

配置3750 MLS到3850 MQC的QoS轉換

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簡介

本檔案將說明3750多層次交換(MLS)服務品質(QoS)和3850交換器使用模組化QoS CLI(MQC)之間的差異。

必要條件

需求

思科建議您瞭解以下主題：

- Cisco IOS®軟體
- 3750多層次交換(MLS)
- 交換器模組化QoS CLI(MQC)

採用元件

本文件所述內容不限於特定軟體和硬體版本。

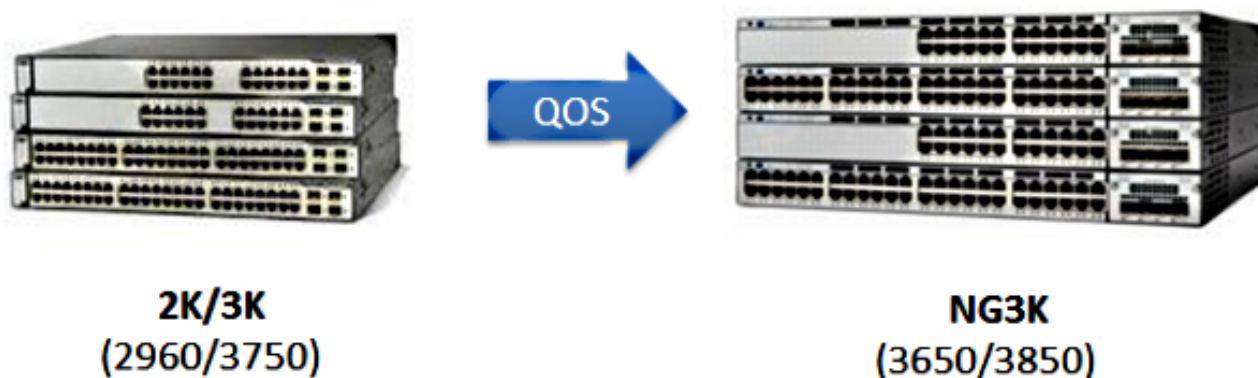
本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

背景資訊

本文檔還介紹了有關通過示例配置進行轉換的詳細資訊。本檔案僅適用於有線QoS。本檔案適用於負責設計、實作或管理包含獨立Cisco Catalyst 3850交換器或Cisco Catalyst 3850交換器堆疊（稱為交換器）的網路的網路專業人員。

3750 MLS QoS和3850 MQC QoS之間的差異概述

3850線路中的QoS配置已改進，因為它實施了MQC（通用QoS配置模型）配置，而不是舊的3750和3560線路交換機的MLS QoS（平台相關的QoS配置）命令。



下表突出顯示了主要差異：

交換器型別	3750	3850
基本結構	MLS	MQC
預設QoS	已禁用	已啟用
全域性配置	支援MLS QoS 在入口處支援某些MQC	不支援MLS QoS 支援MQC [class-map , policy-map]
介面配置	在入口支援MLS QoS配置和某些MQC CLI	將策略附加到介面
埠信任預設值	已禁用	已啟用

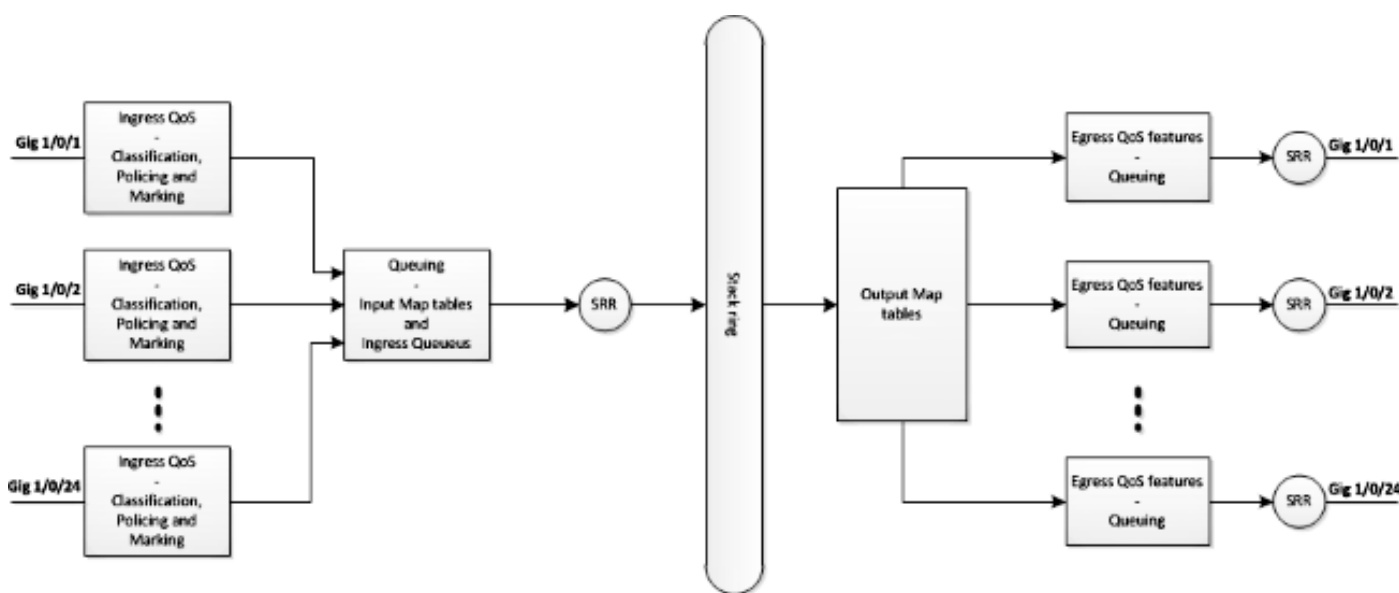
連線埠輸入	分類/管制/標籤/ 佇列	分類/管制/標籤 [無入口佇列!]
連線埠輸出	佇列	分類/管制/標籤/佇列
交換器虛擬介面(SVI)輸入	分類/管制/標籤	分類/標籤
SVI輸出	無	分類/標籤

必須認識到QoS方法的主要基本變化。

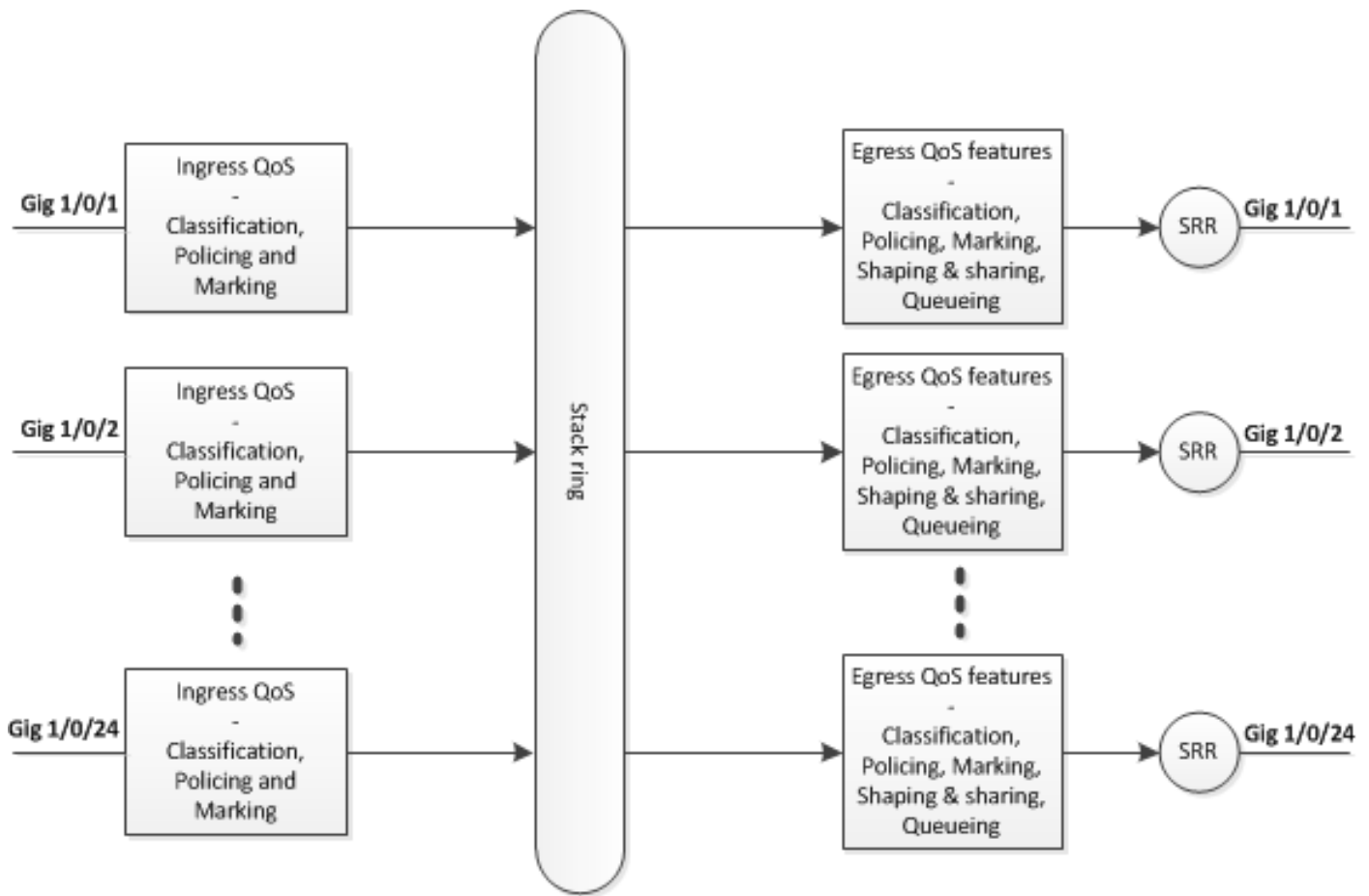
在3750上，預設會停用QoS，在3850上會啟用。此外，為了在3750平台上保留第2層(L2)/第3層(L3)QoS標籤，必須應用信任配置。

對於3850，所有資料包在預設情況下都是受信任的（保留L2/L3 QoS標籤），除非您使用入口或出口介面上的特定策略對映應用對其進行更改。

3750 QoS型號



3850 QoS型號



功能詳細資訊比較表

輸入

功能	3750	3850
分類	類別對映匹配區別服務代碼點(DSCP)、優先順序(Prec)、訪問控制清單(ACL) 同時支援match-all和match-any	Class-map服務類別(CoS)、Prec、DSCP、ACL 和VLAN 僅支援match-any
標籤 [無條件設定]	設定DSCP和Prec	設定CoS、Prec、DSCP和QoS組
標籤 [條件標籤]	DSCP突變	Class-default表對映

管制	1r2c	1r2c和2r3c
管制降級	管制超出標籤限制 [僅支援DSCP]	管制超出和違反降級 [支援CoS、DSCP、Prec]
彙總管制	支援	Agg-policing [一種HQoS]
輸入佇列	僅支援3750，但不支援3750x	不支援
分層 QoS(HQoS)	僅限VLAN型HQoS	基於埠的聚合管制和每 VLAN(PV)

輸出

功能	3750	3850
無隊列操作的 分類支援	不支援	CoS、Prec、DSCP、QoS組、ACL 和VLAN
對排隊操作的 分類支援	CoS和DSCP	CoS、Prec、DSCP和QoS組
標籤	不支援	設定CoS、Prec和DSCP
管制	不支援	1r2c、2r3c，通過表對映向下顯示超出/違反標 籤
隊列和隊列型 別的最大數量	1P3Q3T [4個隊列] 加速隊列 —> 優先順序隊列	2P6Q3T [最多8個隊列]
輸出佇列	共用模式、形狀模式、隊列限制 、優先順序和隊列緩衝區	頻寬、剩餘頻寬、整形、隊列限制、優先順序 和隊列緩衝區

總部	不支援	HQoS:agg-policing、PV、埠整形器和父使用者整形器 (帶有子級非隊列操作)
----	-----	-------------------------------------------------

常見QoS Show命令

3750

輸入show命令:

<#root>

```
show run class-map [name_of_class-map]
```

```
show run policy-map [name of policy-map]
```

```
show policy-map interface [interface_name]
```

常規show命令:

<#root>

```
show mls qos maps
```

```
show mls qos maps
```

```
show mls qos queue-set
```

```
show mls qos interface [interface_name] queuing
```

```
show platform port-asic stats drop [interface_name] statistics
```

```
show mls qos aggregate-policer
```

3850

<#root>

show run class-map [name_of_class-map]

show run policy-map [name of policy-map]

show table-map [name_of_table-map]

show run policy-map [name_of_policy-map]

show policy-map interface [interface_name]

show platform qos policies port sw [sw#]

show platform qos queue config interface_type [interface_name]

show platform qos queue stats interface_type [interface_name]

3750到3850 QoS轉換示例

QoS配置	3750 [全球]	3750 [介面]	3850 *	示例 連結
QoS停用	無MLS QoS	兩個隊列 Control->隊列(2) 資料 —>隊列(4)	無策略的輸出 控制 —>隊列(1) 資料 —>隊列(2)	
信任或在入口和出口設定	MLS QoS	答) MLS QoS信任CoS	CoS上的出口隊列策略分類[入口需要配置信任CoS]	

基於入口的排隊 操作 信任或設定		b) MLS QoS信任DSCP	dscp上的出口隊列策略分類	
		思) 輸入帶有用於標籤DSCP值的設定操作的策略	DSCP上的出口隊列策略分類	
		d) 無MLS QoS信任配置[兩個CoS/DSCP都可以設定為零]	使用class-default輸入策略 設定CoS/DSCP 0	
CoS/DSCP隊列對映	MLS QoS共用循環配置資源(SRR) — 隊列輸出[CoS-map/DSCP-map]	A、b、c和d可以使用相應的新對映	輸出具有排隊操作的顯式分類[CoS/DSCP]	
DSCP突變	MLS QoS DSCP突變	介面需要配置 MLS QoS信任DSCP MLS QoS DSCP-mutation [name]	具有表對映的介面輸入策略	
Agg管制	MLS QoS彙總管制	需要介面級配置	Agg-policing [一種HQoS]	
警方的降級	MLS QoS map policed-DSCP [10][11]到[63]	管制策略附加到介面，超出not drop，全域性管制的DSCP可以生效 [輸入]	一個用於超出的表對映和一個用於違反策略操作的表對映 [輸入和輸出]	
Queue-limit	MLS QoS queue-set output [1] threshold [1] [100] [100] [50] [200] 1-> queue-set 1	Config queue-set [2] [預設隊列集1]	具有隊列操作和隊列限制配置的出口隊列策略	

	<1->佇列1 閾值1 閾值2 保留的緩衝區 最大閾值			
Queue-buffers	MLS QoS queue-set output [1]緩衝區 [15] [25] [40] [20]	Interface config queue-set	具有佇列操作和佇列緩衝區比率的策略對映[0-100]	
共用/頻寬	MLS QoS	介面層級設定 「SRR-queue bandwidth share 1 30 35 5」 [共用模式]	策略對映中的頻寬	
優先順序佇列 [加速佇列]	MLS QoS	介面級配置「priority-queue out」，這樣可以將相應佇列集的第1個佇列作為優先順序佇列	策略對映中的優先順序級別1	
整形器	MLS QoS	SRR-queue bandwidth shape [shape mode]	策略對映中的形狀平均值	
埠整形器	MLS QoS	SRR佇列頻寬限制	埠整形器	
總部	MLS QoS	SVI [attach policy to SVI]和介面需要配置「MLS QoS VLAN_based」	PV策略 並將策略附加到輸入方向的埠	

示例1：禁用QoS

3750 (全域組態)	3750 (介面)	3850
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無MLS QoS	兩個隊列[控制一個隊列2，資料一個隊列4]	無策略的輸出 [控制隊列1中的資料包和隊列2中的資料包]
----------	-----------------------	---------------------------------

3750

<#root>

3750#

show mls qos

QoS is disabled

<- disable

QoS ip packet dscp rewrite is enabled

3750#

show mls qos interface gig1/0/1 statistics | b output queues enqueued

```

output queues enqueued:
queue:  threshold1  threshold2  threshold3
-----
queue 0:      4         0         0
queue 1:      0         0         0

```

<- control

```

queue 2:      0         0         0
queue 3:      0         0         0

```

<- data

```

output queues dropped:
queue:  threshold1  threshold2  threshold3
-----
queue 0:      0         0         0
queue 1:      0         0         0

```

<- control

```

queue 2:      0         0         0
queue 3:      0         0         0

```

<- data

Policer: Inprofile: 0 OutofProfile: 0

3850

<#root>

3850#

show run interface gig1/0/1

```
interface GigabitEthernet1/0/1
end
```

3850#

show platform qos queue config gigabitEthernet 1/0/1 sw 1

DATA Port:21 GPN:1 AFD:Disabled QoSMap:0 HW Queues: 168 - 175
DrainFast:Disabled PortSoftStart:1 - 600

```
-----
DTS Hardmax  Softmax  PortSMin Glb1SMin  PortStEnd
-----
0  1  5  120  6  480  0  0  0  0  800
```

<- control

```
1  1  4  0  7  720  2  480  2  180  2  800
```

<- data

```
2  1  4  0  5  0  0  0  0  0  0  800
3  1  4  0  5  0  0  0  0  0  0  800
4  1  4  0  5  0  0  0  0  0  0  800
5  1  4  0  5  0  0  0  0  0  0  800
6  1  4  0  5  0  0  0  0  0  0  800
7  1  4  0  5  0  0  0  0  0  0  800
```

```
Priority  Shaped/shared  weight  shaping_step
-----
0  0  Shared  50  0
1  0  Shared  75  0
2  0  Shared  10000  179
3  0  Shared  10000  0
4  0  Shared  10000  0
5  0  Shared  10000  0
6  0  Shared  10000  192
7  0  Shared  10000  0
```

```
Weight0 Max_Th0 Min_Th0 Weigth1 Max_Th1 Min_Th1 Weight2 Max_Th2 Min_Th2
```

```
-----
0  0  478  0  0  534  0  0  600  0
1  0  573  0  0  641  0  0  720  0
2  0  0  0  0  0  0  0  0  0
3  0  0  0  0  0  0  0  0  0
4  0  0  0  0  0  0  0  0  0
5  0  0  0  0  0  0  0  0  0
6  0  0  0  0  0  0  0  0  0
7  0  0  0  0  0  0  0  0  0
```

示例2：啟用QoS的信任成本分析

3750 (全球)	3750 (介面)	3850
MLS QoS	介面「MLS QoS trust CoS」 (基於到隊列集1的預設CoS對映)	基於CoS的出口隊列策略 (入口需要配置信任CoS)

3750

<#root>

Global config:
3750(config)#

mls qos

Interface config:

```
interface GigabitEthernet1/0/1
 mls qos trust cos
```

Related show cli:

3750#

show mls qos

```
QoS is enabled
QoS ip packet dscp rewrite is enabled
```

3750#

show mls qos interface gig1/0/1

```
GigabitEthernet1/0/1
trust state: trust cos
trust mode: trust cos
trust enabled flag: ena
COS override: dis
default COS: 0
DSCP Mutation Map: Default DSCP Mutation Map
Trust device: none
qos mode: port-based
```

3750 #

show mls qos maps cos-output-q

```
Cos-outputq-threshold map:
cos:          0  1  2  3  4  6  7
-----
```

```
queue-threshold: 2-1 2-1 3-1 3-1 4-1 1-1 4-1 4-1
```

Note: cos value 0 maps to 2-1 [queue-set1 : queue2 threshold 1]

3850

<#root>

Ingress: apply policy-map trust-cos

Egress: create class based on cos and have queuing action for each class

Ingress policy:

3850#

```
show run policy-map trust-cos
```

```
class class-default
  set cos cos table default
```

3850#

```
show table-map default
```

```
Table Map default
  default copy
```

Egress policy:

3850#

```
show run policy-map example2
```

```
class cos5
  bandwidth percent 15
class cos0_1
  bandwidth percent 25
class cos2_3
  bandwidth percent 40
class cos4_6_7
  bandwidth percent 20
```

3850#

```
show run class-map cos5
```

```
class-map match-any cos5
  match cos 5
```

3850#

```
show run class-map cos0_1
```

```

class-map match-any cos0_1
  match cos 0
  match cos 1

3850#

show run class-map cos2_3

class-map match-any cos2_3
  match cos 2
  match cos 3

3850#

show run class-map cos4_6_7

class-map match-any cos4_6_7
  match cos 4
  match cos 6
  match cos 7

```

示例3：啟用QoS的信任DSCP

3750 (全球)	3750 (介面)	3850
MLS QoS	介面「MLS QoS trust DSCP」[基於到隊列集1的預設DSCP對映]	輸入預設信任DSCP 基於DSCP的出口排隊策略

3750

<#root>

```

config
3750(config)#

```

```

mls qos

```

<- Global

```

interface GigabitEthernet1/0/1

```

<- Interface

```

mls qos trust dscp

```

3750#

sh mls qos interface gig1/0/1

GigabitEthernet1/0/1

trust state:

trust dscp

trust mode: trust dscp

trust enabled flag: ena

COS override: dis

default COS: 0

DSCP Mutation Map: Default DSCP Mutation Map

Trust device: none

qos mode: port-based

3750#

show mls qos maps dscp-output-q

Dscp-outputq-threshold map:

d1	d2	0	1	2	3	4	5	6	7	8	9
0	:	02-01	02-01	02-01	02-01	02-01	02-01	02-01	02-01	02-01	02-01
1	:	02-01	02-01	02-01	02-01	02-01	02-01	03-01	03-01	03-01	03-01
2	:	03-01	03-01	03-01	03-01	03-01	03-01	03-01	03-01	03-01	03-01
3	:	03-01	03-01	04-01	04-01	04-01	04-01	04-01	04-01	04-01	04-01
4	:	01-01	01-01	01-01	01-01	01-01	01-01	01-01	01-01	04-01	04-01
5	:	04-01	04-01	04-01	04-01	04-01	04-01	04-01	04-01	04-01	04-01
6	:	04-01	04-01	04-01	04-01						

3850

<#root>

Ingress: default trust dscp, no policy needed

Egress: use dscp as classification and add queuing action based on customer need

One Sample config:

Policy-map:

3850#

show run policy-map dscp-shape

class dscp56

shape average percent 10

class dscp48

shape average percent 11

class dscp40


```

    shape average percent 12
class dscp32
    shape average percent 13
Class-map:
3850#

show run class-map dscp56

class-map match-any dscp56
    match dscp cs7

3850#

show run class-map dscp48

class-map match-any dscp48
    match dscp cs6

3850#

show run class-map dscp40

class-map match-any dscp40
    match dscp cs5

3850#

show run class-map dscp32

class-map match-any dscp32
    match dscp cs4

```

示例4：使用具有設定策略的介面啟用QoS

3750 (全球)	3750 (介面)	3850
MLS QoS	介面輸入策略，帶有用於標籤CoS/DSCP值的設定操作 [標籤的值用於出口對映]	需要顯式出口策略來執行隊列對映

3750

<#root>

3750#

show run class-map dscp-1

```
class-map match-any dscp-1
match ip dscp 1
```

```
c3750#
```

```
show run policy-map set-dscp-63
```

```
class dscp-1
set dscp 63
```

```
3750#
```

```
show run interface f7/0/2
```

```
interface FastEthernet7/0/2
```

```
mls qos trust dscp
```

```
service-policy input set-dscp-63
```

```
3750#
```

```
show policy-map interface f7/0/2
```

```
FastEthernet7/0/2
```

```
Service-policy input: set-dscp-63
```

```
Class-map: dscp-1 (match-any)
0 packets, 0 bytes
5 minute offered rate 0 bps, drop rate 0 bps
Match: ip dscp 1
```

```
Class-map: class-default (match-any)
0 packets, 0 bytes
5 minute offered rate 0 bps, drop rate 0 bps
Match: any
0 packets, 0 bytes
5 minute rate 0 bps
```

Note: Pkts come in interface fa7/0/2, dscp1 can be marked to dscp63 which mapping based on the existing mapping table, other pkts can retain original dscp value mapping accordingly

```
3850
```

```
<#root>
```

```
Input can be same as 3750 config
```

Egress: can add queuing action under class dscp-63

One sample config:

```
3850#  
show run policy-map dscp63-queuing
```

```
class dscp63  
  bandwidth percent 50
```

```
3850#  
show class-map dscp63
```

```
Class Map match-any dscp63  
  Match dscp 63
```

示例5：在介面上啟用無MLS QoS信任的QoS

3750 (全球)	3750 (介面)	3850
MLS QoS	介面未配置MLS QoS信任 CoS/DSCP [CoS/DSCP可以設定為0]	具有類預設值的介面輸入策略 設定DSCP 0，輸出策略，類為DSCP0，隊列操作為

3750

<#root>

```
Global:  
c3750(config)#
```

```
mls qos
```

```
Interface:  
interface GigabitEthernet2/0/45  
!
```

3850

<#root>

Input policy:

c3850#

show run policy-map example5-input

```
class class-default
  set dscp default
```

Output policy:

c3850#

show run policy-map example5-output

```
class dscp0
  shape average percent 10
```

<- queuing action based on customer need

Attach to the ingress port:

c3850#

show run interface gig1/0/1

```
interface GigabitEthernet1/0/1
  service-policy input example5-input
```

Attach to the egress port:

c3850#

show run interface gig1/0/2

```
interface GigabitEthernet1/0/2
  service-policy output example5-output
```

示例6：通過更改CoS/DSCP隊列對映啟用QoS

3750 (全球)	3750 (介面)	3850
MLS QoS SRR隊列對映配置 (MLS QoS SRR-queue output [CoS-map queue [1] threshold [3] [4 5])	A、b、c和d可以使用新的 對映表 [CoS 4和5可以對映到隊 列1閾值3]	具有排隊操作的出口 顯式分類

3750

<#root>

Before config:

3750#

show mls qos maps cos-output-q

Cos-outputq-threshold map:

cos:

0

1 2 3 4 5 6 7

queue-threshold:

2-1

2-1 3-1 3-1 4-1 1-1 4-1 4-1

User config mapping:

3750(config)#

mls qos srr-queue output cos-map queue 3 threshold 3 0

New mapping table after config

3750#

show mls qos maps cos-output-q

Cos-outputq-threshold map:

cos:

0

1 2 3 4 5 6 7

queue-threshold:

3-3

2-1 3-1 3-1 4-1 1-1 4-1 4-1

3850

<#root>

Input : need apply trust-cos policy:

3850#

show run policy-map trust-cos

```
class class-default
  set cos cos table default
```

3850#

```
show table-map default
```

```
Table Map default
  default copy
```

Egress policy:

Before changing mapping:

Sample config:

3850#

```
show run policy-map example2
```

```
class cos5
  bandwidth percent 15
class cos0_1
  bandwidth percent 25
class cos2_3
  bandwidth percent 40
class cos4_6_7
  bandwidth percent 20
```

3850#

```
show run class-map cos5
```

```
class-map match-any cos5
  match cos 5
```

3850#

```
show run class-map cos0_1
```

```
class-map match-any cos0_1
  match cos 0
  match cos 1
```

3850#

```
show run class-map cos2_3
```

```
class-map match-any cos2_3
  match cos 2
  match cos 3
```

3850#

```
show run class-map cos4_6_7
```

!

```
class-map match-any cos4_6_7
  match cos 4
  match cos 6
  match cos 7
```

After mapping changing , corresponding sample config:

```
3850#
```

```
show run policy-map example6
```

```
class cos5
  bandwidth percent 15
class cos1
  bandwidth percent 25
class cos0_2_3
  bandwidth percent 40
class cos4_6_7
  bandwidth percent 20
```

```
3850#
```

```
show class-map cos5
```

```
Class Map match-any cos5 (id 25)
  Match cos 5
```

```
3850#
```

```
show run class-map cos1
```

```
class-map match-any cos1
  match cos 1
```

```
3850#
```

```
show run class-map cos0_2_3
```

```
class-map match-any cos0_2_3
  match cos 0
  match cos 2
  match cos 3
```

```
3850#
```

```
show run class-map cos4_6_7
```

```
class-map match-any cos4_6_7
  match cos 4
  match cos 6
  match cos 7
```

示例7：啟用DSCP突變的MLS

3750 (全球)	3750 (介面)	3850
MLS QoS DSCP突變	介面需要配置MLS QoS信任DSCP MLS QoS DSCP-mutation name [name is defined in global]	表對映對映不同DSCP的介面輸入策略。

3750

<#root>

Global config :

3750(config)#

mls qos map dscp-mutation dscp-mutation 0 1 to 63

3750(config)#

mls qos map dscp-mutation dscp-mutation 2 3 to 62

Global show cli:

c3750#

show mls qos maps dscp-mutation

Dscp-dscp mutation map:

dscp-mutation:

d1 : d2 0 1 2 3 4 5 6 7 8 9

0 :

63 63 62

62 04 05 06 07 08 09

1 : 10 11 12 13 14 15 16 17 18 19

2 : 20 21 22 23 24 25 26 27 28 29

3 : 30 31 32 33 34 35 36 37 38 39

4 : 40 41 42 43 44 45 46 47 48 49

5 : 50 51 52 53 54 55 56 57 58 59

6 : 60 61 62 63

Dscp-dscp mutation map:

Default DSCP Mutation Map:

d1 : d2 0 1 2 3 4 5 6 7 8 9

0 : 00 01 02 03 04 05 06 07 08 09

1 : 10 11 12 13 14 15 16 17 18 19

2 : 20 21 22 23 24 25 26 27 28 29

3 : 30 31 32 33 34 35 36 37 38 39

4 : 40 41 42 43 44 45 46 47 48 49

5 : 50 51 52 53 54 55 56 57 58 59

6 : 60 61 62 63

Interface config:

```
interface FastEthernet7/0/3
  description trust dscp
  mls qos trust dscp
  mls qos dscp-mutation dscp-mutation
```

c3750#

```
show mls qos interface f7/0/3
```

```
FastEthernet7/0/3
trust state: trust dscp
trust mode: trust dscp
trust enabled flag: ena
COS override: dis
default COS: 0
DSCP Mutation Map:
```

dscp-mutation

```
Trust device: none
qos mode: port-based
```

Interface using default dscp-table:

c3750#

```
show mls qos interface g3/0/1
```

```
GigabitEthernet3/0/1
trust state: not trusted
trust mode: not trusted
trust enabled flag: ena
COS override: dis
default COS: 0
DSCP Mutation Map:
```

Default DSCP Mutation Map

```
Trust device: none
qos mode: port-based
```

3850

<#root>

```
Ingress : apply policy with dscp table-map
Egress: classify on new dscp value with queuing action
```

Ingress:

3850#

```
show table-map dscp-2-dscp
```

```
Table Map dscp-2-dscp
from 0 to 63
from 1 to 63
from 2 to 62
from 3 to 62
default copy
3850#
```

```
show run policy-map example7-input
```

```
class class-default
set dscp dscp table dscp-2-dscp
```

Egress:

3850#

```
show run policy-map example7-output
```

```
class dscp63
shape average percent 20 [ queuing action based on the user need]
class dscp62
shape average percent 30 [queuing action based on user need]
```

示例8：通過聚合策略啟用MLS QoS

3750 (全球)	3750 (介面)	3850
MLS QoS彙總管制 [所有類都使用agg-policing可以共用策略速率。]	需要介面級別配置	Agg-policing(HQoS)
MLS QoS aggregate-policer agg_traffic 8000 8000 exceed-action drop	介面具有將agg_traffic作為agg策略器名稱的策略。	

3750

<#root>

Global:

```
mls qos aggregate-policer agg_traffic 8000 8000 exceed-action drop
```

```

Access-list:
access-list 1 permit 192.168.0.0 0.0.0.255
access-list 2 permit 10.0.0.0 0.0.0.255

```

```

Class-map:
class-map match-all agg1
  match access-group 1
class-map match-all agg2
  match access-group 2

```

```

Policy-map:
policy-map agg_policer
  class agg1
    set dscp 40
  police aggregate agg_traffic
  class agg2
    set dscp 55
  police aggregate agg_traffic

```

Note: class agg1 and agg2 can share the same policing rate

3850

```

policy-map agg_police
class class-default
police cir 8000
service-policy child

```

```

policy-map child
  class agg1
    set dscp 40
  class agg2
    set dscp 55

```

示例9：啟用MLS並標籤策略

3750 (全域組態)	3750 (介面)	3850
MLS QoS map policed-DSCP x to y	只要介面具有策略策略，即exceed is transmit，全域性CLI就能夠生效[僅輸入]。	一個表對映用於超出，一個表對映用於違反策略、輸入和輸出的操作。

3750

<#root>

Default policed-dscp map:

3750#

show mls qos map policed-dscp

Policed-dscp map:

d1 : d2 0 1 2 3 4 5 6 7 8 9

0 : 00 01 02 03 04 05 06 07 08 09
1 : 10 11 12 13 14 15 16 17 18 19
2 : 20 21 22 23 24 25 26 27 28 29
3 : 30 31 32 33 34 35 36 37 38 39
4 : 40 41 42 43 44 45 46 47 48 49
5 : 50 51 52 53 54 55 56 57 58 59
6 : 60 61 62 63

User define policed-dscp map:

3750(config)#

mls qos map policed-dscp 0 10 18 24 46 to 8

3750#

show mls qos map policed-dscp

Policed-dscp map:

d1 : d2 0 1 2 3 4 5 6 7 8 9

0 : 08 01 02 03 04 05 06 07 08 09
1 : 08 11 12 13 14 15 16 17 08 19
2 : 20 21 22 23 08 25 26 27 28 29
3 : 30 31 32 33 34 35 36 37 38 39
4 : 40 41 42 43 44 45 08 47 48 49
5 : 50 51 52 53 54 55 56 57 58 59
6 : 60 61 62 63

Policy config:

```
class-map match-all policed-dscp
match access-group 2
class policed-dscp
police 8000 8000 exceed-action policed-dscp-transmit
```

Attach the above policy at ingress:

Note : Mark down table can be used by policing and interface policing
as long as exceed action is transmit

3850

<#root>

```

3850(config)#table-map policed-dscp
3850(config-tablemap)#map from 0 to 8
3850(config-tablemap)#map from 10 to 8
3850(config-tablemap)#map from 18 to 8
3850(config-tablemap)#map from 24 to 8
3850(config-tablemap)#map from 46 to 8
3850#

```

```
show table-map policed-dscp
```

```

Table Map policed-dscp
  from 0 to 8
  from 10 to 8
  from 18 to 8
  from 24 to 8
  from 46 to 8
  default copy

```

```
3850#
```

```
show policy-map policed-dscp
```

```

Policy Map policed-dscp
  Class class-default
    police cir percent 10
      conform-action transmit
      exceed-action set-dscp-transmit dscp table policed-dscp

```

示例10：通過隊列限制配置啟用MLS QoS

3750 (全球)	3750 (介面)	3850
<p>MLS QoS queue-set輸出 1 閾值 1100 100 50 200 (隊列限制)</p> <p>[1 ->queue-set 1, 1->第一個隊列, 100 ->threshold 1, 100 ->閾值2, 50 ->保留緩衝區, 200 ->最大閾值]</p>	<p>Interface config queue-set [預設值為queue-set 1]</p>	<p>具有隊列操作和q-limit配置的出口隊列策略。</p>

3750

<#root>

Global config:

```
mls qos srr-queue output cos-map queue 2 threshold 1 2
mls qos srr-queue output cos-map queue 2 threshold 2 3
mls qos srr-queue output cos-map queue 2 threshold 3 6 7
```

If no interface config, the queue-set 1 can be used:

3750#

show mls qos queue-set 1

```
Queueset: 1
Queue      :      1      2      3      4
-----
buffers    :      15     25     40     20
threshold1:     100    125    100     60
threshold2:     100    125    100    150
reserved   :       50    100    100     50
maximum    :      200    400    400    200
```

For interface config queue-set 2 explicitly:

3750#

show mls qos queue-set 2

```
Queueset: 2
Queue      :      1      2      3      4
-----
buffers    :      25     25     25     25
threshold1:     100    200    100    100
threshold2:     100    200    100    100
reserved   :       50     50     50     50
maximum    :     400    400    400    400
```

3850

<#root>

(multiple class with queue-limit turn on)

3850#

show policy-map q-limit

```

Policy Map q-limit
Class users-class
  Queuing action ( shaper, bandwidth and bandwidth remaining)
  queue-limit cos 2 percent 50
  queue-limit cos 3 percent 50
  queue-limit cos 6 percent 70
  queue-limit cos 7 percent 70

```

Note: using the above config, cos 2 and cos 3 can be dropped earlier than cos 6 and 7

示例11：通過隊列緩衝區配置啟用MLS QoS

3750 (全球)	3750 (介面)	3850
MLS QoS queue-set output [1]緩衝區[15 25 40 20]	Interface config queue-set [default queue-set 1]	具有隊列操作和隊列緩衝區比率的 策略對映[0-100]。

3750

<#root>

Default queue-buffer :

3750#

show mls qos queue-set 1

```

Queueset: 1
Queue      :      1      2      3      4
-----
buffers    :      25      25      25      25
threshold1:     100     200     100     100
threshold2:     100     200     100     100
reserved   :       50       50       50       50
maximum    :     400     400     400     400

```

User define queue-buffer:

mls qos queue-set output 1 buffers 15 25 40 20

3750#

show mls qos queue-set 1

```

Queueset: 1
Queue      :      1      2      3      4
-----
buffers    :      15      25      40      20
threshold1:     100     125     100     60

```

```

threshold2:    100    125    100    150
reserved  :    50    100    100    50
maximum   :    200    400    400    200

```

3850

<#root>

3850#

```
show policy-map queue-buffer
```

```

Policy Map queue-buffer
  Class cos7
    bandwidth percent 10
    queue-buffers ratio 15
  Class cos1
    bandwidth percent 30
    queue-buffers ratio 25

```

class-map:

=====

3850#

```
show class-map cos7
```

```
Class Map match-any cos7 (id 22)
```

```
Match cos 7
```

3850#

```
show class-map cos1
```

```
Class Map match-any cos1 (id 28)
```

```
Match cos 1
```

Attach to the interface at egress direction:

示例12：通過頻寬配置啟用MLS QoS

3750 (全球)	3750 (介面)	3850
MLS QoS (共用模式)	介面層級設定 SRR隊列頻寬共用1 30 35 5	策略對映中的頻寬

3750

<#root>

Default share and shape mode:

3750-3stack#

show mls qos interface gig 1/0/1 queueing

```
GigabitEthernet1/0/1
Egress Priority Queue : disabled
Shaped queue weights (absolute) : 25 0 0 0
Shared queue weights : 25 25 25 25
The port bandwidth limit : 100 (Operational Bandwidth:100.0)
The port is mapped to qset : 1
```

User config share mode under interface:

```
interface GigabitEthernet1/0/1
 srr-queue bandwidth share 40 30 20 10
 srr-queue bandwidth shape 0 0 0 0
```

3750#

show mls qos interface gig1/0/1 queueing

```
GigabitEthernet1/0/1
Egress Priority Queue : disabled
Shaped queue weights (absolute) : 0 0 0 0
Shared queue weights : 40 30 20 10
The port bandwidth limit : 100 (Operational Bandwidth:100.0)
The port is mapped to qset : 1
```

3850

<#root>

3850#

show policy-map bandwidth

```
Policy Map bandwidth
Class cos1
 bandwidth percent 40
Class cos2
 bandwidth percent 30
Class cos3
 bandwidth percent 20
Class class-default
 bandwidth percent 10
```

3850#

show class-map cos1

Class Map match-any cos1

Match cos 1

3850#

show class-map cos2

Class Map match-any cos2

Match cos 2

3850#

show class-map cos3

Class Map match-any cos3 (id 26)

Match cos 3

3850#

show class-map cos4

Class Map match-any cos4 (id 25)

Match cos 4

示例13：啟用優先順序的MLS QoS

3750 (全球)	3750 (介面)	3850
MLS QoS [加速隊列] 注意：加速隊列與優先順序隊列相同	Interface level config priority-queue out [使相應的隊列集的第1個隊列作為嚴格的優先順序隊列]	策略對映中的優先順序級別1

3750

<#root>

```
interface GigabitEthernet1/0/2
  priority-queue out
end
```

3750#

```
show mls qos interface gig1/0/2 queueing
```

```
GigabitEthernet1/0/2
Egress Priority Queue : enabled
Shaped queue weights (absolute) : 25 0 0 0
Shared queue weights : 25 25 25 25
The port bandwidth limit : 100 (Operational Bandwidth:100.0)
The port is mapped to qset : 1
```

3850

<#root>

3850#

```
show run policy-map priority-queue
```

```
class cos7
  priority level 1 ? strict priority
class cos1
  shape average percent 10
```

Attach the above policy to interface at egress side:

示例14：通過整形器配置啟用MLS QoS

3750

<#root>

```
Default shape mode:
GigabitEthernet1/0/3
Egress Priority Queue : disabled
Shaped queue weights (absolute) : 25 0 0 0
Shared queue weights : 25 25 25 25
The port bandwidth limit : 100 (Operational Bandwidth:100.0)
The port is mapped to qset : 1
```

User define shape mode:

```
interface GigabitEthernet1/0/3
  srr-queue bandwidth shape 4 4 4 4
```

3750-3stack#

```
show mls qos interface gigabitEthernet 1/0/3 queueing
```

GigabitEthernet1/0/3
Egress Priority Queue : disabled
Shaped queue weights (absolute) :

4 4 4 4

Shared queue weights : 25 25 25 25
The port bandwidth limit : 100 (Operational Bandwidth:100.0)
The port is mapped to qset : 1

3850

<#root>

3850#

show policy-map shape

Policy Map shape
Class cos1
Average Rate Traffic Shaping

cir 25%

Class cos2
Average Rate Traffic Shaping

cir 25%

Class cos3
Average Rate Traffic Shaping

cir 25%

Class cos4
Average Rate Traffic Shaping

cir 25%

示例15：通過頻寬啟用MLS QoS

3750 (全球)	3750 (介面)	3850
-------------	-------------	------

MLS QoS	SRR 隊列頻寬限制	速度、頻寬
---------	------------	-------

3750

<#root>

```
interface GigabitEthernet1/0/4
  srr-queue bandwidth limit 50
```

3750-3stack#

```
show mls qos interface g1/0/4 queueing
```

```
GigabitEthernet1/0/4
Egress Priority Queue : disabled
Shaped queue weights (absolute) : 25 0 0 0
Shared queue weights : 25 25 25 25
The port bandwidth limit : 50 (Operational Bandwidth:50.0)
The port is mapped to qset : 1
```

3850

<#root>

3850#

```
show policy-map default-shape
```

```
Policy Map default-shape
  Class class-default
    Average Rate Traffic Shaping
    cir 50%
  service-policy child
[ queuing based on customer need]
```

示例16:HQoS

3750 (全域性配置)	3750 (介面)	3850
類對映 , Policy-map	將策略附加到SVI 介面需要配置MLS QoS vlan_based	PV輸入策略

3750

<#root>

Note:

SVI: Parent [class acl based class-map->policing]

Child [class interface range class-map->marking]

Child class-map:

```
3750(config)#class-map cm-interface-1
3750(config-cmap)#match input gigabitethernet3/0/1 - gigabitethernet3/0/2
```

Child policy-map:

```
3750(config)#policy-map port-plcmap-1
3750(config-pmap)#class cm-interface-1
3750(config-pmap-c)#police 900000 9000 drop
```

Parent class-map matching acl:

```
3750(config)#access-list 101 permit ip any any
```

Parent class-map:

```
3750(config)#class-map cm-1
3750(config-cmap)#match access 101

3750(config)#policy-map vlan-plcmap
3750(config-pmap)#class cm-1
3750(config-pmap-c)#set dscp 7
3750(config-pmap-c)#service-policy port-plcmap-1
3750(config-pmap-c)#exit
3750(config-pmap)#class cm-2
3750(config-pmap-c)#service-policy port-plcmap-1
3750(config-pmap-c)#set dscp 10
```

Attach the policy to the interface:

```
3750(config)#interface vlan 10
3750(config-if)#service-policy input vlan-plcmap
```

3850

<#root>

Note: Due to target change, this can't be one to one mapping, need config based on customer requirement.

Target is at port level
Parent classify on vlan
Child: none vlan classification [for example cos/dscp]

3850#

show run policy-map PV_parent_marking_child_policing

```
class vlan10
  set dscp 63
  service-policy child_class_dscp_policing
class vlan11
  set cos 5
  service-policy child_class_dscp_policing
class vlan12
  set precedence 6
  service-policy child_class_dscp_policing
```

3850#

show run policy-map child_class_dscp_policing

```
class dscp1
  police cir percent 12
class dscp2
  police cir percent 15
class dscp3
  police cir percent 20
class class-default
  police cir percent 22
```

3850#

show run class-map vlan10

```
class-map match-any vlan10
  match vlan 10
```

3850#

show run class-map vlan11

```
class-map match-any vlan11
  match vlan 11
```

3850#

show run class-map vlan12

```
class-map match-any vlan12
  match vlan 12
```

3850#

show run class-map dscp1

```
class-map match-any dscp1  
  match dscp 1
```

```
3850#
```

```
show run class-map dscp2
```

```
class-map match-any dscp2  
  match dscp 2
```

```
3850#
```

```
show run class-map dscp3
```

```
class-map match-any dscp3  
  match dscp 3
```

相關資訊

- [思科技術支援與下載](#)

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。