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Pro□ciency

Introduction

The *Campus Wired LAN Technology Design Guide* describes how to design a wired network access with ubiquitous capabilities that scale from small environments (for instance, those environments with one to just a

A hierarchical LAN design includes the following three layers:

- Access layer

Distribution Layer

Flexible Design

Access Layer

Access Layer

Configuring the Access Layer

1.

Access Qat3 Qat3 Qat-at3 Qat3 Qer

Access Layer

Access Layer

Access Layer

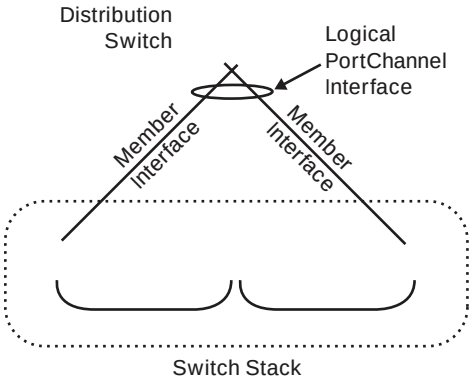
Step 13:

Figure 11 - Scenario that BPDU Guard protects against

Access Layer

Access Layer

Figure 12 - EtherChannel example



Step 2:

Step 3:

Figure 16 -

Distribution Layer Roles

Much emphasis has been placed on the distribution layer as the access layer aggregation point because this is the most common role. The distribution layer serves other roles in LAN designs.

In many smaller locations, the WAN head end and Internet edge terminate at the headquarters location, along wion Lr3-39.7(v)7.6(e)-6.8(s o)4..1(o)-f(s)Ƀ7.2(t)13..1(u)mthr-5(a)-3(l)0.5(l)-4.1(e)-0 d7.2(t).3(i)-1.4tsd aernd lne WAN

Cisco Catalyst 6880-X VSS

- Cisco Catalyst 6880-X VSS uses Cisco Catalyst 6880-X Series extensible fixed aggregation switch, with

Deployment Details

On the standalone switch #1:

A critical aspect of the Cisco Catalyst VSS is the control plane and data plane operating models. From a control

```
 map from 1 to 8
 map from 2 to 16
 map from 3 to 24
 map from 4 to 32
 map from 5 to 46
 map from 6 to 48
 map from 7 to 56
!
macro name EgressQoS
```

```
class-map match-any MULTIMEDIA-CONFERENCING-QUEUE
  match  dscp af43
  match  dscp af42
  match  dscp af41
class-map match-any MULTIMEDIA-STREAMING-QUEUE
  match  dscp af33
  match  dscp af32
  match  dscp af31
  match  dscp af32  match  dscp af31
  match  dscp af32  match  dscp af31
```

Option 3: Con□gure the Cisco Catalyst 3850 platform

Option 4: Con□gure the Cisco Catalyst 3750-X platform

Step 1: When there are multiple switches configured in a stack, one of the switches controls the operation of the

Cisco Catalyst 6800 and 6500 Series Switches do not require the ip routing

```
 area 1 range 10.4.0.0 255.255.240.0
 passive-interface default
 no passive-interface Port-channel30
 network 10.4.0.0 0.0.15.255 area 1
 network 10.4.40.0 0.0.0.255 area 0
ip multicast-routing
ip pim autorp listener
!
```

Procedure 6 Configure IP Multicast RP

(Optional)

The Cisco Catalyst 3750 Series Switch requires the switchport trunk encapsulation dot1q command.

```
interface [port-channel] [number]
  description EtherChannel Link to {your device here}
  switchport trunk allowed vlan [data vlan],[voice vlan],[management vlan]
  switchport mode trunk
  logging event link-status
  logging event trunk-status
  logging event bundle-status
  load-interval 30
  no shutdown
  exit
```

Option 2: Connect distribution layer switch to LAN core switch

Step 1: Configure the Layer 3 interface.

If you are using an EtherChannel to connect to the LAN core, the interface type is PortChannel and the number

Unlike EIGRP named mode configuration, OSPF neighbor authentication also requires a configuration attached directly to the Layer-3 interfaces, thus additional router neighbor authentication configuration is completed as

Core Layer

Core Layer

Deployment Details

Step 3:

Core Layer

```
class-map type lan-queuing match-any MULTIMEDIA-CONFERENCING-QUEUE
```

Core Layer

Step 10:

Step 3:

```
load-interval 30
```

Example: Core to distribution port-channel configuration–OSPF

LAN Core Layer

Appendix C: Changes

This appendix summarizes the changes Cisco made to this guide since its last edition.

Please use the