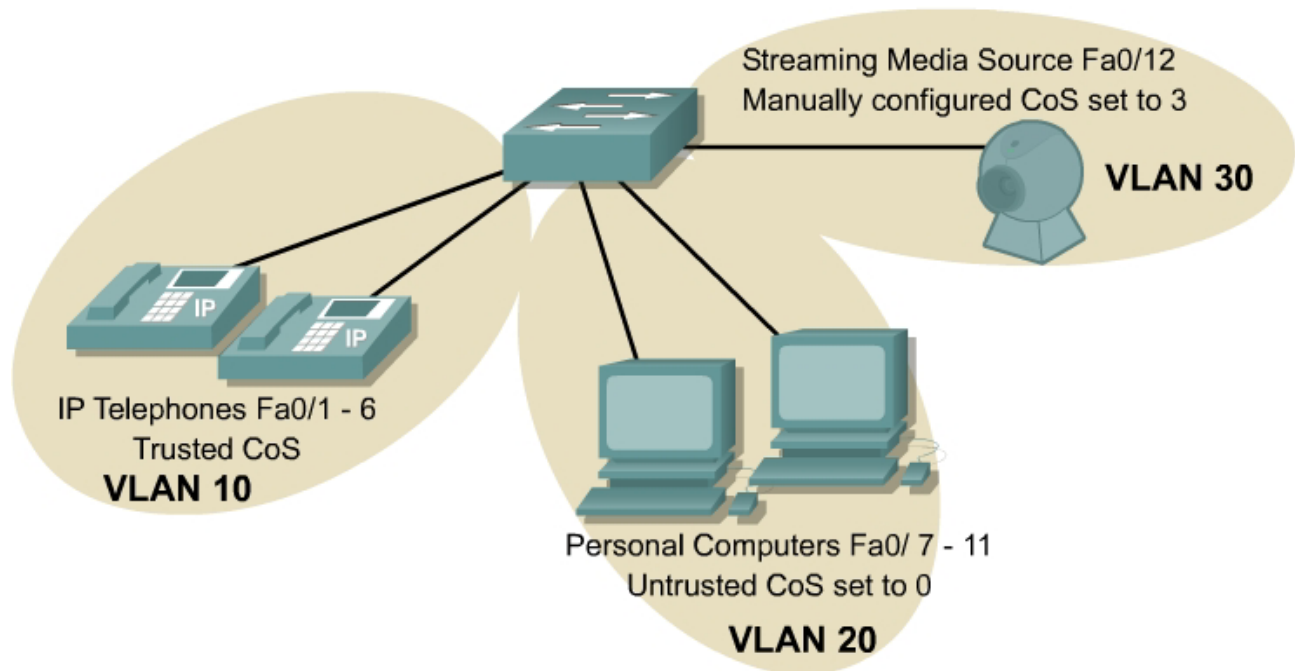


Lab 8.1.10.1 Classifying Traffic using Class of Service at the Access Layer



Objective

For effective quality of service (QoS) it is important to classify traffic as soon as possible. This allows routing and switching processes that can differentiate traffic and provide the required service levels. This lab introduces the use of the Layer 2 class of service (CoS) field as a means of classifying traffic entering the network at the access-layer switch. The following key concepts are covered:

- Trust of an existing CoS, such as provided by an IP phone
- Manual configuration of CoS for devices incapable of setting it for themselves
- Manual configuration and overriding the CoS for devices that cannot be trusted

This lab can be performed using the Catalyst 2950 or 3550 switches.

Scenario

A company marketing department is expanding and has just obtained some additional floor space for five new staff members. Each staff member has a personal computer and an IP phone. In addition, the marketing department has purchased a video camera so that marketing presentations can be streamed to customers and employees. Configure the access-layer switch for the new workgroup and pay particular attention to their quality of service requirements.

Step 1

Build the network according to the diagram. Before beginning a lab, delete the **vlan.dat** and startup configuration files on the switches and then reload or power cycle them. If a Catalyst 3550 is being used for this lab, activate the QoS features of the switch from the global configuration mode.

```
Switch(config)#mls qos
```

If a Catalyst 2950 is being used for this lab, ignore this step as the QoS features of the 2950 are always available.

Step 2

Configure a Virtual Terminal Protocol (VTP) domain **CORP** and assign VLANs to the interfaces as shown in the network diagram.

```
Switch(config)#vtp domain CORP
Switch(config)#vtp mode server
Switch(config)#interface range fastethernet 0/1 - 6
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#interface range fastethernet 0/7 - 11
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#interface fastethernet 0/12
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
```

```
Switch(config)#vtp domain CORP
Changing VTP domain name from NULL to CORP
```

```
Switch(config)#vtp mode server
Device mode already VTP SERVER.
```

```
Switch(config)#interface range fastethernet 0/1 - 6
```

```
Switch(config-if-range)#switchport access vlan 10
% Access VLAN does not exist. Creating vlan 10
```

```
Switch(config-if-range)#interface range fastethernet 0/7 - 11
Switch(config-if-range)#switchport access vlan 20
% Access VLAN does not exist. Creating vlan 20
```

```
Switch(config-if-range)#interface range fastethernet 0/12
Switch(config-if-range)#switchport access vlan 30
% Access VLAN does not exist. Creating vlan 30
Switch(config-if-range)#
```

```
Switch#show vtp status
VTP Version                : 2
Configuration Revision      : 3
Maximum VLANs supported locally : 250
Number of existing VLANs    : 8
VTP Operating Mode          : Server
VTP Domain Name             : CORP
VTP Pruning Mode            : Disabled
VTP V2 Mode                 : Disabled
VTP Traps Generation        : Disabled
MD5 digest                  : 0x3D 0x13 0x61 0x28 0x48 0xAD 0x66 0x83
Configuration last modified by 0.0.0.0 at 3-1-93 00:01:49
Local updater ID is 0.0.0.0 (no valid interface found)
Switch#
```

```
Switch#show vlan brief
```

VLAN Name	Status	Ports
1 default	active	Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20

			Fa0/21, Fa0/22, Fa0/23, Fa0/24
			Gi0/1, Gi0/2
10	VLAN0010	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4
			Fa0/5, Fa0/6
20	VLAN0020	active	Fa0/7, Fa0/8, Fa0/9, Fa0/10
			Fa0/11
30	VLAN0030	active	Fa0/12
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	
Switch#			

Step 3

The IP phones have been purchased and have automatically set the Ethernet class of service field to 5. This is an appropriate value. This allows the access-layer switch to pass these Ethernet frames, leaving the CoS intact. In other words, the CoS coming in on the IP phone interfaces switch is trusted.

Configure interfaces 1 through 6 to trust the incoming CoS.

```
Switch(config)#interface range fastethernet 0/1 - 6
Switch(config-if-range)#mls qos trust cos
```

```
Switch(config)#interface range fastEthernet 0/1 - 6
Switch(config-if-range)#mls qos trust cos
Switch(config-if-range)#
```

```
Switch#show mls qos interface
FastEthernet0/1
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

```
FastEthernet0/2
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

```
FastEthernet0/3
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

```
FastEthernet0/4
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

```
FastEthernet0/5
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
```

DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/6

trust state: trust cos
trust mode: trust cos

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Maptrust device: none

FastEthernet0/7

trust state: not trusted

trust mode: not trusted

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

trust device: none

FastEthernet0/8

trust state: not trusted

trust mode: not trusted

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

trust device: none

FastEthernet0/9

trust state: not trusted

trust mode: not trusted

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

trust device: none

FastEthernet0/10

trust state: not trusted

trust mode: not trusted

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

trust device: none

FastEthernet0/11

trust state: not trusted

trust mode: not trusted

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

trust device: none

FastEthernet0/12

trust state: not trusted

trust mode: not trusted

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

trust device: none

FastEthernet0/13

trust state: not trusted

trust mode: not trusted

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

trust device: none

FastEthernet0/14
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/15
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/16
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/17
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/18
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/19
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/20
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/21
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/22
trust state: not trusted

```
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/23
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/24
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/1
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/2
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

Switch#
```

Note The previous output was generated on a Catalyst 3550. On a 2950, the entry **DSCP Mutation Map:** would be replaced by **pass-through: none**.

Step 4

The personal computers used in the marketing department do not have any special QoS requirements. By classifying Ethernet frames originating from them with a CoS of 0. A best effort delivery priority is represented.

Configure interfaces 7 through 11 with a default CoS of 0.

```
Switch(config)#interface range fastethernet 0/7 - 11
Switch(config-if-range)#mls qos cos 0

Switch(config)#interface range fastethernet 0/7 - 11
Switch(config-if-range)#mls qos cos 0
```

Note The default COS setting is set to 0 therefore there will not be any changes reflected in the following output. It is included simply for your reference.

```
Switch#show mls qos interface

FastEthernet0/1
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/2
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/3
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/4
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/5
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/6
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/7
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/8
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

```
FastEthernet0/9
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/10
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/11
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/12
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/13
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/14
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/15
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/16
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/17
trust state: not trusted
```


trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/18
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/19
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/20
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/21
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/22
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/23
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/24
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/1
trust state: not trusted
trust mode: not trusted
COS override: dis

```

default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/2
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

```

Step 5

The personal computers use a network interface card (NIC) that supports 802.1p. Therefore, the PCs have the capability of setting the CoS. The marketing staff would never intentionally want to disrupt network services. However, if the CoS was set to a high value, data network traffic such as FTP could seriously disrupt voice or video services.

Configure interfaces 7 through 11 to override any incoming CoS and set it to the default.

```

Switch(config-if-range)#mls qos cos override
Switch(config-if-range)#exit

Switch(config-if-range)#mls qos cos override

Switch#show mls qos interface

FastEthernet0/1
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/2
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/3
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/4
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/5
trust state: trust cos
trust mode: trust cos

```

COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/6
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/7
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/8
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/9
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/10
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/11
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/12
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/13
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/14
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/15
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/16
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/17
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/18
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/19
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/20
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/21
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

```

FastEthernet0/22
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/23
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/24
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/1
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/2
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

```

Step 6

The video traffic needs to be given priority treatment within the network. This is because video traffic has different requirements than voice traffic. Assign a separate CoS of 3, which assures the video traffic will be readily identified by other switches and routers within the network.

The camera is not capable of setting its own CoS. Configure a default CoS of 3 on interface 12.

```

Switch(config)#interface fastethernet 0/12
Switch(config-if)#mls qos cos 3

```

Step 7

It is possible that in the future the marketing department will upgrade the camera to a more advanced model that supports setting of its own CoS. Configure the switch port so that if frames are received with the CoS already set, the switch will use that value instead of the default.

```

Switch(config-if)#mls qos trust cos
Switch(config-if)#^Z

Switch(config)#interface fastethernet 0/12
Switch(config-if)#mls qos cos 3

```

```
Switch(config-if)#^Z

Switch#show mls qos interface
FastEthernet0/1
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/2
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/3
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/4
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/5
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/6
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/7
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/8
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

```
FastEthernet0/9
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/10
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/11
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/12
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 3
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/13
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/14
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/15
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/16
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/17
```

trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/18
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/19
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/20
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/21
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/22
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/23
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/24
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/1
trust state: not trusted
trust mode: not trusted


```
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/2
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

Step 8

Verify the QoS settings for all of the interfaces using the `show mls qos interface` command.

Note The following output was generated on a Catalyst 3550. On a 2950, the entry **DSCP Mutation Map:** would be replaced by **pass-through: none**.

```
Switch#show mls qos interface

FastEthernet0/1
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/2
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/3
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/4
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/5
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/6
trust state: trust cos
```

trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/7
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/8
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/9
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/10
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/11
trust state: not trusted
trust mode: not trusted
COS override: ena
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/12
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 3
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

FastEthernet0/13
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

< Output omitted >

```
GigabitEthernet0/1
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

GigabitEthernet0/2
trust state: not trusted
trust mode: not trusted
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none

Switch#
```

To verify the QoS settings for a specific interface, add the interface name.

```
Switch#show mls qos interface fastEthernet 0/1
FastEthernet0/1
trust state: trust cos
trust mode: trust cos
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
trust device: none
```

1. What is the trust state for interface fa0/7?
2. What command brought about this trust state?
3. Is it possible to use the commands `mls qos cos override` and `mls qos trust cos` on the same interface?

Save the configuration to the switch as the next lab will continue to build on this one.