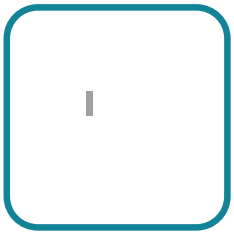
Campus Wired LAN

Technology Design Guide



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Preface

Pro□ciency

Flexible Design

Table 1 - IP addressing for Campus Wired LAN Technology Design Guide

```
class-map match-any SCAVENGER-QUEUE
```

Step 2:

Step 3: Enable QoS by applying the access edge QoS macro that was defined in the platform configuration procedure. This macro generates a QoS configuration appropriate for the platform.

```
macro apply AccessEdgeQoS
```

All client-facing interfaces allow for an untrusted PC and/or a trusted Cisco IP phone to be connected to the switch and automatically set QoS parameters. When a Cisco IP Phone is connected, trust is extended to the phone, and any device that connects to the phone will be considered untrusted and all traffic from that device

Step 3: Save the running configuration that you have entered so it will be used as the startup configuration file
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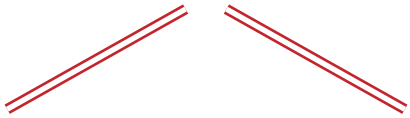
Distribution Layer

Design Overview

Figure 19 - Two-tier collapsed LAN core design

Figure 20 - Network services distribution layer



Cisco Catalyst 6880-X VSS

-

Option 1:

Step 6:

```
  random-detect dscp 14 percent 70 80
  random-detect dscp 12 percent 80 90
  random-detect dscp 10 percent 90 100
 class SCAVENGER-QUEUE
  bandwidth remaining percent 2
  queue-buffers ratio 10
  random-detect dscp-based
  random-detect dscp 8 percent 80 100
class class-default
  queue-buffers ratio 25
  random-detect dscp-based
  random-detect dscp 0 percent 80 100
  random-detect dscp 15 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 2i4 5 4 5 4 5 4 5 4 5 4
  random-detect d5scp-based
  random-detect dscp 8 perce5nt 80 100
```

```
 class PRIORITY-QUEUE
    priority
 class CONTROL-MGMT-QUEUE
    bandwidth remaining percent 10
 class MULTIMEDIA-CONFERENCING-QUEUE
    bandwidth remaining percent 10
 class MULTIMEDIA-STREAMING-QUEUE
    bandwidth remaining percent 10
 class TRANSACTIONAL-DATA-QUEUE
    bandwidth remaining percent 10
    dbl
 class BULK-DATA-QUEUE
    bandwidth remaining percent 4
    dbl
 class SCAVENGER-QUEUE
    bandwidth remaining percent 1
 class class-default
    bandwidth remaining percent 25
    dbl
!
macro name EgressQoS
```

Step 3:

```
 eigrp router-id [ip address of loopback 0]
 eigrp stub summary
 nsf
exit-address-family
```

Cisco Catalyst 6500 Series Switches do not require the ip routing

Figure 25 - Rendezvous point placement in the network

Step 6:

Core Layer

On the standalone switch #1:

```
VSS-Sw1(config)#switch virtual domain 101
```

Core Layer

Step 1: Enable IP Multicast routing on the platform in the global configuration mode.

```
ip multicast-routing
```

Step 2: Configure a second loopback interface for RP functions on the core VSS switch. All routers point to this IP address on loopback 1 for the RP. You configure the RP address from the core IP address space. Creating the RP on a second loopback interface allows for flexibility for potential RP migrations using Anycast RP operation. In the event you add a core layer to your existing network and the RP is currently configured on a distribution layer, you may want to move the RP to the core.

```
interface Loopback 1
 ip address 10.4.40.252 255.255.255.255
```

Step 2: Configure a serfo tt Rh6.4(d iR)-4d-5.6(ca0.8(r)-34.9(f9(. Y)72.6([l)r)--5.6.3 Td[l)-11.2)-4.7(T)6.2(f)11.717 -1.

Step 1: Configure the Layer 3 interface.

```
macro apply EgressQoS
channel-protocol lacp
channel-group [number] mode active
logging event link-status
logging event trunk-status
logging event bundle-status
no shutdown
```

Step 4: Save the running configuration that you have entered so it will be used as the startup configuration file when your switch is reloaded or power-cycled.

```
copy running-config startup-config
```

```
exit-af-interface
!
topology base
exit-af-topology
network
```

Appendix A: Product List

LAN Distribution Layer

Please use the feedback form to send comments and suggestions about this guide.