

VLAN Trunking Protocol (VTP)



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Module Overview



Introduction to VTP

VTP versions 1 and 2

VTP modes

VTP pruning

Troubleshooting VTP pruning

VTP version 3

Switching device manager templates

VTP

Server

All VLANs configured here

Clients

Receive VLAN information from the server

Automatically create those VLANs locally

VTP

**Works only over existing
trunk links**

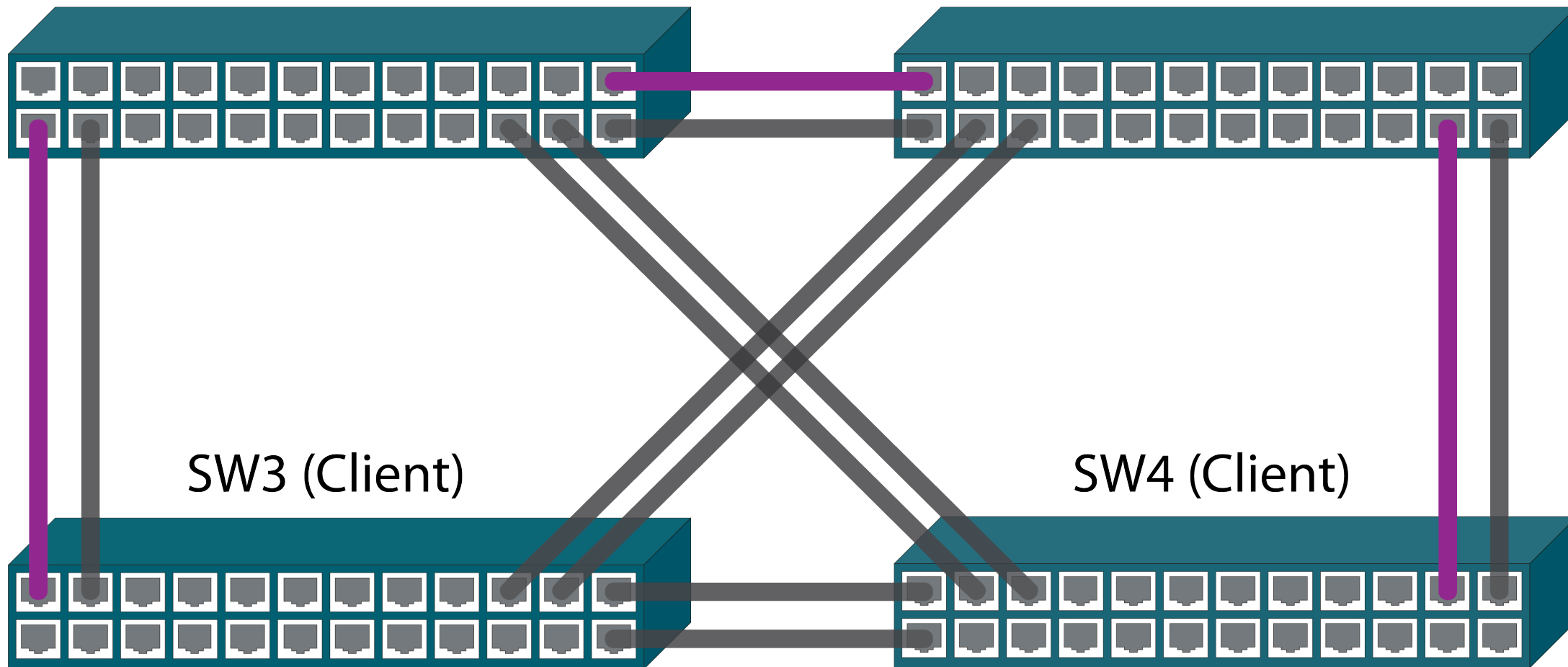
**Trunk encapsulation can be
802.1Q or ISL**

SW1

SW2 (Server)

SW3 (Client)

SW4 (Client)



VTP Versions 1 and 2

Requirement

Configure SW2 as a VTPv2 server

Configure SW3 and SW4 as VTP clients

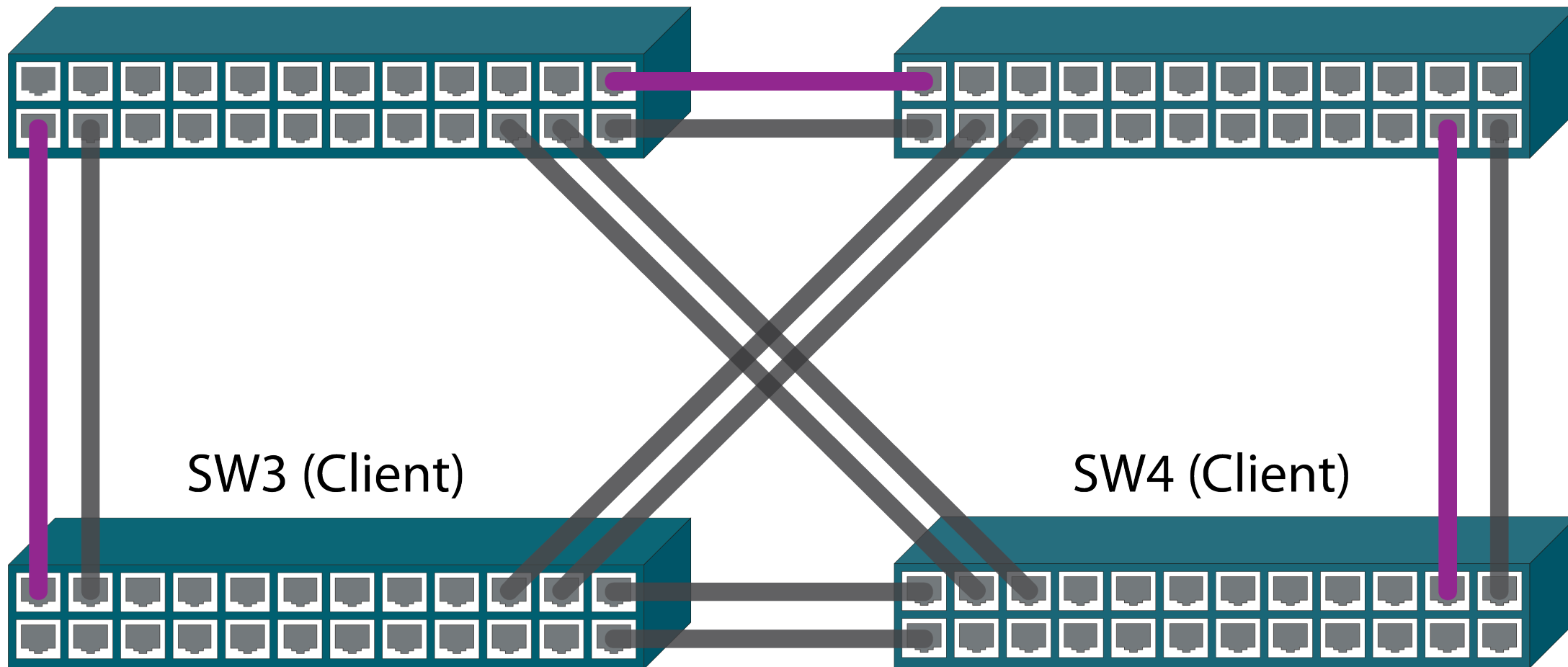
Use the VTP domain name Pluralsight

SW1

SW2 (Server)

SW3 (Client)

SW4 (Client)



VTP Summary Advertisement

VTP domain name

Revision number

MD5 digest

VTP version

Timestamp

VTP Subset Advertisement



Contains VLAN IDs and names

VTP Server vs. Client

Server

Any change to the VLAN database increments the revision number and triggers a new VTP summary advertisement

Client

Does not allow changes to the local VLAN database

Transparent Mode

Transparent Mode

Doesn't participate in VTP

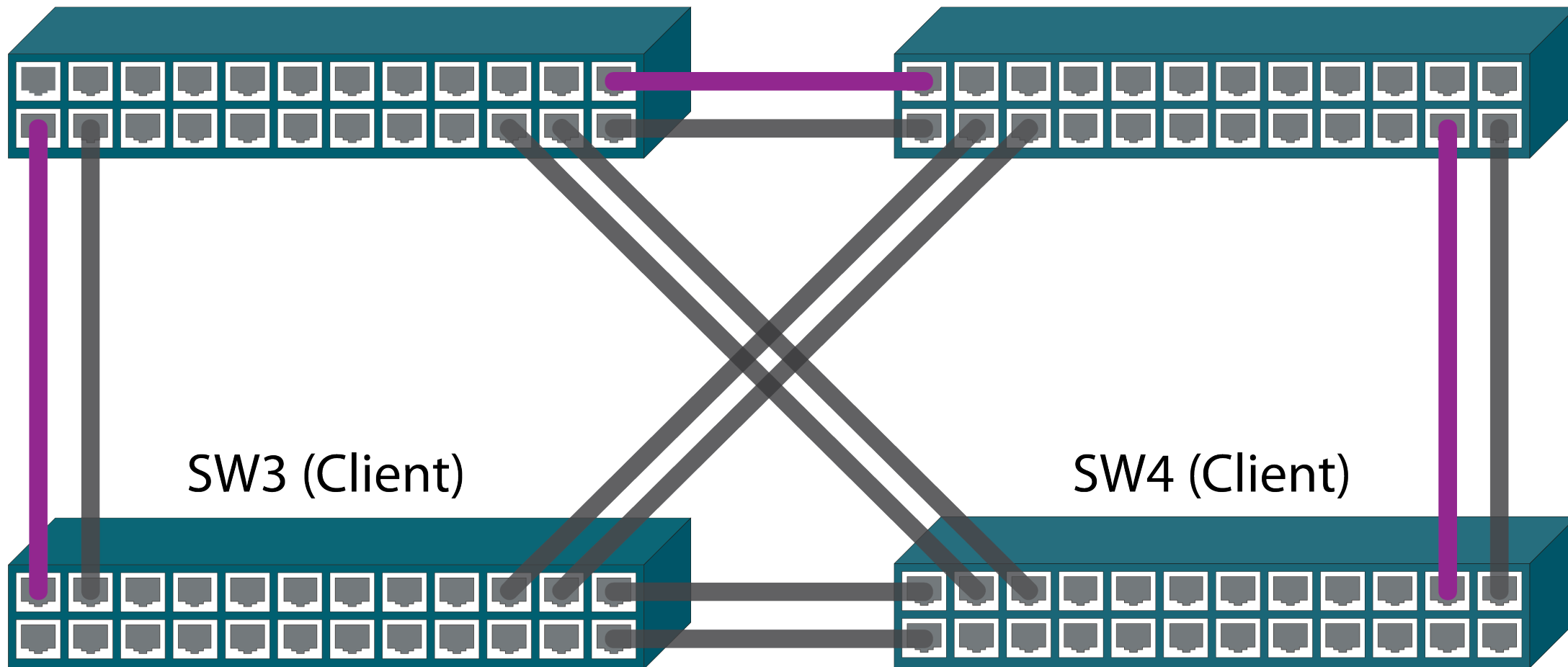
**Does forward VTP
advertisements out of
trunk ports**

SW1

SW2 (Server)

SW3 (Client)

SW4 (Client)



VTP Pruning

Requirement

Enable VTP pruning on SW2

VTP Pruning

VTP versions 1 and 2 can prune all normal, non-default VLANs

VLAN IDs 2-1001

VLAN 1 cannot be pruned

Troubleshooting VTP Pruning

When troubleshooting a trunk, always check both VTP pruning and the VLAN allowed list!

Requirement

Ensure SW4's VLAN400 SVI (192.168.4.4) can ping 192.168.4.10

Do not modify VTP on SW1

Troubleshooting Commands

`show interface trunk`

Displays manually pruned VLANs

`show interface pruning`

Displays VLANs pruned by VTP

VTP Version 3

VTP Version 3



Supports private VLANs

VTP Version 3

Supports extended VLANs

VLAN IDs 1006-4094

Extended VLANs

**Stored in the
running configuration**

Not stored in flash:vlan.dat

VTP Versions 1 and 2

**Do not support
extended VLANs**

**Only support normal VLANs
1-1001**

VTP Servers

VTP Versions 1 and 2

Multiple servers allowed

VTP Version 3

Only one primary server

Requirement

Create VLAN 2016 on SW2

SDM Templates

Switching device manager (SDM) templates

Allocate switch resources differently based on how the switch will be used

VLAN Template

Disables IP routing

**Supports the maximum
number of MAC addresses**

Routing Template

Allows IP routing

**Supports fewer
MAC addresses**

Access Template

**Supports the maximum
number of ACLs**

Enables IP routing

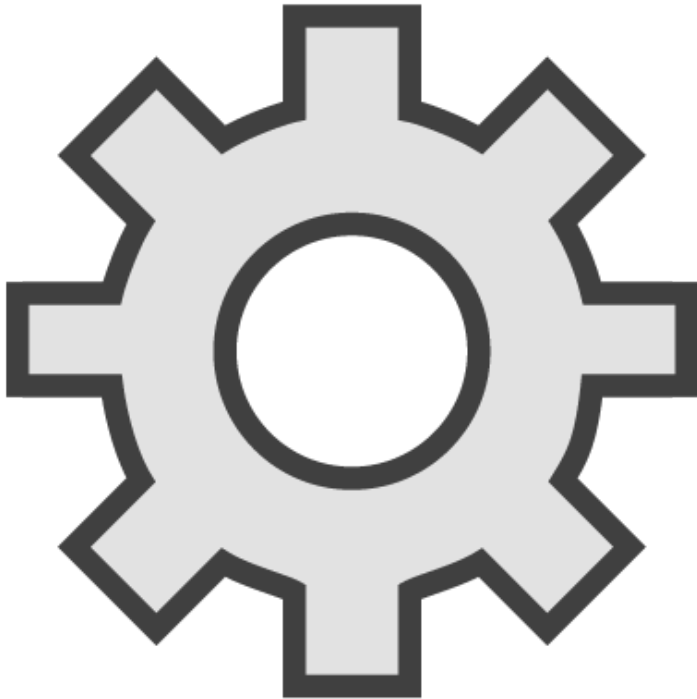
Default Template

**Also known as the Desktop
Default template**

**Compromise among the
VLAN, Routing, and
Access templates**

Summary

Summary



VTP can operate in server, client, or transparent mode

Summary



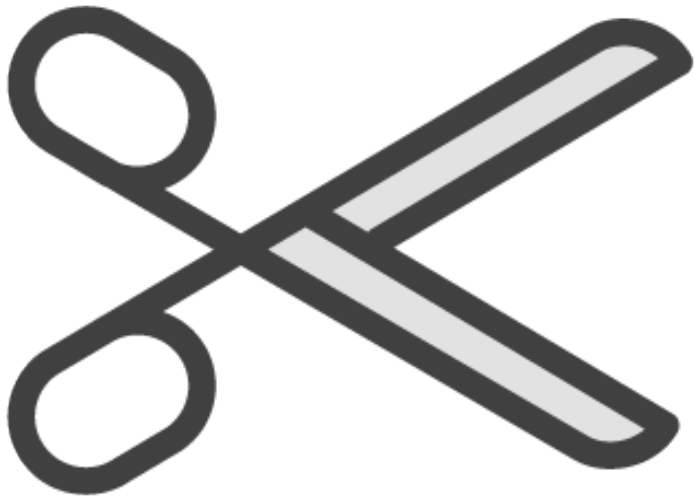
Switches in transparent mode can create and delete local VLANs and can forward VTP advertisements

Summary



VTP versions 1 and 2 do not support private VLANs, but version 3 does

Summary



VTP pruning and manual VLAN pruning are not mutually exclusive

Summary



VTP pruning is domain-wide

Manual pruning is trunk-wide

Summary



VLAN 1 cannot be pruned

Summary



The VTP domain name, password, and version must match

Summary



The `vtp password [password]` command sets the VTP password

Summary



SDM templates optimize resources for different use cases

Course Summary

Course Summary



What's a normal VLAN?

**A VLAN with an identifier between 1-1001
and stored in `flash:vlan.dat`**

Course Summary



How many VLANs can an access port be a member of?

Two, if a voice VLAN is configured

Course Summary



What is the role of the primary private VLAN?

To carry traffic from the promiscuous port down to the host ports

Summary



What does the secondary VLAN do?

It carries layer 2 traffic from the hosts to the promiscuous port

Summary



What does DTP negotiate?

Whether a trunk will establish and which encapsulation it will use

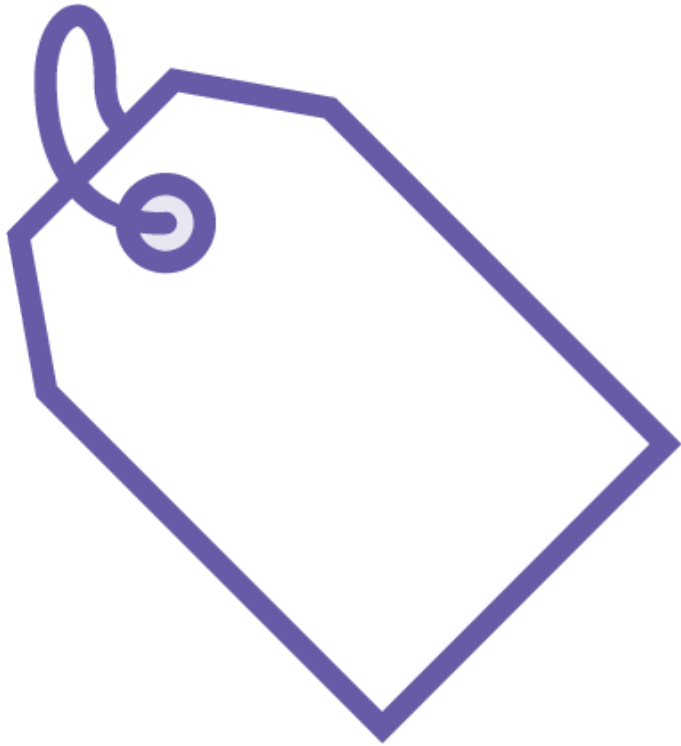
Summary



What do trunked switches need to have locally configured in order to pass VLAN traffic?

The VLANs!

Summary



What must switches agree on to form an 802.1Q trunk?

The native VLAN and whether it should be tagged

Course Summary



Thanks for watching!