8	(Optional) **show vtp status** **Example:** `switch# show vtp status`	Displays information about the VTP configuration on the device, such as the version, mode, and revision number.

	Command or Action	Purpose
Step 9	(Optional) **show vtp counters** **Example:** `switch# show vtp counters`	Displays information about VTP advertisement statistics on the device.
Step 10	(Optional) **show vtp interface** **Example:** `switch# show vtp interface`	Displays the list of VTP-enabled interfaces.
Step 11	(Optional) **show vtp password** **Example:** `switch# show vtp password`	Displays the password for the management VTP domain.
Step 12	(Optional) **copy running-config startup-config** **Example:** `switch(config)# copy running-config startup-config`	Copies the running configuration to the startup configuration.