

Introduction to VTP (VLAN Trunking Protocol)

VTP

- ▶ VTP is CISCO proprietary protocol used to maintain consistency throughout the network or user can say that synchronizing the VLAN information in same VTP domain.
- ▶ In order to make VTP work you need to setup a VTP domain name which is something you can just make up, as long as you configure it to be the same on all your switches
- ▶ VTP allows you to add, delete and rename VLANs which is then propagated to other switches in the VTP domain.

Requirements

► Switch#sh vtp status

1. a switch has to be configured as either a VTP server or VTP client
2. the VTP domain name has to be the same on both switches
3. if present, the VTP domain password has to be the same
4. VTP versions have to match
5. the link between the switches has to be a **trunk** link

```
Switch>ena
Switch#sh vtp st
VTP Version           : 2
Configuration Revision : 0
Maximum VLANs supported locally : 255
Number of existing VLANs : 5
VTP Operating Mode     : Server
VTP Domain Name        :
VTP Pruning Mode       : Disabled
VTP V2 Mode            : Disabled
VTP Traps Generation   : Disabled
MD5 digest             : 0x7D 0x5A 0xA6 0x0E 0x9A 0x72 0xA0 0x3A
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Local updater ID is 0.0.0.0 (no valid interface found)
Switch#
```

VTP modes

1. Server -

- ▶ The switches are set to this mode by default.
- ▶ This mode allows you to create, add and delete VLANs.
- ▶ The changes you want to make should be done in this mode. Any changes that is done on this mode (on a particular switch) will be advertised to all the switches that are in same VTP domain.

▶ Configuration

1. make the switch VTP server

- ▶ Switch# config terminal
- ▶ Switch(config)#vtp mode server

2. make a VTP domain assign a password for authentication.

- ▶ Switch(config)#vtp domain test
- ▶ Switch(config)#vtp password 12345
- ▶

```
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vt
Switch(config)#vtp do
Switch(config)#vtp domain test
Changing VTP domain name from NULL to test
Switch(config)#
```

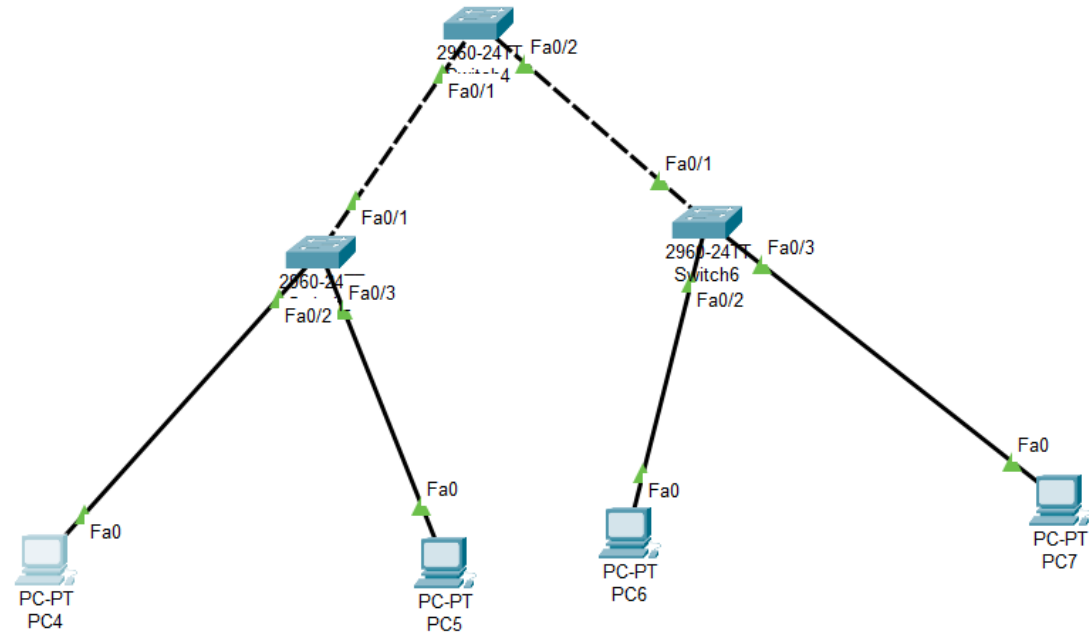
VTP modes

2. **Client** - In this mode, the switches receives the updates and can also forward the updates to other switches(which are in same VTP domain).
 - ▶ The updates received here is not saved in NVRAM so all the configuration will be deleted if the switch is reset or reloaded i.e the switches will only learn and pass the VTP summary advertisements to the other switches.
 - ▶ **Configuration** - As the switches are set to server mode by default, therefore user can change it to client mode by:
 - ▶ Switch(config)#vtp mode client

VTP modes

	VTP Server	VTP Client	VTP Transparent
Create/Modify/Delete VLANs	Yes	No	Only local
Synchronizes itself	Yes	Yes	No
Forwards advertisements	Yes	Yes	Yes

VTP Example



Configuration

- ▶ **Main switch (top one)**
- ▶ Switch#show vtp stat
- ▶ Switch(config)#vtp mode server
- ▶ Switch(config)#vtp domain test
- ▶ Switch(config)#vtp password 12345
- ▶ Switch(config)#int range f0/1-2
- ▶ Switch(config-if-range)#switchport mode trunk

```
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vtp dom
Switch(config)#vtp domain test
Changing VTP domain name from NULL to test
Switch(config)#vtp pas
Switch(config)#vtp password 12345
Setting device VLAN database password to 12345
Switch(config)#int ra
Switch(config)#int range f0/1-2
Switch(config-if-range)#sw
Switch(config-if-range)#switchport mode tr
Switch(config-if-range)#switchport mode trunk
```


Configuration

▶ Switch 2

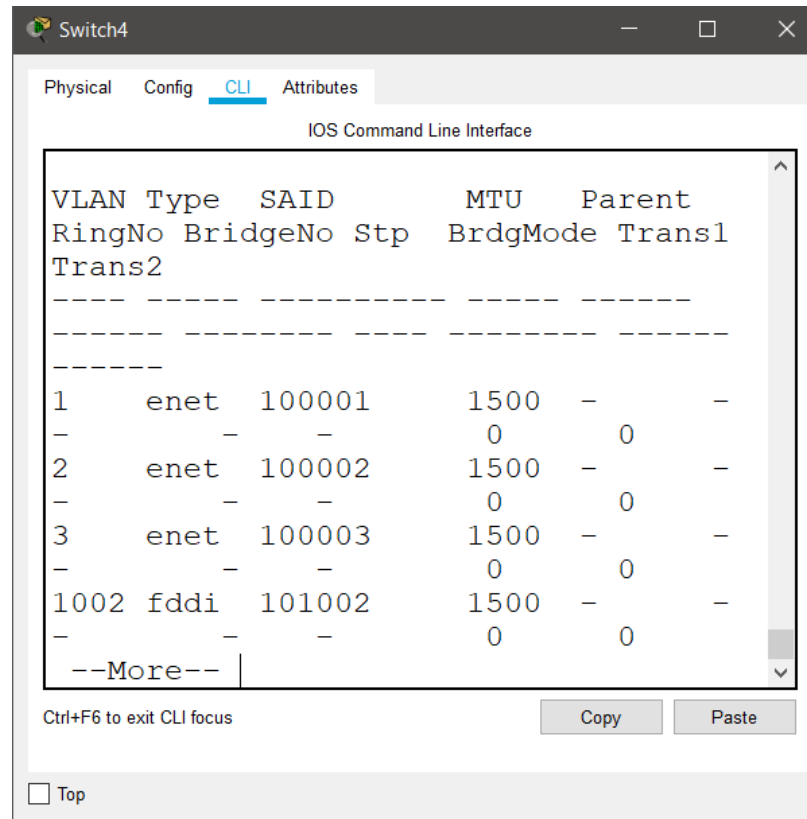
- ▶ Switch>en
- ▶ Switch#conf t
- ▶ Enter configuration commands, one per line. End with CNTL/Z.
- ▶ Switch(config)#vtp dom
- ▶ Switch(config)#vtp domain test
- ▶ Changing VTP domain name from NULL to test
- ▶ Switch(config)#vtp password 12345
- ▶ Setting device VLAN database password to 12345
- ▶ Switch(config)#

Configuration

- ▶ Switch 3
- ▶ Switch>en
- ▶ Switch#conf t
- ▶ Enter configuration commands, one per line. End with CNTL/Z.
- ▶ Switch(config)#vtp do
- ▶ Switch(config)#vtp domain test
- ▶ Changing VTP domain name from NULL to test
- ▶ Switch(config)#vtp password 12345
- ▶ Setting device VLAN database password to 12345
- ▶ Switch(config)#

Test VTP

- ▶ Create vlan 2, vlan 3 on switch 1 and check that it created on switch 2 and switch 3
- ▶ Switch(config)#vlan 2
- ▶ Switch(config-vlan)#vlan 3
- ▶ Switch(config-vlan)#do show vlan



VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
1	enet	100001	1500	-	-	-	-	-	-	-
2	enet	100002	1500	-	-	-	-	-	-	-
3	enet	100003	1500	-	-	-	-	-	-	-
1002	fddi	101002	1500	-	-	-	-	-	-	-

--More--

Test VTP

- ▶ From switch 2 show vlans
- ▶ Switch(config)#do show vlan

```
Switch5
Physical Config CLI Attributes
IOS Command Line Interface

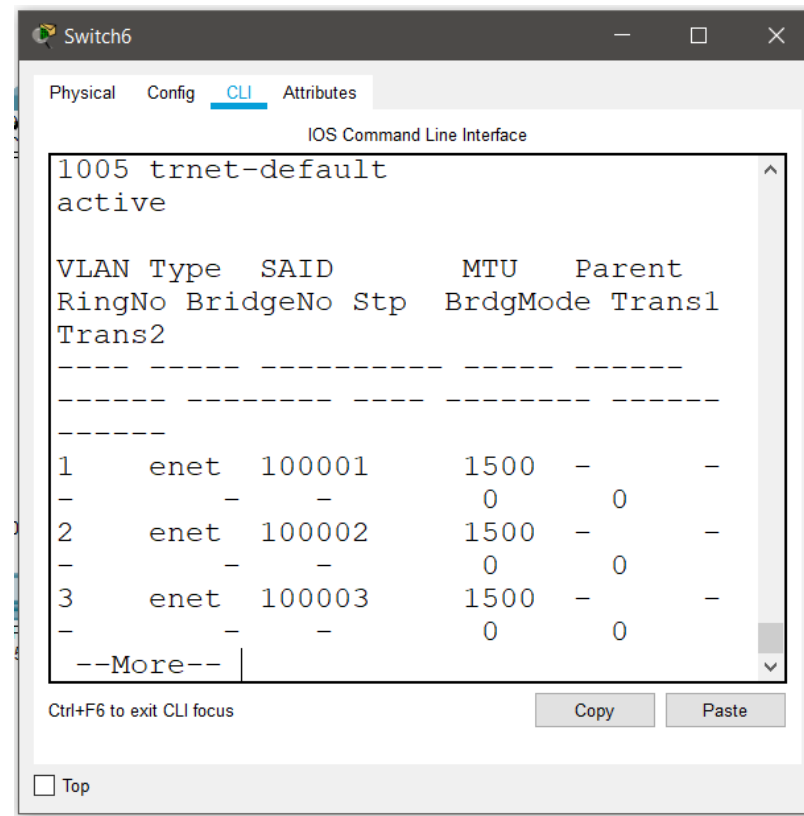
Switch(config)#vtp dom
Switch(config)#vtp domain test
Changing VTP domain name from NULL to test
Switch(config)#vtp password 12345
Setting device VLAN database password to 12345
Switch(config)#show vlan
^
% Invalid input detected at '^' marker.

Switch(config)#do 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
2	VLAN0002	active	
3	VLAN0003	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

Test VTP

- ▶ From switch 3 show vlans
- ▶ Switch(config)#do show vlan



The screenshot shows a network switch CLI window titled "Switch6". The window has tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, and the text "IOS Command Line Interface" is displayed. The output of the "show vlan" command is shown, indicating that VTP is in "trnet-default" mode and is "active". Below this, a table lists the configured VLANs:

VLAN	Type	SAID	MTU	Parent
RingNo	BridgeNo	Stp	BrdgMode	Trans1
Trans2				
1	enet	100001	1500	-
-	-	-	0	0
2	enet	100002	1500	-
-	-	-	0	0
3	enet	100003	1500	-
-	-	-	0	0

The output ends with "--More--". At the bottom of the window, there is a "Ctrl+F6 to exit CLI focus" message, "Copy" and "Paste" buttons, and a "Top" button.

Example 2 VTP mode client

- ▶ If we change the mode of VTP to client on one switch then can't create or update vlan in this switch
- ▶ Switch(config)#vtp mode client
- ▶ Switch(config)#vlan 30

```
Switch(config)#vtp mode client
Setting device to VTP CLIENT mode.
Switch(config)#vlan 30
VTP VLAN configuration not allowed when device is in CLIENT mode.
Switch(config)#do sh vlan
```

Example 3 VTP mode transparent

- ▶ When create vlan on switch which has vtp mode transparent the vlan will not created on others switch
- ▶ Switch(config)#vtp mode transparent
- ▶ Switch(config)#vlan 5
- ▶ Switch(config-vlan)#do show vlan

Thank You