

ل احال صا و ة مدخل ا ة دوج ا طخ ا فاش ك تس ا ل ل د NCS 5500 Series

تا ي و ت ح م ل ا

[ة م د ق م ل ا](#)

[NCS5500 ل ع ة مدخل ا ة دوج ذ ي ف ن ت](#)

[ا ح ا ل ص ا و ا ط خ ا ل ا ف ا ش ك ت س ا ت ا د ا ش ر ا](#)

[Ingress ة م د خ ة دوج](#)

[Egress ة م د خ ة دوج](#)

[FMQs ة ب ق ا ر م](#)

[ع ي م ح ت ل ل ة ي ف ا ض ا ر م ا و ا](#)

[ت ا ر ي ذ ح ت ل ل / د و ي ق ل ل ا](#)

[م س و](#)

[ي د د ر ت ل ل ا ق ا ط ن ل ل ا](#)

[Ingress ة م د خ ة دوج](#)

[Egress ة م د خ ة دوج](#)

[HQoS](#)

[م ا ز ت ل ل ا ل د ع ب د م ت ع م ر ي غ ن ي و ك ت ر ي ذ ح ت](#)

ة م د ق م ل ا

ب ر ا ق ت م ا ط ن ة ل س ل س ل ا ح ا ل ص ا و ة م د خ ل ا ة دوج ا ط خ ا ف ا ش ك ت س ا ل ل د ن ت س م ل ا ا ذ ه ف ص ي
Cisco ن م 5500 (NCS) ت ا ك ب ش ل ل ا

NCS5500 ل ع ة مدخل ا ة دوج ذ ي ف ن ت

- ة ك ب ش ل ل ا ة د ح و ل T M ج ر خ م و ل خ د م ل ع NCS5500 ف ي QoS ذ ي ف ن ت م ت ي
ل ل ا ج و ر خ ل ل ا ر ا ط ت ن ا م ئ ا و ق ن ت س ت ث ي ح ، ة ي ر ه ا ط ل ا ج ا ر خ ل ل ا ر ا ط ت ن ا ة م ئ ا ق ة ي ن ب ذ ي ف ن ت ب
ج ن م ل ا ط ط خ و ن ا م ت ئ ا ل ا ت ا ب ل ط
- ه ي ج و ت ة د ا ع ا ز ا ه ج د د ح ي . ل و خ د ل ا ه ي ج و ت ة د ا ع ا ز ه ج ا ل ع ي ل ع ف ل ا ت ق و م ل ا ن ي ز خ ت ل ا ث د ح ي
ه ي ج و ت ة د ا ع ا ز ا ه ج ي ا ل ن ا م ت ئ ا ل ا ح ن م ق ي ر ط ن ع ا ه ل ا س ر ا ن ك م ي ي ت ل ا ر و ر م ل ا ة ك ر ا د ق م ج ر خ م ل ا
ن ا م ت ئ ا ل ا ب ل ط ي ذ ل ا و ، ل خ د م ل ا ن م
- ل ك ل ل ا ل ا ث ا م ت م ا خ س ن ا خ س ن م ت ي ة ل و د ج ر ص ن ع و ا ج ر خ م ن ر ا ق ي ا ل ر ا ط ت ن ا ل ا م ئ ا و ق ل ك
م ئ ا و ق ه ذ ه ر ا ط ت ن ا ل ا م ئ ا و ق ي م س ت . ة ه ج ا و ل ا ك ل ت ي ل ا م ز ح ل ل ا ل ا س ر ا د ي ر ت ي ت ل ا ل و خ د ل ا ة ز ه ج ا
(VOQ). ي ر ه ا ط ل ا ج ا ر خ ل ل ا ر ا ط ت ن ا
- ر ص ن ع م ع د ي ، ج و ر خ ل ل ا د ن ع . ل ا ع ف ل ك ش ب ة ل و د ج ر ص ن ع و ا ة ه ج ا و ل ل ك ل ر ا ط ت ن ا م ئ ا و ق 8 م ع د م ت
ا د ا ن ت س ا ة ن ئ ا د ة د ص ر ا ة ل و د ج ل ا ر ف و ت . ة د ا ي ز ل ا و ، ي ص ق ا ل ا د ح ل ا ، ي ن د ا ل ا د ح ل ا ، ة ي و ل و ا ل ا ة ل و د ج ل ا
ت ا م س ل ل ا ه ذ ه ي ل ل ا
- م ي ق ن ي و ك ت م ت ي ا م ن ي ب ، ج و ر خ ل ل ا د ن ع ة ه ج ا و ل ة ل و د ج ل ا ت ا م س ن ي و ك ت م ت ي ، ك ل ذ ل ة ج ي ت ن و

ل.لوخذلا دن ع ماحدزالا بنجتو ماحدزالا يف مكحتلا

- VOQ لخاد طبرلا عضې وه انايم جاتن/ةي اغ ي طعي ىل طبر لسري نأ irpp ل ررقي امدن ع ةمئاق يف ةمزلال عضو نكمي ناك اذا امم ققحتلا متي ، ةمزلال راطتنا مئاقو اناثأ . صاخ ىل اذانتسا راطتنا ل.
 - ةهجاول (VSQ) ةيرهظلا تايئاصحإل راطتنا ةمئاقو تقؤملا VOQ نزم لاغشإ دادعإ يف . تانايبلا رورم ةكرح تائف ىل اذانتسا تقؤملا نزملا ةرادا ططخم وه VSQ . لوخذلا
 - قفدتلا يف مكحتلا لاسرا مت وأ ةمزلال طاقسإ مت هنأ ام ةتقؤملا نزملا زواجت مت اذا متي ، يضارتفا لكشب . قباطملا مدختسملا نيوكت ىل اذانتسا لخدملا ذفنم ىل راطتنا ةمئاق نم ققحتلا يف تلشف اذا مزلال طاقسإ .
 - ةلصفنم ASICs ىل NCS5500 ب ةصاخلا (LCs) لوصولا يف مكحتلا مئاقو يوتحت ال ىل ةدنتسملا راطتنا مئاقو ذيفنتب ياساسأل ماظنلا موقوي . راطتنا مئاقول راطتنا ةمئاقول موهفم دجوي ال ، يلاتلابو . ةلودجلا ىل دن تست يتلاو ، يرهظلا جارخإل تاسايسلا عضو كلذكو تامالعال عضو تاءارجإ معدت يتلا لوخذلا ةمدخ تاسايس . لوخذلا طقف .
 - ةئف ىل دن تسې وه . راطتنا مئاقو تامالعال عضول افلتخم اموهفم NCS5500 ذفني . تاطحالما رورم ةكرح عم ناتم لعمل ناته قباطت ، جورخلا دن ع . رورملا ةكرحو ةمدخلا ةدوج راطتنا مئاقو ديدحتلو .
- ىل عوجرلا ىجري ، ليصافتلا نم ديزمل . رمأوالا فلتخمل ةدوجوملا دويقلا .

اهحالصإو عاطخأل فاشكتسا تاداشرا

Ingress ةمدخ ةدوج

ةيمه أو ةدئاف رثكأل رماوالا دحأ `show qos interface <interface>input|output` دعې

مت يتلا تاملعمل ضرعي وه . ةقبطملا ةمدخلا ةسايس لوح ةديفم تامولعم رفوي وه (كلذ ىل امو tail طاقسإل تابتعو ةشاشل او تاسايسلا عضاو ةلاح يف) اهليوحتو اهنويوكت . كلذ ىل امو ةبساحمل عونو ةيرهظلا راطتنا مئاقو تافرعمو .

لوخذلا ىل ع ةطيسب ةسايسب أدبا .

```
class-map match-any i_match
match precedence ipv4 3
match mpls experimental topmost 3
end-class-map
!
```

```
policy-map ingress_marking
class i_match
set qos-group 3
set discard-class 2
!
class class-default
!
end-policy-map
```

!

```
RP/0/RP0/CPU0:xrg-ncs-04#show qos interface hundredGigE 0/0/0/35 input
```

```
Mon Dec 4 21:30:44.131 UTC
```

```
NOTE:- Configured values are displayed within parentheses
```

```
Interface HundredGigE0/0/0/35 ifh 0x138 -- input policy
```

```
NPU Id: 5
```

```
Total number of classes: 2
```

```
Interface Bandwidth: 100000000 kbps
```

```
Policy Name: ingress_marking
```

```
Accounting Type: Layer1 (Include Layer 1 encapsulation and above)
```

```
-----  
Level1 Class = i_match
```

```
New qos group = 3
```

```
New discard class = 2
```

```
Default Policer Bucket ID = 0x21
```

```
Default Policer Stats Handle = 0x0
```

```
Policer not configured for this class
```

```
Level1 Class = class-default
```

```
Default Policer Bucket ID = 0x20
```

```
Default Policer Stats Handle = 0x0
```

```
Policer not configured for this class
```

عقوم show feature-mgr client qos-ea ما دختساب LC. لى HW في جهنلا ةجمرربب QoS_EA موقوي اهنويوكت متي تالاسايسلا لى ةماع ةرظن لى لوصحلا كنكمي <node> ةسايسلا صلخلم (LC). ةكبشلا في مكحتلارصنع لى

```
RP/0/RP0/CPU0:xrg-ncs-04#show feature-mgr client qos-ea policy summary location 0/0/CPU0
```

```
Mon Dec 4 22:03:12.371 UTC
```

```
Pol-Num Flags Classes Ref-cnt In-Hash Compiled Policy Name
```

```
-----  
19 0x00004000 2 4 Yes Yes ingress_marking
```

تائفلل في قباطي نيأ ىرت نأ كنكمي، رمأل اذهل لى لى صفتلارصنع لى لى ترظن اذا

```
RP/0/RP0/CPU0:xrg-ncs-04#show feature-mgr client qos-ea policy policy ingress_marking location 0/0/CPU0
```

```
Mon Dec 4 22:07:53.134 UTC
```

```
Policy name: ingress_marking
```

```
Policy Number: 19
```

```
Flags: 0x4000 [DNX_FM_POL_TOS]
```

```
Class Number: 2
```

```
Reference Count: 4
```

```
In Hash: Yes
```

```
Is Compiled: Yes
```

```
Level: 0 Class Number: 0 Class Name: i_match
```

```
Match Count: 2 Flags: 0x0 Logical Op: MATCH_ANY
```

```
ACE: 0 Class:0 Match:0 proto IPV4 Flags:0x8011 [Grant]
```

```
Source IPv4 Address: 0.0.0.0 (255.255.255.255)
```

```
Destination IPv4 Address: 0.0.0.0 (255.255.255.255)
```

```
Precedence Value: 3
```

```

UNKNOWN: UNKNOWN: UNKNOWN: ACE: 0 Class:0 Match:1 proto MPLS Flags:0x208040 [Grant]
MPLS EXP Value: 3
UNKNOWN: UNKNOWN: UNKNOWN: Final List
ACE: 0 Class:0 Match:0 proto IPV4 Flags:0x8011 [Grant]
Source IPv4 Address: 0.0.0.0 (255.255.255.255)
Destination IPv4 Address: 0.0.0.0 (255.255.255.255)
Precedence Value: 3
UNKNOWN: UNKNOWN: UNKNOWN: ACE: 1 Class:0 Match:1 proto MPLS Flags:0x208040 [Grant]
MPLS EXP Value: 3
UNKNOWN: UNKNOWN: UNKNOWN:
Level: 0 Class Number: 1 Class Name: class-default
Match Count: 1 Flags: 0x0 Logical Op: MATCH_ANY
ACE: 0 Class:1 Match:0 proto ANY Flags:0x28000 [Grant][Default]
UNKNOWN: UNKNOWN: UNKNOWN: Final List
ACE: 2 Class:1 Match:0 proto ANY Flags:0x28000 [Grant][Default]
UNKNOWN: UNKNOWN: UNKNOWN:

```

صخلمل لل ضرع لوأ. تازيمل لةراد روظنم نم ةمدخلال ةدوج تامولعم ضرع نكمي امك

```

RP/0/RP0/CPU0:xrg-ncs-04#show feature-mgr client qos-ea feature summary location 0/0/CPU0
Mon Dec 4 22:30:09.362 UTC
IFH NPU DIR Lookup-type ACL-ID Refcnt Feature-Name
-----
0x138 5 IN IPV4_QOS 14 1 ingress_marking:0
0x138 5 IN IPV6_QOS 14 1 ingress_marking:0
0x138 5 IN MPLS_QOS 14 1 ingress_marking:0
0x138 5 IN L2_QOS 14 1 ingress_marking:0

```

ليصافات لل ضرع نكمي ةيلات لل ةوطخلال في

```

RP/0/RP0/CPU0:xrg-ncs-04#show feature-mgr client qos-ea feature feature-name ingress_marking:0
direction ingress lookup mpls interface HundredGigE 0/0/0/35 location 0/0/CPU0
Mon Dec 4 22:31:20.588 UTC

Feature name: ingress_marking:0
Lookup Type: MPLS_QOS
Direction: IN
Reference Count: 1
NPU: 5
Interfaces Attached: HundredGigE0_0_0_35
Number of Entries: 2
Number of Verified Entries: 0
Number of ACEs: 2
ACL ID: 14
ACL ID Ref Cnt: 4
ACL ID Min Length(bits): 0
ACL ID Max Length(bits): 5
ACL ID Num Entries: 30
ACL ID Num Free Entries: 29
Compression Level: 0(UNCOMPRESSED)

```

ضرعي دق. ةهجاو لي لع ةمدخلال جهن قي ببطت دنع ثادحلأل بيترت ea_ ةمدخلال ةدوج عبتت ضرعي
هلشف ةلاح في لكاشم

```

RP/0/RP0/CPU0:xrg-ncs-04#show qos ea trace all reverse location 0/0/CPU0

```

Mon Dec 4 22:17:26.297 UTC
3077 wrapping entries (36992 possible, 18816 allocated, 0 filtered, 3077 total)
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: (line# 2882) : Responded to IM (batch size: 1)
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: post_caps_processing : Registering with ETHER EA for subid notification. Bulk count 1
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: caps_add_notify_remote Input num of interfaces 1
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: process_caps_add : End: count = 1 ok_count 1. New num_policies_in 1 num_policies_out 2
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 SCOL: scol_interface_add : ifh 0x138 ea_intf_type MainIf : interface added to SCOL tree
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 SCOL: scol_interface_add_internal : ifh 0x138: after avl_tree_insert, new tree size is 1
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 UTIL: (line# 1665) Child info aggr bw add: Current propagated_bw_sum in npu_ctx after adding propagated_bw in if_qos 0 is 0, ifh 0x138
Dec 4 21:30:18.280 qos_ea/int_evts 0/0/CPU0 t14563 UTIL: insert_if_qos_from_list_by_npu_ctx : Inserting to list: if_qos 0x3087c0bb78 prev 0x0 next 0x0 ifh 0x138 head 0x0 tail 0x0 count 0
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 ACTN: results_add for ifh 0x138 with pmap ingress marking
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: fm_program : npu_id 5 ifh 0x138 policy_name ingress_marking :Compiling policy and sending VMR to FM
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 ACTN: (line# 1597) : class_name class-default offset 0 policer_id 32: configuring policer...
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : cir_kbps 720000000 cir_burst_kbits 32768 cir_burst 4194304pir_kbps 720000000 cir_burst_kbits 32768 pir_burst 4194304
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : ifh 0x138 npu 5 offset 0 policer_id 32 mode/policer_type 0/0 inlif 0
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : for ifh 0x138 for npu 5 offset 0
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 ACTN: (line# 1597) : class_name i_match offset 1 policer_id 33: configuring policer...
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : cir_kbps 720000000 cir_burst_kbits 32768 cir_burst 4194304pir_kbps 720000000 cir_burst_kbits 32768 pir_burst 4194304
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : ifh 0x138 npu 5 offset 1 policer_id 33 mode/policer_type 0/0 inlif 0
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : for ifh 0x138 for npu 5 offset 1
Dec 4 21:30:18.217 qos_ea/int_evts 0/0/CPU0 t14563 ACTN: mark_actn_process Unconditional mark set for cmaps i_match
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 ACTN: resource_cfg for ifh 0x138 ul_ifh 0x0 with pmap ingress_marking
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 CMAP: classmap_process : chd 0x7feedd339b98, if_qos 0x3087c0bb78, class_info 0x3087c0b368
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 PWALK: preprocess_action : ifh 0x138 ul_ifh 0x0 policy_name ingress_marking class_name class-default
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 PWALK: pwalk_process_class : depth 0, usr_data->class_list 0x3087c0bb90, class_name class-default
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 CMAP: classmap_process : chd 0x7feedd33b478, if_qos 0x3087c0bb78, class_info 0x3087c0b770
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 PWALK: preprocess_action : ifh 0x138 ul_ifh 0x0 policy_name ingress_marking class_name i_match
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 PWALK: pwalk_process_class : depth 0, usr_data->class_list 0x3087c0bb90, class_name i_match
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 PWALK: pwalk_start_level : depth 0, stack 0x7fff8a11be40 ctx 0x7fff8a11c670
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 PWALK: policy_walk : policy_oper 0 policy_name ingress_marking ifh 0x138 ul_ifh 0x0 walk_flags 0x0
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 UTIL: if_qos_insert_to_db : Inserting to hash table: npu_id 5 ifh 0x138, ul_ifh 0x0, dir 0
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 RATE: dnx_gosea_policy_resolve : policy_name ingress_marking ifh 0x138 ul_ifh 0x0 intf_kbps 100000000

```

Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: policy_add : npu_id 5 ifh 0x138 ul_ifh
0x0 dir ingress policy_name ingress_marking num_classes 0 max_hierarchy 0
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 VRFY: policy_verify : Verifying policy
ingress_marking pmaphd 0x7feedd2c1088
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 UTIL: if_qos_init : Initializing if_qos
0x3087c0bb78 with npu_id 5 ifh 0x138 ul_ifh 0x0 direction ingress ea_intf_type MainIf
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 VRFY: check_policy_on_parent_subintf : Did
not find any reference to parent interface (0x138) in par_child_info_array
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 VRFY: check_policy_on_parent_subintf :
parent_ifh: 0x138, dir: 0 (ingress)
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 UTIL: intf_bw_get : Bandwidth of ifh 0x138 is
intf_kbps: 100000000 kbps
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: caps_add_int : ifh 0x138 ea_intf_type
MainIf dir ingress
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: caps_add : ifh 0x138 ea_intf_type
MainIf dir ingress policy_name ingress_marking
Dec 4 21:30:18.100 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: process_caps_add : 1 of 1 direction
ingress on interface 0x138 policy_name ingress_marking
Dec 4 21:30:18.093 qos_ea/int_evts 0/0/CPU0 t14563 CAPS: process_caps_add : batch count = 1 .
Current num_policies_in 0 num_policies_out 2
Dec 4 21:30:18.093 qos_ea/int_evts 0/0/CPU0 t14563 INT: im_msg_handler : Rx: caps add message
(batch size: 1)

```

class i_match. إلى لاثم لاي بس على تاسايس عضاو ةفاض وإجهن لاربي غت موقت امدنع
على موعدم ةسايس لاطي رخل يعضوم لالدي دع تال qos_ea. عبتت في رهظي فوسف
NCS5500.

```

RP/0/RP0/CPU0:xrg-ncs-04(config-pmap-c)#police rate percent 50
RP/0/RP0/CPU0:xrg-ncs-04(config-pmap-c-police)#commit

```

```

Dec 4 22:49:39.567 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : for ifh 0x138 for
npu 5 offset 0
Dec 4 22:49:39.567 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: (line# 147) : cir_kbps 50000000
cir_burst 4194304pir_kbps 0 pir_burst 0
Dec 4 22:49:39.567 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: (line# 144) : ifh 0x138 npu 5
offset 1 policer_type = 0 is_parent=0policer_id = 33
Dec 4 22:49:39.567 qos_ea/int_evts 0/0/CPU0 t14563 ACTN: (line# 1822) : class_name i_match
offset 0 policer_id 33: configuring policer...
Dec 4 22:49:39.567 qos_ea/int_evts 0/0/CPU0 t14563 ACTN: (line# 1597) : class_name i_match
offset 1 policer_id 33: configuring policer...

```

اضاي ةفاض إال show qos ةهجاو رمأ س ك عي:

```

RP/0/RP0/CPU0:xrg-ncs-04#show qos interface hundredGigE 0/0/0/35 input
Mon Dec 4 23:25:19.684 UTC
NOTE:- Configured values are displayed within parentheses
Interface HundredGigE0/0/0/35 ifh 0x138 -- input policy
NPU Id: 5
Total number of classes: 2
Interface Bandwidth: 100000000 kbps
Policy Name: ingress_marking
Accounting Type: Layer1 (Include Layer 1 encapsulation and above)
-----
Level1 Class = i_match
New qos group = 3
New discard class = 2

Policer Bucket ID = 0x21
Policer Stats Handle = 0x0

```

```
Policer committed rate = 49680000 kbps (50 %)
Policer conform burst = 4194304 bytes (default)
```

```
Level1 Class = class-default
```

```
Default Policer Bucket ID = 0x20
Default Policer Stats Handle = 0x0
Policer not configured for this class
```

هال عأ رمأل اذيفنت دن ع اضيأ ةل و ح م ل ا ة م ي ق ل ل ا _ e ا ة م د خ ل ل ا ة د و ج ع ب ت ت ض ر ع ي

ب ي ر ق ت م ت ي . ة ي ن ا ث ل ل ك ل ت ب و ل ي ك 22 ه ر ا د ق م ي د ي ا ز ت ة و ط خ م ح ج ت ا س ا ي س ل ل ا ع ض ا و م د خ ت س ي ا ه م ا د خ ت س ا د ن ع ة ي ن ا ث ل ل ا ي ف ت ب و ل ي ك 22 ة ع ر س ب ف ع ا ض م ب ر ق ا ل ل ا ه ن ي و ك ت م ت ي ت ل ا ة م ي ق ل ل ا ط خ ل ل ا ة ق ا ط ب ل ل ع ة غ ي ص ل ل ا ي ف

```
Dec 4 23:25:19.773 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : cir_kbps 49680000
cir_burst_kbits 32768 cir_burst 4194304pir_kbps 49680000 cir_burst_kbits 32768 pir_burst 4194304
Dec 4 23:25:19.773 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : ifh 0x138 npu 5
offset 1 policer_id 33 mode/policer_type 0/0 inlif 0
Dec 4 23:25:19.773 qos_ea/int_evts 0/0/CPU0 t14563 POLICER-INT: policer_get : for ifh 0x138 for
npu 5 offset 1
```

Egress ة م د خ ة د و ج

ن ا ن ث ا د ح ا و ي ق ل ت ي ن ا ن ك م ي NCS5500 ل ع . ر ا ط ت ن ا ل ا م ئ ا و ق ت ا ء ا ر ج ا و ر خ ل ل ا ة م د خ ة د و ج م ع د ت ة ي ل م ع ل ج ا ن م ا ذ ه . ر ا ط ت ن ا ل ا م ئ ا و ق ل د ح ا و و ت ا م ا ل ع ل ا ع ض و ل د ح ا و . ج ر خ م ل ا ه ا ج ت ا ي ف ة م د خ ة س ا ي س ز ي ي م ت :

```
class-map match-any e_mark
match qos-group 3
end-class-map
!

policy-map egress_marking
class e_mark
set mpls experimental imposition 2
!
class class-default
!
end-policy-map
!
```

```
RP/0/RP0/CPU0:xrg-ncs-06#show feature-mgr client qos-ea policy summary location 0/0/CPU0
Thu Dec 21 10:44:33.978 UTC
Pol-Num Flags Classes Ref-cnt In-Hash Compiled Policy Name
-----
1 0x01000000 2 1 Yes Yes egress_marking
```

```
RP/0/RP0/CPU0:xrg-ncs-06#show feature-mgr client qos-ea feature summary location 0/0/CPU0
Thu Dec 21 10:59:08.872 UTC
IFH NPU DIR Lookup-type ACL-ID Refcnt Feature-Name
-----
0x340 0 OUT MAP_ID_QOS 0 1 egress_marking:0
```

ج و ر خ ل ل ا ر ا ط ت ن ا م ئ ا و ق ج ه ن

```

class-map match-any tc1
  match traffic-class 1
end-class-map
!
class-map match-any tc2
  match traffic-class 2
end-class-map
!
class-map match-any tc3
  match traffic-class 3
end-class-map
!
class-map match-any tc4
  match traffic-class 4
end-class-map
!
class-map match-any tc5
  match traffic-class 5
end-class-map
!
policy-map POLICY_QOS_OUT
  class tc1
    priority level 1
    shape average percent 19
    queue-limit 500 us
  !
  class tc2
    priority level 2
    shape average percent 20
    queue-limit 500 us
  !
  class tc3
    bandwidth percent 1
  !
  class tc4
    bandwidth percent 20
  !
  class tc5
    bandwidth percent 20
  !
  class class-default
    bandwidth percent 20
  !
end-policy-map
!

```

One can quick verify where a QoS policy is applied.

```

RP/0/RP0/CPU0:xrg-ncs-04#show policy-map targets pmap-name POLICY_QOS_OUT location 0/0/CPU0
Mon Dec 18 21:13:01.463 UTC
1) Policymap: POLICY_QOS_OUT Type: qos
Targets (applied as main policy):
  HundredGigE0/0/0/35 output
Total targets: 1

Targets (applied as child policy):
Total targets: 0

```

راظتنالائ مئوق تافرعم كلكذكو اهانويوكت مت يتللا تاملعملال show qos interface رمألأ ضرعي
يلع لوصحلل كنكمي، كلكذ يلع ةوالع .هنويوكت مت راظتنالائ مئوق ءارجل مادختساب ةئف لكلك

رأظان الة مءاق مء لثم ةضارء فال اءاءع ال

RP/0/RP0/CPU0:xrg-ncs-04#show qos interface hundredGigE 0/0/0/35 output

Thu Dec 14 20:56:29.796 UTC

NOTE:- Configured values are displayed within parentheses

Interface HundredGigE0/0/0/35 ifh 0x138 -- output policy

NPU Id: 5

Total number of classes: 6

Interface Bandwidth: 100000000 kbps

VOQ Base: 1032

Accounting Type: Layer1 (Include Layer 1 encapsulation and above)

Level1 Class (HP1)	=	tc1
Egressq Queue ID	=	1033 (HP1 queue)
Queue Max. BW.	=	0 kbps (19 %)
Guaranteed service rate	=	19000000 kbps
TailDrop Threshold	=	1187840 bytes / 500 us (500 us)
WRED not configured for this class		
Level1 Class (HP2)	=	tc2
Egressq Queue ID	=	1034 (HP2 queue)
Queue Max. BW.	=	0 kbps (20 %)
Guaranteed service rate	=	20000000 kbps
TailDrop Threshold	=	1253376 bytes / 501 us (500 us)
WRED not configured for this class		
Level1 Class	=	tc3
Egressq Queue ID	=	1035 (LP queue)
Queue Max. BW.	=	100884395 kbps (default)
Queue Min. BW.	=	1020015 kbps (1 %)
Inverse Weight / Weight	=	1 / (BWR not configured)
Guaranteed service rate	=	1000000 kbps
TailDrop Threshold	=	1253376 bytes / 10 ms (default)

WRED not configured for this class

Level1 Class = tc4
Egressq Queue ID = 1036 (LP queue)
Queue Max. BW. = 100824615 kbps (default)
Queue Min. BW. = 20164923 kbps (20 %)
Inverse Weight / Weight = 1 / (BWR not configured)
Guaranteed service rate = 20000000 kbps
TailDrop Threshold = 25034752 bytes / 10 ms (default)

WRED not configured for this class

Level1 Class = tc5
Egressq Queue ID = 1037 (LP queue)
Queue Max. BW. = 100824615 kbps (default)
Queue Min. BW. = 20164923 kbps (20 %)
Inverse Weight / Weight = 1 / (BWR not configured)
Guaranteed service rate = 20000000 kbps
TailDrop Threshold = 25034752 bytes / 10 ms (default)

WRED not configured for this class

Level1 Class = class-default
Egressq Queue ID = 1032 (Default LP queue)
Queue Max. BW. = 100824615 kbps (default)
Queue Min. BW. = 20164923 kbps (20 %)
Inverse Weight / Weight = 1 / (BWR not configured)
Guaranteed service rate = 20000000 kbps
TailDrop Threshold = 25034752 bytes / 10 ms (default)

WRED not configured for this class

RP/0/RP0/CPU0:xrg-ncs-04#show feature-mgr client qos-ea policy summary location 0/0/CPU0

Thu Dec 14 21:27:30.486 UTC

Pol-Num Flags Classes Ref-cnt In-Hash Compiled Policy Name

3 0x00010000 6 0 Yes No POLICY_QOS_OUT

2	0x00000000	1	0	Yes	No p_out
1	0x00004000	2	4	Yes	Yes ingress_marking

RP/0/RP0/CPU0:xrg-ncs-04#show feature-mgr client qos-ea policy policy POLICY_QOS_OUT location 0/0/CPU0

Thu Dec 14 21:28:22.182 UTC

Policy name: **POLICY_QOS_OUT**
Policy Number: 3
Flags: 0x10000 [DNX_FM_POL_TC]
Class Number: 6
Reference Count: 0
In Hash: Yes
Is Compiled: No

Level: 0 Class Number: 0 Class Name: tc1

Match Count: 1 Flags: 0x0 Logical Op: MATCH_ANY

ACE: 0 Class:0 Match:0 proto ANY Flags:0x8080 [Grant]

DNX_FM_RANGE_TC: (1, 1)

UNKNOWN: UNKNOWN:

Level: 0 Class Number: 1 Class Name: tc2

Match Count: 1 Flags: 0x0 Logical Op: MATCH_ANY

ACE: 0 Class:1 Match:0 proto ANY Flags:0x8080 [Grant]

DNX_FM_RANGE_TC: (2, 2)

UNKNOWN: UNKNOWN:

Level: 0 Class Number: 2 Class Name: tc3

Match Count: 1 Flags: 0x0 Logical Op: MATCH_ANY

ACE: 0 Class:2 Match:0 proto ANY Flags:0x8080 [Grant]

DNX_FM_RANGE_TC: (3, 3)

UNKNOWN: UNKNOWN:

Level: 0 Class Number: 3 Class Name: tc4

Match Count: 1 Flags: 0x0 Logical Op: MATCH_ANY

ACE: 0 Class:3 Match:0 proto ANY Flags:0x8080 [Grant]

DNX_FM_RANGE_TC: (4, 4)

UNKNOWN: UNKNOWN:

Level: 0 Class Number: 4 Class Name: tc5

Match Count: 1 Flags: 0x0 Logical Op: MATCH_ANY

ACE: 0 Class:4 Match:0 proto ANY Flags:0x8080 [Grant]

DNX_FM_RANGE_TC: (5, 5)

UNKNOWN: UNKNOWN:

Level: 0 Class Number: 5 Class Name: class-default

Match Count: 1 Flags: 0x0 Logical Op: MATCH_ANY

ACE: 0 Class:5 Match:0 proto ANY Flags:0x28000 [Grant][Default]

UNKNOWN: UNKNOWN:

Adding WRED:

```
policy-map POLICY_QOS_OUT
class tc4
random-detect discard-class 1 5 ms 15 ms
!
class class-default
!
end-policy-map
!
end
```

```
Level1 Class = tc4
Egressq Queue ID = 1036 (LP queue)
Queue Max. BW. = 100824615 kbps (default)
Queue Min. BW. = 20164923 kbps (20 %)
Inverse Weight / Weight = 1 / (BWR not configured)
Guaranteed service rate = 20000000 kbps
TailDrop Threshold = 75497472 bytes / 30 ms (default)
```

WRED profile for **Discard_Class 1**

```
WRED Min. Threshold = 12517376 bytes (5 ms)
WRED Max. Threshold = 37748736 bytes (15 ms)
```

Default RED profile

```
WRED Min. Threshold = 0 bytes (0 ms)
WRED Max. Threshold = 0 bytes (0 ms)
```

RP/0/RP0/CPU0:xrg-ncs-04#show controllers npu voq-usage interface HundredGigE 0/0/0/35 instance 5 location 0/0/CPU0

Tue Nov 7 17:24:03.570 UTC

Node ID: 0/0/CPU0

Intf name	Intf handle (hex)	NPU #	NPU core	PP Port	Sys Port	VOQ base	Flow base	VOQ port type	Port speed (Gbps)	
Hu0/0/0/35	138	5	0	1	321	1032	1064	local	100	<- 1032 (Default LP queue) - displays the base queue -> refer to show qos interface commaand.

Display the queue details:

RP/0/RP0/CPU0:xrg-ncs-04#**show controllers fia diagshell 5 "diag cosq voq id=1036 det=1" location 0/0/CPU0** <- 1036 (LP queue) - refer to show qos interface commaand.

Thu Dec 14 21:51:33.184 UTC

Node ID: 0/0/CPU0

Core 0:

Basic info

Q type: voq

num cos: 8, cosq class: 4

Base queue id: 1032, base queue gport: 0x24000408

Credit request type: BCM_COSQ_DELAY_TOLERANCE_100G_SLOW_ENABLED Adjusted for slow enabled 100Gb ports

Watchdog enable in common status message mode

Is queue in credit watchdog queue range:True

Credit watchdog message time: 0

Delete queue time: 512

Backoff enter queue credit balance threshold: 40960

Backoff exit queue credit balance threshold: 40960

Backlog enter queue credit balance threshold: 40960

Backlog exit queue credit balance threshold: 40960

Empty queue satisfied credit balance threshold: 0

Max empty queue credit balance threshold: 16384

Exceed max empty queue credit balance threshold: 1

Off-To-Slow credit balance threshold: 0

Off-To-Normal credit balance threshold: 38912

Slow-To-Normal credit balance threshold: 38912

Normal-To-Slow credit balance threshold: 38912

Delay Tolerance is NOT OCB only

Delay Tolerance is NOT High Q Priority

Slow Level Thresh Down in slow level number: 0 is: 0

Slow Level Thresh Down in slow level number: 1 is: 0

Slow Level Thresh Down in slow level number: 2 is: 0

Slow Level Thresh Down in slow level number: 3 is: 0

Slow Level Thresh Down in slow level number: 4 is: 0

Slow Level Thresh Down in slow level number: 5 is: 0

Slow Level Thresh Down in slow level number: 6 is: 0

Slow Level Thresh Up in slow level number: 0 is: 0

Slow Level Thresh Up in slow level number: 1 is: 0

Slow Level Thresh Up in slow level number: 2 is: 0

Slow Level Thresh Up in slow level number: 3 is: 0

Slow Level Thresh Up in slow level number: 4 is: 0

Slow Level Thresh Up in slow level number: 5 is: 0

Slow Level Thresh Up in slow level number: 6 is: 0

Credit value(local): 1024, Credit value(remote): 2048

Credit discount value: -2

Rate class info

WRED info:

Green : enable(False) min_thresh(0) max_thresh(0) drop_probability(0)

**Yellow: enable(True) min_thresh(12517376) max_thresh(37748736)
drop_probability(9)**

Red : enable(False) min_thresh(0) max_thresh(0) drop_probability(0)

Black : enable(False) min_thresh(0) max_thresh(0) drop_probability(0)

Tail drop info:

Green : max queue size in bytes(75497472), max queue size in BDs(294912)

Yellow: max queue size in bytes(75497472), max queue size in BDs(294912)

Red : max queue size in bytes(75497472), max queue size in BDs(294912)

Black : max queue size in bytes(75497472), max queue size in BDs(294912)

Guaranteed info:

Green : min queue size in bytes(0), min queue size in BDs(0)

Yellow: min queue size in bytes(0), min queue size in BDs(0)

Red : min queue size in bytes(0), min queue size in BDs(0)

Black : min queue size in bytes(0), min queue size in BDs(0)

Fair adaptive tail drop info:

Enable: True

Green : alpha(-2)

Yellow: alpha(-2)

Red : alpha(-2)

Black : alpha(-2)

ECN wred info: enable(False) min_thresh(0) max_thresh(0) drop_probability(0)

ECN max queue size in bytes(524288), max queue size in BDs(524288)

VSQ-related

Category class: 2

Traffic class: 4

Connection class: 0

Green : Admission-test-templates(0)

Yellow: Admission-test-templates(0)

Red : Admission-test-templates(0)

Black : Admission-test-templates(0)

AdmissionTestProfileA[0]: 'category, traffic class'

AdmissionTestProfileB[0]: 'category'

current queue size: 0 bytes, current queue bds size: 0

Attached VOQ connector: 0x00000428

Destination sys port: 0x00007fff

OCB eligiblity: True

[SNIP]

output for core 1 is omitted.

قفاوتم لاطخلل GREP و هالعأ رمألا لىغشت كنكمي راطتالال ةمئاق مچح ةبقارم.

لالم: `Diagshell 5 "diag cosq voq id=1036 core=0 det=1" location 0/0/cpu0` | مچح لاطتالال ةمئاق مچح |

مچح لاطتالال ةمئاق مچح | `show policy-map interface` رمأ مادختساب تايئاصحإل اضرع نكمي

لالم: `show policy-map interface hundredGigE 0/0/0/35 output location 0/0/cpu0`

طوطخ اضرعي ال. ىرخألا ةيساسأل XR ةمظناً نم هفرعن امك الصم جارخال سىل: ةظحال م فدارم ل RED و WRED فيرعتال فللم.

```
RP/0/RP0/CPU0:xrg-ncs-04#show policy-map interface hundredGigE 0/0/0/35 output location 0/0/CPU0
```

```
Thu Dec 14 22:05:50.971 UTC
```

```
Interface:HundredGigE0/0/0/35 Location: node0_0_CPU0 output: POLICY_QOS_OUT
```

Class tc1

Classification statistics	(packets/bytes)	(rate - kbps)
Matched :	0/0	0
Transmitted :	0/0	0
Total Dropped :	0/0	0

Queueing statistics

Queue ID	: 1033
Taildropped(packets/bytes)	: 0/0

Class tc2

Classification statistics	(packets/bytes)	(rate - kbps)
Matched :	0/0	0
Transmitted :	0/0	0
Total Dropped :	0/0	0

Queueing statistics

Queue ID : 1034

Taildropped(packets/bytes) : 0/0

Class tc3

Classification statistics (packets/bytes) (rate - kbps)

Matched : 0/0 0

Transmitted : 0/0 0

Total Dropped : 0/0 0

Queueing statistics

Queue ID : 1035

Taildropped(packets/bytes) : 0/0

Class tc4

Classification statistics (packets/bytes) (rate - kbps)

Matched : 0/0 0

Transmitted : 0/0 0

Total Dropped : 0/0 0

Queueing statistics

Queue ID : 1036

Taildropped(packets/bytes) : 0/0

Class tc5

Classification statistics (packets/bytes) (rate - kbps)

Matched : 0/0 0

Transmitted : 0/0 0

Total Dropped : 0/0 0

Queueing statistics

Queue ID : 1037

Taildropped(packets/bytes) : 0/0

Class class-default

Classification statistics (packets/bytes) (rate - kbps)

Matched : 0/0 0

Transmitted : 0/0 0

Total Dropped : 0/0 0

Queueing statistics

Queue ID : 1032

Taildropped(packets/bytes) : 0/0

FMQs ةبقارم

تاونقلل ددعتملا ثبلا راطتنا مئوق مدختسي هنا. ددعتملا ثبلا رورم ةكرح ةلودج متت مل مئوق ال، ةطقنلا هذه ىلع. ةيديلقنلا (VOQ) توصلا راطتنا مئوق نم ال دب (FMQ) ةيفيللا ةمدخل ةدوج معد.

دعب امف 6.5.2 نم رمالا اذه رفوتى FMQs تايئاصح! ضرعل

```
RP/0/RP0/CPU0:NCS5508#show controllers npu stats voq base 0 instance 0 location 0/0/CPU0
Mon Jul 8 08:59:22.465 UTC
```

Asic Instance = 0

VOQ Base = 0

	ReceivedPkts	ReceivedBytes	DroppedPkts	DroppedBytes
TC_0 = 224	15673	49	3468	
TC_1 = 0	0	0	0	
TC_2 = 0	0	0	0	
TC_3 = 0	0	0	0	
TC_4 = 0	0	0	0	
TC_5 = 0	0	0	0	
TC_6 = 0	0	0	0	
TC_7 = 0	0	0	0	

ىلع، مت اذا ام ققحتلاو (NPU) ةيزكرملا ةجلالعمل ةدحو ربع ةمزح عابتا نكمملا نم امك ةرطن قلا كلضف نم. ةبسانملا (TC) رورملا ةكرح ةئف قيبطت، لاثملا لىبس

ةيفصتلا لماعو diag shell ةقباطملا رماوألل لقن ةمزح عبتا مسقلا.

عيمجتلل ةيفاضا رماو

ةيفاضا رماوألل ضعب هذه:

- show tech-support qos pi
- ينفال معدلل ةمدخل ةدوج ةصنم راهظا
- show tech cef ةصنم

ةيدرف ةهجاو ىلع ةلكشم يف هابتشالا مت اذا:

- <name> لىغشتلا ةهجاو راهظا
- show run policy-map <> (ةهجاو ىلع ةقباطملا ةسايسلا طئارخل)
- show qos interface <name> input|output
- show policy-map interface <name>
- <node> ةمدخل ةدوجل ديعبلا عقوملا راهظا (جورخلا جهنل)

ةمولعم وضع ةمزح لماك تدوز، ةمزح نراقلا نوكتي هنا.

- <> ةمزح ضرع

تاريذحتلا/دويقلا

مسو

- سياسى سلا ةطيرخ س فن ي ف (L3(MPLS EXP) و L2(CoS و DEI) تامال ع معد م تي ال
- **set discard-class** ع هجم م تي ام دن ع ي طرشل ل لم عي ال
- طق ف زيي م تل ل (QoS-group) ةم دخل ةدوج ةق باطم
- ةيضا رت ف ال ةئ ف ل ل QoS-Group 0 زج ح م ت
- تامال ع ال جه ن ل تا د ا د ع ل ل و تا ي ئ ا ص ح ال ا ض ر ع م تي ال

ي ددرت ال قاطن ال

- $100\% >$ سياسى سلا ةطيرخ ي ف ي ددرت ال قاطن ال ا ض ر ع ت ا ر ا ب ع ة ف ا ك ع و م ج م نو ك ي ال ا ب ج ي
- $100\% >$ سياسى سلا ةطيرخ ي ف ةي ق ب ت م ال ي ددرت ال قاطن ال ا ض ر ع ل م ج ة ف ا ك ع و م ج م نو ك ي ال ا ب ج ي
- ت ا ر ا ب ع ص خ ل م ي ل ع د و ي ق د ج و ت ال ي ل ا ت ل ا ب و ت ا ئ ف ل ل ن ي ب ح ا ب ص م ل ا ة ك ر ا ش م م ت ت ال ي ددرت ال قاطن ال

Ingress ةم دخ ةدوج

ل و خ د ل ا ة م د خ ه ن ي ف ة د م ت ع م ر ي غ ر ا ط ت ن ا ل ا م ئ ا و ق ت ا ء ا ر ج

Egress ةم دخ ةدوج

- ةي ا غ ل ل ة د و د ح م ز ي ي م ت ل ا ت ا ء ا ر ج / ت ا ن ا ك م ا
- ةئ ف و (QG) qos-group و (TG) رورم ل ا ة ك ر ح ةئ ف ي ل ع ج و ر خ ل ا ة س ا ي س ق ب ا ط ت م ع د م تي DC ت ا ء ا ر ج ال ي ل ع ت ا م ا ل ع ع ض و ل - QG ر ا ط ت ن ا ل ا م ئ ا و ق ت ا ء ا ر ج ال - TC . ط ق ف (DC) ن ي ذ و ب ن م ل a - WRED
- ا ج ر خ م ة ه ج ا و ي ل ع ةي ل ا ت ل ا ة س ا ي س ل ا ة ط ي ر خ ط ب ر ي ة م د خ ه ن ض ف ر م ت ي س \

```
policy-map SET-AND-QUEUE-OUT
```

```
class GOLD
  priority level 1
  shape average percent 20
  queue-limit 500 us
  set mpls experimental imposition 5
```

ن ي و ك ت " ر ي ذ ح ت " ط ر ش ل ا ت ف ش ك " DNX_QOSEA " !!% : ي ه ا ه ي ل ل ع ل ص ح ت ي ت ل ا ا ط خ ل ا ة ل ا س ر ةئ ف و ت ا ز ي م ل ا ي ل ع ت ا م ا ل ع ع ض و ل ة م د خ ل ا ة د و ج ة و م ج م م د خ ت س ا . ح ل ا ص ر ي غ ج ر خ م ج ه ن ة ط ي ر خ ر ا ط ت ن ا ل ا م ئ ا و ق ت ا ز ي م ل ت ا ن ا ي ب ل ا ر و ر م ة ك ر ح

ر خ ا ل ا و ت ا م ا ل ع ل ا ع ض و ل د ح ا و ، ة ل ص ف ن م ل ا ة م د خ ل ا ت ا س ا ي س ن م ن ي ن ث ا ق ي ب ط ت ن ك م م ل ا ن م ر ا ط ت ن ا ل ا م ئ ا و ق ع ض و ل

HQoS

- ن ا ك ا ذ ا ل ل ق ت س م HQoS ف ي ر ع ت ف ل م ةي ع ر ف ة ه ج ا و ي ل ع ة م د خ ل ا ة س ا ي س ق ي ب ط ت ب ل ط ت ي ا ح ط س م
- ح ا ب ص م د و ج و ةي و ل و ا ةئ ف ي ل ع ي و ت ح ت ةي ع ر ف ة ه ج ا و ي ل ع ة م د خ ة س ا ي س ق ي ب ط ت ب ل ط ت ي ا ح ط س م و ا ي م ر ه ن ا ك ا ذ ا ل ل ق ت س م ةئ ف ل ا ه ذ ه ي ف

- عميق ذخا متي. (رباش) لدعملل دح نيوكت ةيولوال تائفل نوكي نأ بجي، HQoS عضو يفة ةيولوا يذ يدرتال قاطنلل زجك ةلاعفل حابصلل
- (BWR) يقبتمل يدرتال قاطنل او (BWR) يدرتال قاطنل معد متي ال، HQoS عضو يفة قاطنل اما نيوكت نكمي. هسفن ةسايسل ةطيخ نيوكت نمض تقول سفن يفة ةسايسل ةطيخ سفن يفة يقبتمل يدرتال قاطنل و يدرتال
- 6.3.1 رادصل لبقة سايسل ةطيخ سفن يفة لكشل عم يصخشلل BWR معد متي ال
- ةصلل ةئفل يفة WRED ب حومسم ريغ
- HQoS عضو يفة يصولوا تايوتسم 4 معد مت
- اعم peering لخدم فيرعت فلم HQoS لخدم دناسي ال
- لعل مدختسم لل لبقة نم ةفرعمل تائفل معد متي ال، نيويوتسم لل جهنل ةبسن لل لصلل يوتسم لل
- دنع (PBTS) ةسايسل لل دننتسم لل قفنل ديحت لمعي ال، TCAM ديحت ببسب HQoS فيرعت فلم نيكمت

مازتلال دعب دمتعم ريغ نيوكت ريذحت

يالاتلال لثمل لثم ةمدخل ةدوج نيوكت ذي فننت دعب ريذحت لجس ىرت دق، تالاحل ضع ب يفة

راهظا" رادصل اعجلال. مازتلال ةيولمعل ةجيتنك ةحصلال نم ققحتلال تاريذحت نع فشكلال مت % تاريذحتلال ضرعل "نيوكتلال تاريذحت

ىرتس ف، ةحرتقمال (CLI) رماوالا رطس ةهجاو ذي فننت ب تمق اذا:

```
!! SEMANTIC ERRORS: This configuration was rejected by
!! the system due to semantic errors. The individual
!! errors with each failed configuration command can be
!! found below.
```

<ببصلل ةعابط متت انه>

غناي ةحص نم ققحتلال نم يتي أي دق ةلاحل هذه يفو. نيوكتلال قيبطت متي، كلذل عمو

نيوكتلال ةحص نم ققحتلال نيكمت نيوكت مت اذا امم ققحتلال اعجلال

غناي ةدعاق قاطل متي نأ حج رملال نم ف لالحل وه اذه ناك اذاو

ذي فننت وءاطخالل حيحصت نيوكت ةحص نم ققحتلال CCV لى صافات لى لى دبتلل كنكمي ىرخا ةرم نيوكتلال

حيحصت جارخا يفة "ةم وءملا ريغ" ةلاس رلا لى غش تب موقت يتلل، Yang ةدعاق ىرت نأ بجي ءاطخالل

Example:

```
RP/0/RP0/CPU0:Jan 22 15:57:44.441 UTC: ccv[189]: ...message : 'Service Policy on interface
"TenGigE0/0/0/7/1.102" is not supported', rule group name: 'qos-ma', rule name: 'cac-ser-pol-
qos-in-unsupp-intf').
```

ةلاحل هذه يفة QOs PI قيرفب لاصلتال اعجلال.

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن تسم ل ا ذه Cisco ت مچرت
م ل ا ل ا ا ن ا ع مچ ي ف ن ي م دخت س م ل ل م عد ي و ت ح م م ي دقت ل ة ي ر ش ب ل و
امك ة ق ي ق د ن و ك ت ن ل ة ي ل ا ة مچرت ل ض ف ا ن ا ة ظ ح ال م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب
Cisco ي ل خ ت . ف ر ت ح م مچرت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ال ا ة مچرت ل ا ع م ل ا ح ل ا و ه
ي ل ا ا م ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا هذه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco
Systems (ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا دن ت س م ل ا