Qualcomm

Qualcomm Technologies, Inc.

IPQ60xx PPE Switch Software Development Kit Diagnostic Shell

User Guide

80-YC320-3 Rev. F

April 18, 2024

Revision history

Revision	Date	Description
A	July 2019	Initial release
B	August 2020	Added specific QoS servicecode bypass and flow source bypass in servcode config set.
C	February 2021	■ Added policer bypass set. ■ Added policer bypass get.
D	July 2021	■ Updated portvlan globalqinqmode set. ■ Updated portvlan globalqinqmode get. ■ Updated acl list create. ■ Updated acl list destroy. ■ Updated acl rule add. ■ Updated acl rule del. ■ Updated acl rule query. ■ Updated acl list bind. ■ Updated acl list unbind.
E	May 2022	■ Updated MIB. ■ Updated mib statistics get. ■ Updated mib counter get. ■ Updated mib xgstatistics get.
F	April 2024	Updated Appendix.

Contents

1 Overview

This document provides comprehensive reference for understanding and configuring Packet Processing Engine (PPE) Switch Software Development Kit (SSDK) using the diagnostic shell. The diagnostic shell is a general Command Line Interpreter (CLI) that provides precise control of a chip-embedded reference platform. CLI commands are created based on FAL APIs for debugging.

1.1 Command line interface

To get CLI commands help, enter a question mark at the CLI prompt dev0@qca>.

```
root@OpenWrt:/# ssdk_sh
SSDK Init OK!
Welcome to SSDK Shell version: 1.2.0.2, at 2013-12-20-05:43:25.
dev0@qca>
dev0@qca>?
port        config port control
vlan        config VLAN table
portVlan    config port base VLAN
fdb         config FDB table
acl         config ACL
qos         config Qos
igmp        config IGMP/MLD
leaky       config leaky
mirror      config mirror
rate        config rate limit
sec         config security
stp         config STP
mib         show MIB statistics information
led         set/get led control pattern
cosmap      set/get cosmap table
misc        config miscellaneous
ip          config IP
nat         config NAT
trunk       config trunk
interface   config interface
debug       read/write register
device      set device id
help        type ? get help
```

```
quit          type quit/q quit shell
dev0@qca>
```

To get help for the name or parameters of a specific command, enter a question mark or press **Tab**.

```
dev0@qca>port ?
duplex        speed        autoAdv      autoNeg      header
txhdr         rxhdr        hdrtype      flowCtrl     flowCtrlforcemode
powersave     hibernate    cdt          txmacstatus  rxmacstatus
txfcstatus    rxfcstatus   bpstatus     linkforcemode linkstatus
macLoopback
```

NOTE   All CLI commands and parameters are case-insensitive.

2 SSDK commands

2.1 VSI

VSI is the L2 forwarding domain of IPQ60xx, it is supported to set port based VSI and VLAN based VSI. The membership, FDB learning and station move of VSI are also configurable.

2.1.1 vsi vsiid alloc

Allocate a new VSI for use.

vsi vsiid alloc

Syntax description

Parameter	Description
None	–

Examples

The following example is allocating a new VSI:

```
dev0@qca>vsi vsiid alloc
[VSI value]:0x7
operation done.
```

2.1.2 vsi vsiid free

Free a specified VSI.

vsi vsiid free <*vsi_id*>

Syntax description

Parameter	Description
<*vsi_id*>	Specifies a VSI ID to be freed. The range is 6-31. VSI 0-5 are reserved physical ports and cannot be freed.

Examples

The following example is freeing VSI 7:

```
dev0@qca>vsi vsiid free  7
operation done.
```

2.1.3   vsi portbasedvsi set

Set the port based VSI.

vsi portbasedvsi set *<port_id> <vsi_id>*

Syntax description

Parameter	Description
<port_*id*>	Specifies a physical port ID or a virtual port
<vsi_id>	Specifies a VSI ID for a port. The range is 0-31.

Examples

The following example is setting VSI of port 1 as 4.

```
dev0@qca> vsi portbasedvsi set 1 4
operation done.
```

2.1.4   vsi portbasedvsi get

Get the port based VSI.

vsi portbasedvsi get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies a physical port ID or a virtual port.

Examples

The following example is getting VSI of port 1.

```
dev0@qca>vsi portbasedvsi get 1
[VSI value]:0x4
operation done.
```

2.1.5   vsi vlanbasedvsi set

Set the VLAN based VSI.

vsi vlanbasedvsi set *<port_id> <stag_vid> <ctag_vid> <vsi_id>*

Syntax description

Parameter	Description
<port_id>	Specifies a physical port.
<stag_vid>	Specifies staged VLAN ID. 0xffff – untag 0 – pritag
<ctag_vid>	Specifies ctaged VLAN ID. 0xffff – untag 0 – pritag
<vsi_id>	Specifies a VLAN based VSI ID on a port. The range is 0-31.

Examples

The following example is setting ctagged VSI of VLAN 10 as 5 on port 1.

```
dev0@qca>vsi vlanbasedvsi set 1 0xffff 10 5
        operation done.
```

2.1.6   vsi vlanbasedvsi get

Get the VLAN based VSI.

vsi vlanbasedvsi get *<port_id> <stag_vid> <ctag_vid>*

Syntax description

Parameter	Description
<port_id>	Specifies a port ID
<stag_vid>	Specifies staged VLAN ID. 0xffff – untag 0 – pritag
<ctag_vid>	Specifies ctaged VLAN ID. 0xffff – untag 0 – pritag

Examples

The following example is getting ctagged VSI of VLAN 10 on port 1.

```
dev0@qca>vsi vlanbasedvsi get 1 0xffff 10
[VSI value]:0x5
operation done.
```

2.1.7   vsi member set

Set the membership of a VSI.

vsi member set *<vsi_id>*

Syntax description

Parameter	Description
<vsi_id>	Specifies a VSI ID. The range is 0-31.
[membership]	Specifies the members of VSI.
[unknown_unicast_membership]	Specifies the unknown unicast members of VSI.
[unknown_multicast_membership]	Specifies the unknown multicast members of VSI.
[broadcast_membership]	Specifies the broadcast members of VSI.

Examples

The following example is setting the membership of VSI 5.

```
dev0@qca>vsi member set 5
membership: 0x41
unknown_unicast_membership: 0x41
unknown_multicast_membership: 0x41
broadcast_membership: 0x41
operation done.
```

2.1.8   vsi member get

Get the members of a VSI.

vsi member get *<vsi_id>*

Syntax description

Parameter	Description
<vsi_id>	Specifies a VSI ID. The range is 0-31.

Examples

The following example is getting the member of VSI 5.

```
dev0@qca>vsi member get 5
[membership]:0x41
[unknown_unicast_membership]:0x41
[unknown_multicast_membership]:0x41
[broadcast_membership]:0x41
operation done.
```

2.1.9   vsi learnctrl set

Set the new address learning status of a VSI.

vsi learnctrl set *<vsi_id>*

Syntax description

Parameter	Description
<vsi_id>	Specifies a VSI ID. The range is 0-31.
[learnstatus_en]	Enables or disables the FDB learning of VSI.
[learnaction]	Learning action for the VSI, as forward/drop/copy to CPU/redirect to CPU. The value is one of *<forward|drop|cpycpu|rdtcpu>*.

Examples

The following example is setting the new address learning of VSI 5.

```
dev0@qca>vsi learnctrl set 5
learnstatus_en(enable): enable
learnaction(forward): cpycpu
operation done.
```

2.1.10   vsi learnctrl get

Get the new address learning status of a VSI.

vsi learnctrl get *<vsi_id>*

Syntax description

Parameter	Description
<vsi_id>	Specifies a VSI ID. The range is 0-31.

Examples

The following example is getting the new address learning of VSI 5.

```
dev0@qca>vsi learnctrl get 5
[learnstatus_en]:ENABLE
[learnaction]:CPYCPU
operation done.
```

2.1.11   vsi stationmove set

Set the station move status of a VSI.

vsi stationmove set *<vsi_id>*

Syntax description

Parameter	Description
<vsi_id>	Specifies a VSI ID. The range is 0-31.
[stamove]	Enables or disables the station move of VSI.
[action]	Station move action for the VSI as forward/drop/copy to CPU/redirect to CPU. The value is one of *<forward|drop|cpycpu|rdtcpu>*.

Examples

The following example is setting the station move of VSI 5.

```
dev0@qca>vsi stationmove set 5
stationmove_en(enable): enable
stationmove_action(forward): rdtcpu
operation done.
```

2.1.12   vsi stationmove get

Get the station move status of a VSI.

vsi stationmove get <*vsi_id*>

Syntax description

Parameter	Description
<*vsi_id*>	Specifies a VSI ID. The range is 0-31.

Examples

The following example is getting the station move of VSI 5.

```
dev0@qca>vsi stationmove get 5
[stationmove_en]:ENABLE
[stationmove_action]:RDTCPU
operation done.
```

2.2   VLAN

The VLAN related features are used to perform packet VLAN related operation, including but not limited to the following:

- Global and port QinQ mode setting

- Ingress and egress TPID

- Ingress and egress default VLAN tagged

- Ingress and egress tag propagation

- Ingress and egress VLAN translation add/get/del/iterate

2.2.1   portvlan globalqinqmode set

Set the global QinQ mode including mask, ingress mode, egress mode and VLAN format unchanged for the bridged packet to CPU port.

Both ingress and egress can be configured as the stag mode and ctag mode. Basically, ingress mode and egress mode must be configured as same. By default, both ingress and egress are ctag mode.

portvlan globalqinqmode set

Syntax description

Parameter	Description
[mask]	Specifies the mask bitmap for ingress and egress mode:
	bit 0: ingress mode.
	bit 1: egress mode.
	bit 2: untouched for bridged packet to CPU port.
[ingress_qinq_mode]	Specifies the ingress mode, value should be ctag or stag.
[egress_qinq_mode]	Specifies the egress mode, value should be ctag or stag.
[untouched_for_cpuc ode]	Specifies the VLAN format unchanged of bridged packet to CPU port, value should be enable or disable.

Examples

The following example is setting the global QinQ mode.

```
dev0@qca>portvlan globalqinqmode set
mask(0x0): 3
ingress_qinq_mode(ctag): ctag
egress_qinq_mode (ctag): ctag
untouched_for_cpucode(enable):enable
operation done.
```

2.2.2   portvlan globalqinqmode get

Get the global QinQ mode, including ingress mode and egress mode.

portvlan globalqinqmode get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the global QinQ mode.

```
dev0@qca>portvlan globalqinqmode get
[mask]:0
[ingress_qinq_mode]:CTAG
[egress_qinq_mode]:CTAG
[untouched_for_cpucode]: enable
operation done.
```

2.2.3   portvlan ptqinqmode set

Set the QinQ mode based on port, including ingress mode and egress mode. Both ingress and egress can be configured as EDGE mode and CORE mode. By default, both ingress and egress are EDGE mode.

Ingress mode value of core means port ingress direction can identify stag, ctag and untagged; Ingress mode value of edge means port ingress direction can identify ctag and untagged.

Egress mode value of core means port egress direction can transmit stag, ctag and untagged; Egress mode value of edge means port egress direction can transmit ctag and untagged.

portvlan ptqinqmode set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
[mask]	Specifies the mask bitmap for ingress and egress QinQ role: bit 0: ingress mode. bit 1: egress mode.
[ingress_qinq_role]	Specifies the ingress QinQ role.
[egress_qinq_role]	Specifies the egress QinQ role.

Examples

The following example is setting the QinQ mode based on port.

```
dev0@qca>portvlan ptqinqmode set 1
mask(0x0): 3
ingress_qinq_role (edge): edge
egress_qinq_role (edge): edge
operation done.
```

2.2.4   portvlan ptqinqmode get

Get the QinQ mode based on port, including ingress mode and egress mode.

portvlan ptqinqmode get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port. The range is 0-7

Examples

The following example is getting the QinQ mode based on port.

```
dev0@qca>portvlan ptqinqmode get 1
[mask]:0
[ingress_qinq_role]:EDGE[egress_qinq_role]:EDGE
operation done.
```

2.2.5   portvlan intpid set

Set the ingress TPID, including mask, ctpid and stpid value.

portvlan intpid set

Syntax description

Parameter	Description
[mask]	Specifies the mask bitmap for ingress ctag and stag TPID: bit 0: ctag bit 1: stag
[ctagtpid]	Specifies the ingress ctpid.
[stagtpid]	Specifies the ingress stpid.

Examples

The following example is setting the ingress TPID value.

```
dev0@qca>portvlan intpid set
mask(0x0): 3
ctagtpid(0x8100): 0x8100
stagtpid(0x88a8): 0x88a8
operation done.
```

2.2.6   portvlan intpid get

Get the ingress TPID, including ctpid and stpid value.

portvlan intpid get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the ingress TPID value.

```
dev0@qca>portvlan intpid get
[mask]:0
[ctagtpid]:0x8100
[stagtpid]:0x88a8
operation done.
```

2.2.7   portvlan egtpid set

Set the egress TPID, including mask, ctpid and stpid value.

portvlan egtpid set

Syntax description

Parameter	Description
[mask]	Specifies the mask bitmap for egress ctag and stag TPID: bit 0: ctag. bit 1: stag.
[ctagtpid]	Specifies the egress ctpid.
[stagtpid]	Specifies the egress stpid.

Examples

The following example is setting the egress TPID value.

```
dev0@qca>portvlan egtpid set
mask(0x0): 3
ctagtpid(0x8100): 0x8100
stagtpid(0x88a8): 0x88a8
operation done.
```

2.2.8 portvlan egtpid get

Get the egress tpid, including ctpid and stpid value.

portvlan egtpid get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the egress TPID value.

```
dev0@qca>portvlan egtpid get
[mask]:0
[ctagtpid]:0x8100
[stagtpid]:0x88a8
operation done.
```

2.2.9 portvlan ingressfilter set

Set the ingress filter based on port, including VLAN filter, tag filter, untag filter and priority tag filter.

portvlan ingressfilter set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
[membership_filter_en]	Specifies the membership filter status.

Parameter	Description
[tagged_filter_en]	Specifies the tagged filter status.
[untagged_filter_en]	Specifies the untagged filter status.
[priority_tagged_filter_en]	Specifies the priority tag filter status.

Examples

The following example is setting the ingress filter based on port.

```
dev0@qca>portvlan ingressfilter set 1
membership_filter_en(disable): disable
tagged_filter_en(disable): disable
untagged_filter_en(disable): disable
priority_tagged_filter_en(disable): disable
operation done.
```

2.2.10   portvlan ingressfilter get

Get the ingress filter based on port, including VLAN filter, tag filter, untag filter and priority tag filter.

portvlan ingressfilter get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the ingress filter based on port.

```
dev0@qca>portvlan ingressfilter get 1
[membership_filter_en]:DISABLE
[tagged_filter_en]:DISABLE
[untagged_filter_en]:DISABLE
[priority_tagged_filter_en]:DISABLE
operation done.
```

2.2.11   portvlan defaultvlantag set

Set the default tag based on port, including default cvid, default svid, mask, default cpri, default spri, default cdei and default sdei. You can set ingress, egress and all direction default VLAN tag values through this command.

portvlan defaultvlantag set <*port_id*> <*all|ingress|egress*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<all|ingress|egress>	Specifies the direction of default VLAN tag set.
[default_ctag_vid_en]	Specifies the default cvid status of the VLAN tag. When status is enabled, the mask bit and cvid value setting take effect.
[default_stag_vid_en]	Specifies the default svid status of the VLAN tag. When status is enabled, the mask bit and svid value setting take effect.
[mask]	Specifies the mask bitmap for cvid, svid, cpri, spri, cdei and sdei setting: bit0: cvid bit1: svid bit2: cpri bit3: spri bit4: cdei bit5: sdei
[default_ctag_vid]	Specifies the default cvid value
[default_stag_vid]	Specifies the default svid value
[default_ctag_pri]	Specifies the default cpri value
[default_stag_pri]	Specifies the default spri value
[default_ctag_dei]	Specifies the default cdei value
[default_stag_dei]	Specifies the default sdei value

Examples

The following example is setting the default VLAN tag based on port.

```
dev0@qca>portvlan defaultvlantag set 1 all
default_ctag_vid_en(disable):
default_stag_vid_en(disable):
mask(0x0): 0x3f
default_ctag_vid(0):
default_stag_vid(0):
default_ctag_pri(0):
default_stag_pri(0):
default_ctag_dei(0):
default_stag_dei(0):
operation done.
```

2.2.12   portvlan defaultvlantag get

Get the default tag based on port, including default cvid, default svid, default cpri, default spri, default cdei and default sdei. You can get the ingress or egress direction default VLAN tag values through this command.

portvlan defaultvlantag get *<port_id>* *<all\|ingress\|egress>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<all|ingress|egress>	Specifies the direction of default VLAN tag get. Only ingress or egress for get is supported.

Examples

The following example is getting the default VLAN tag based on port.

```
dev0@qca>portvlan defaultvlantag get 1 ingress
[default_ctag_vid_en]:DISABLE
[default_stag_vid_en]:DISABLE
[mask]:0x0
[default_ctag_vid]:0x0000
[default_stag_vid]:0x0000
[default_ctag_pri]:0x0000
[default_stag_pri]:0x0000
[default_ctag_dei]:0x0000
[default_stag_dei]:0x0000
operation done.
```

2.2.13 portvlan tagpropagation set

Set the tag propagation based on port, including vid propagation, pri propagation and dei propagation. You can set ingress, egress and all direction tag propagation values through this command.

NOTE   IPQ60xx does not support vid propagation.

portvlan tagpropagation set *<port_id>* *<all\|ingress\|egress>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<all|ingress|egress>	Specifies the direction of tag propagation set.
[mask]	Specifies the mask bitmap for vid, pri and dei propagation setting: bit0: vid propagation bit1: pri propagation bit2: dei propagation
[vid_propagation_en]	Not supported in IPQ60xx.
[pri_propagation_en]	Specifies the pri propagation status.
[dei_propagation_en]	Specifies the dei propagation status.

Examples

The following example is setting the tag propagation based on port.

```
dev0@qca>portvlan tagpropagation set 1 all
mask(0x0): 0x7
vid_propagation_en(disable):
pri_propagation_en(disable):
dei_propagation_en(disable):
operation done.
```

2.2.14   portvlan tagpropagation get

Get the tag propagation based on port, including vid propagation, pri propagation and dei propagation.

> **NOTE**   IPQ60xx does not support vid propagation.

portvlan tagpropagation get *<port_id>* *<all|ingress|egress>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<all|ingress|egress>	Specifies the direction of tag propagation get. Only ingress or egress for get is supported.

Examples

The following example is getting the tag propagation based on port.

```
dev0@qca>portvlan tagpropagation get 1 ingress
[mask]:0x0
[vid_propagation_en]:DISABLE
[pri_propagation_en]:DISABLE
[dei_propagation_en]:DISABLE
operation done.
```

2.2.15   portvlan egmode set

Set the egress VLAN mode based on port, including mask, ctag and stag mode.

- When **vsiegmodeen** is disabled, ctag and stag egress mode uses these setting.

- When **vsiegmodeen** is enabled, stag or ctag egress mode uses the **vsiegmode** value depending on the global QinQ mode. The rest still uses these setting.

portvlan egmode set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
[mask]	Specifies the mask bitmap for ctag and stag mode: bit 0: ctag mode. bit 1: stag mode.
[ctag_egress_vlan_mode]	Specifies the egress mode of ctag.
[stag_egress_vlan_mode]	Specifies the egress mode of stag.

Examples

The following example is setting the egress mode based on port.

```
dev0@qca>portvlan egmode set 1
mask(0x0): 3
ctag_egress_vlan_mode(unmodified):
stag_egress_vlan_mode(unmodified):
operation done.
```

2.2.16   portvlan egmode get

Get the egress VLAN mode based on port, including ctag and stag mode.

portvlan egmode get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the egress mode based on port.

```
dev0@qca>portvlan egmode get 1
[mask]:0x0
[ctag_egress_vlan_mode]:UNMODIFIED
[stag_egress_vlan_mode]:UNMODIFIED
operation done.
```

2.2.17   portvlan translationmissaction set

Set the action when the packet does not match any ingress translation entry based on port.

portvlan translationmissaction set *<port_id>* *<forward|drop|cpycpu|rdtcpu>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<forward|drop|cpycpu|rdtcpu>	Specifies the action.

Examples

The following example is setting the translation miss action based on port.

```
dev0@qca>portvlan translationmissaction set 1 forward
operation done.
```

2.2.18   portvlan translationmissaction get

Get the action when packet does not match any ingress translation entry based on port.

portvlan translationmissaction get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the translation miss action based on port.

```
dev0@qca>portvlan translationmissaction get 1
[translation_miss_action]:FORWARD
operation done.
```

2.2.19   portvlan vsiegmode set

Set a port egress mode based on VSI.

portvlan vsiegmode set *<vsi> <port_id> <untagged/tagged/unmodified/untouched>*

Syntax description

Parameter	Description
<vsi>	Specifies the VSI. The range is 0-31.
<port_id>	Specifies the port ID. The range is 0-7.
<untagged|tagged|unmodified|untouched>	Specifies the egress mode.

Examples

The following example is setting a port egress mode based on VSI.

```
dev0@qca>portvlan vsiegmode set 1 1 unmodified
operation done.
```

2.2.20 portvlan vsiegmode get

Get the port egress mode based on VSI.

portvlan vsiegmode get *<vsi> <port_id>*

Syntax description

Parameter	Description
<vsi>	Specifies the VSI. The range is 0-31.
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the port egress mode based on VSI.

```
dev0@qca>portvlan vsiegmode get 1 1
[vsi_egress_vlan_mode]:UNMODIFIED
operation done.
```

2.2.21 portvlan vsiegmodeen set

Enable or disable the VSI egress mode based on port.

- When **vsiegmodeen** is disabled, ctag and stag egress mode uses the **egmode** setting.
- When **vsiegmodeen** is enabled, stag or ctag egress mode uses this setting depending on the global QinQ mode. The rest uses the **egmode** setting.

portvlan vsiegmodeen set *<port_id> <enable|disable>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<enable|disable>	Enables or disables the VSI egress mode based on port.

Examples

The following example is setting the VSI egress mode status based on port.

```
dev0@qca>portvlan vsiegmodeen set 1 enable
operation done.
```

2.2.22 portvlan vsiegmodeen get

Get the VSI egress mode status based on port.

portvlan vsiegmodeen get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the VSI egress mode status based on port.

```
dev0@qca>portvlan vsiegmodeen get 1
[vsi_egress_vlan_mode_en]:ENABLE
operation done.
```

2.2.23   portvlan translationadv add

Add a VLAN advanced translation entry based on port and direction.

portvlan translationadv add *<port_id>* *<ingress|egress>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<ingress|egress>	Specifies the ingress or egress VLAN translation entry.
[stagformat]	Specifies the stag format.
[svid_en]	Enables or disables the matching svid value.
[svid]	Specifies the svid value.
[spcp_en]	Enables or disables the matching spcp value.
[spcp]	Specifies the spcp value.
[sdei_en]	Enables or disables the matching sdei value.
[sdei]	Specifies the sdei value.
[ctagformat]	Specifies the stag format.
[cvid_en]	Enables or disables the matching cvid value.
[cvid]	Specifies the cvid value
[cpcp_en]	Enable/disable matching cpcp value
[cpcp]	Specifies the cpcp value
[cdei_en]	Enables or disables the matching cdei value.
[cdei]	Specifies the cdei value
[frame_type_en]	Enables or disables the matching frame type value.
[frametype]	Specifies the frame type value: 0 – Ethernet 1 – RFC_1042 2 – LLC_Other 3 – Ethernet or RFC1042
[protocol_en]	Enables or disables the matching protocol type value.

Parameter	Description
[protocol]	Specifies the protocol type, for example, 0x0800.
[vsivalid]	Specifies the matched packets' VSI is valid or not.
[vsi_en]	Enables or disables the matching VSI value.
[vsi]	Specifies the VSI.
[swap_svid_cvid]	Enables or disables the action of swaping svid and cvid. When enabled, the action depends on svid_translation_cmd and cvid_translation_cmd.
[svid_translation_cmd]	Specifies the svid translation command: 0 – Unchanged 1 – Add/replace or swap 2 – Delete
[svidtranslation]	Specifies the translation svid.
[cvid_translation_cmd]	Specifies the cvid translation command: 0 – Unchanged 1 – Add/replace or swap 2 – Delete
[cvidtranslation]	Specifies the translation cvid.
[swap_spcp_cpcp]	Enables or disables the action of swaping spcp and cpcp. When enabled, the action depends on spcp_translation_en and cpcp_translation_en.
[spcp_translation_en]	Specifies the spcp translation command: 0 – Unchanged 1 – Add or swap
[spcptranslation]	Specifies the translation spcp.
[cpcp_translation_en]	Specifies the cpcp translation command: 0 – Unchanged 1 – Add or swap
[cpcptranslation]	Specifies the translation cpcp.
[swap_sdei_cdei]	Enables or disables the action of swaping sdei and cdei. When enabled, the action depends on sdei_translation_en and cdei_translation_en.
[sdei_translation_en]	Specifies the sdei translation command: 0 – Unchanged 1 – Add or swap
[sdeitranslation]	Specifies the translation sdei.
[cdei_translation_en]	Specifies the cdei translation command: 0 – Unchanged 1 – Add or swap
[cdeitranslation]	Specifies the translation cdei.
[counter_en]	Enables or disables the packet counter which hits this translation entry.
[counter_id]	Specifies the counter index.
[vsi_translation_en]	Enables or disables the VSI translation.
[vsitranslation]	Specifies the assigned VSI.

Examples

The following example is adding a VLAN advanced translation entry based on port and direction.

```
dev0@qca>portvlan translationadv add 1 ingress
stagformat(0): 4
svid_en(yes): n
svid(0):
spcp_en (yes): n
spcp(0):
sdei_en (yes): n
sdei(0):
ctagformat(0): 4
cvid_en (yes): n
cvid(0):
cpcp_en (yes): n
cpcp(0):
cdei_en (yes): n
cdei(0):
frame_type_en(yes): n
frametype(0):
protocol_en(yes): n
protocol(0):
vsivalid(yes): n
vsi_en(yes): n
vsi(0):
swap_svid_cvid(yes): y
svid_translation_cmd(0): 1
svidtranslation (0):
cvid_translation_cmd(0): 1
cvidtranslation (0):
swap_spcp_cpcp(yes): n
spcp_translation_en(yes): n
spcptranslation(0):
cpcp_translation_en(yes): n
cpcptranslation(0):
swap_sdei_cdei(yes): n
sdei_translation_en(yes): n
sdeitranslation(0):
sdei_translation_en(yes): n
cdeitranslation(0):
counter_en (yes): n
counter_id(0):
vsi_translation_en(yes): n
vsitranslation(0):
operation done.
```

2.2.24 portvlan translationadv del

Delete a VLAN advanced translation entry based on port and direction.

portvlan translationadv del *\<port_id> \<ingress|egress>*

Syntax description

Parameter	Description
\<port_id>	Specifies the port ID. The range is 0-7.
\<ingress|egress>	Specifies the ingress or egress VLAN translation entry.
[stagformat]	Specifies the stag format.
[svid_en]	Enables or disables the matching svid value.
[svid]	Specifies the svid value.
[spcp_en]	Enables or disables the matching spcp value.
[spcp]	Specifies the spcp value.
[sdei_en]	Enables or disables the matching sdei value.
[sdei]	Specifies the sdei value.
[ctagformat]	Specifies the stag format.
[cvid_en]	Enable/disable matching cvid value
[cvid]	Specifies the cvid value
[cpcp_en]	Enables or disables the matching cpcp value.
[cpcp]	Specifies the cpcp value.
[cdei_en]	Enables or disables the matching cdei value.
[cdei]	Specifies the cdei value.
[frame_type_en]	Enables or disables the matching frame type value.
[frametype]	Specifies the frame type value: 0 – Ethernet 1 – RFC_1042 2 – LLC_Other 3 – Ethernet or RFC1042
[protocol_en]	Enables or disables the matching protocol type value.
[protocol]	Specifies the protocol type, for example, 0x0800.
[vsivalid]	Specifies the matched packets' VSI is valid or not.
[vsi_en]	Enables or disables the matching VSI value.
[vsi]	Specifies the VSI.
[swap_svid_cvid]	Enables or disables the action of swaping svid and cvid. When enabled, the action depends on svid_translation_cmd and cvid_translation_cmd.

Parameter	Description
[svid_translation_cmd]	Specifies the svid translation command: 0 – Unchanged 1 – Add/replace or swap 2 – Delete
[svidtranslation]	Specifies the translation svid.
[cvid_translation_cmd]	Specifies the cvid translation command: 0 – Unchanged 1 – Add/replace or swap 2 – Delete
[cvidtranslation]	Specifies the translation cvid.
[swap_spcp_cpcp]	Enables or disables the action of swaping spcp and cpcp. When enabled, the action depends on spcp_translation_en and cpcp_translation_en.
[spcp_translation_en]	Specifies the spcp translation command: 0 – Unchanged 1 – Add or swap
[spcptranslation]	Specifies the translation spcp.
[cpcp_translation_en]	Specifies the cpcp translation command: 0 – Unchanged 1 – Add or swap
[cpcptranslation]	Specifies the translation cpcp.
[swap_sdei_cdei]	Enables or disables the action of swaping sdei and cdei. When enabled, the action depends on sdei_translation_en and cdei_translation_en.
[sdei_translation_en]	Specifies the sdei translation command: 0 – Unchanged 1 – Add or swap
[sdeitranslation]	Specifies the translation sdei.
[cdei_translation_en]	Specifies the cdei translation command: 0 – Unchanged 1 – Add or swap
[cdeitranslation]	Specifies the translation cdei.
[counter_en]	Enables or disables the packet counter which hits this translation entry.
[counter_id]	Specifies the counter index.
[vsi_translation_en]	Enable/disable the VSI translation.
[vsitranslation]	Specifies the assigned VSI.

Examples

The following example is deleting a VLAN advanced translation entry based on port and direction.

```
dev0@qca>portvlan translationadv del 1 ingress
stagformat(0): 4
svid_en(yes): n
```

```
svid(0):
spcp_en (yes): n
spcp(0):
sdei_en (yes): n
sdei(0):
ctagformat(0): 4
cvid_en (yes): n
cvid(0):
cpcp_en (yes): n
cpcp(0):
cdei_en (yes): n
cdei(0):
frame_type_en(yes): n
frametype(0):
protocol_en(yes): n
protocol(0):
vsivalid(yes): n
vsi_en(yes): n
vsi(0):
swap_svid_cvid(yes): y
svid_translation_cmd(0): 1
svidtranslation (0):
cvid_translation_cmd(0): 1
cvidtranslation (0):
swap_spcp_cpcp(yes): n
spcp_translation_en(yes): n
spcptranslation(0):
cpcp_translation_en(yes): n
cpcptranslation(0):
swap_sdei_cdei(yes): n
sdei_translation_en(yes): n
sdeitranslation(0):
sdei_translation_en(yes): n
cdeitranslation(0):
counter_en (yes): n
counter_id(0):
vsi_translation_en(yes): n
vsitranslation(0):
operation done.
```

2.2.25   portvlan translationadv getfirst

Get a VLAN advanced translation first entry based on port and direction.

portvlan translationadv getfirst *<port_id> <ingress|egress>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<ingress|egress>	Specifies the ingress or egress VLAN translation entry.

Examples

The following example is getting a VLAN advanced translation first entry based on port and direction.

```
dev0@qca>portvlan translationadv getfirst 1 ingress
 rule field:
[port_bitmap]:0x2
[stagformat]:0x4
[svid_en]:DISABLE   [svid]:0
[spcp_en]:DISABLE   [spcp]:0
[sdei_en]:DISABLE   [sdei]:0
[ctagformat]:0x4
[cvid_en]:DISABLE   [cvid]:0
[cpcp_en]:DISABLE   [cpcp]:0
[cdei_en]:DISABLE   [cdei]:0
[frame_type_en]:DISABLE   [frametype]:0x0
[protocol_en]:DISABLE   [protocol]:0x0
[vsivalid]:DISABLE   [vsi_en]:DISABLE   [vsi]:0
 action field:
[swap_svid_cvid]:ENABLE
[svid_translation_cmd]:0 [svidtranslation]:1  [cvid_translation _cmd]:0
[cvidtranslation]:0
[swap_spcp_cpcp]:ENABLE
[spcp_translation_en]:ENABLE   [spcptranslation]:0
[cpcp_translation_en]:ENABLE   [cpcptranslation]:0
[swap_sdei_cdei]:ENABLE
[sdei_translation_en]:ENABLE   [sdeitranslation]:0
[cdei_translation_en]:ENABLE   [cdeitranslation]:0
[counter_en]:ENABLE   [counter_id]:0
[vsi_translation_en]:ENABLE   [vsitranslation]:0
operation done.
```

2.2.26   portvlan translationadv getnext

Get a VLAN advanced translation next entry based on port and direction.

portvlan translationadv getnext *<port_id>* *<ingress\|egress>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<ingress|egress>	Specifies the ingress or egress VLAN translation entry.

Parameter	Description
[stagformat]	Specifies the stag format.
[svid_en]	Enables or disables the matching svid value.
[svid]	Specifies the svid value.
[spcp_en]	Enables or disables the matching spcp value.
[spcp]	Specifies the spcp value.
[sdei_en]	Enables or disables the matching sdei value.
[sdei]	Specifies the sdei value.
[ctagformat]	Specifies the stag format.
[cvid_en]	Enables or disables the matching cvid value.
[cvid]	Specifies the cvid value.
[cpcp_en]	Enables or disables the matching cpcp value.
[cpcp]	Specifies the cpcp value.
[cdei_en]	Enables or disables the matching cdei value.
[cdei]	Specifies the cdei value.
[frame_type_en]	Enables or disables the matching frame type value.
[frametype]	Specifies the frame type value: 0 – Ethernet 1 – RFC_1042 2 – LLC_Other 3 – Ethernet or RFC1042
[protocol_en]	Enables or disables the matching protocol type value.
[protocol]	Specifies the protocol type, for example, 0x0800.
[vsivalid]	Specifies the matched packets' VSI is valid or not.
[vsi_en]	Enables or disables the matching VSI value
[vsi]	Specifies the VSI.
[swap_svid_cvid]	Enables or disables the action of swaping svid and cvid. When enabled, the action depends on svid_translation_cmd and cvid_translation_cmd.
[svid_translation_cmd]	Specifies the svid translation command: 0 – Unchanged 1 – Add/replace or swap 2 – Delete
[svidtranslation]	Specifies the translation svid.
[cvid_translation_cmd]	Specifies the cvid translation command: 0 – Unchanged 1 – Add/replace or swap 2 – Delete
[cvidtranslation]	Specifies the translation cvid.
[swap_spcp_cpcp]	Enables or disables the action of swaping spcp and cpcp. When enabled, the action depends on spcp_translation_en and cpcp_translation_en.

Parameter	Description
[spcp_translation_en]	Specifies the spcp translation command: 0 – Unchanged 1 – Add or swap
[spcptranslation]	Specifies the translation spcp.
[cpcp_translation_en]	Specifies the cpcp translation command: 0 – Unchanged 1 – Add or swap
[cpcptranslation]	Specifies the translation cpcp.
[swap_sdei_cdei]	Enables or disables the action of swaping sdei and cdei. When enabled, the action depends on sdei_translation_en and cdei_translation_en.
[sdei_translation_en]	Specifies the sdei translation command: 0 – Unchanged 1 – Add or swap
[sdeitranslation]	Specifies the translation sdei.
[cdei_translation_en]	Specifies the cdei translation command: 0 – Unchanged 1 – Add or swap
[cdeitranslation]	Specifies the translation cdei.
[counter_en]	Enables or disables the packet counter which hits this translation entry.
[counter_id]	Specifies the counter index.
[vsi_translation_en]	Enables or disables the VSI translation.
[vsitranslation]	Specifies the assigned VSI.

Examples

The following example is getting a VLAN advanced translation next entry based on port and direction.

```
dev0@qca>portvlan translationadv getnext 1 ingress
stagformat(0): 4
svid_en(yes): n
svid(0):
spcp_en (yes): n
spcp(0):
sdei_en (yes): n
sdei(0):
ctagformat(0): 4
cvid_en (yes): n
cvid(0):
cpcp_en (yes): n
cpcp(0):
cdei_en (yes): n
cdei(0):
frame_type_en(yes): n
frametype(0):
```

```
protocol_en(yes): n
protocol(0):
vsivalid(yes): n
vsi_en(yes): n
vsi(0):
swap_svid_cvid(yes): y
svid_translation_cmd(0): 1
svidtranslation (0):
cvid_translation_cmd(0): 1
cvidtranslation (0):
swap_spcp_cpcp(yes): n
spcp_translation_en(yes): n
spcptranslation(0):
cpcp_translation_en(yes): n
cpcptranslation(0):
swap_sdei_cdei(yes): n
sdei_translation_en(yes): n
sdeitranslation(0):
sdei_translation_en(yes): n
cdeitranslation(0):
counter_en (yes): n
counter_id(0):
vsi_translation_en(yes): n
vsitranslation(0):
rule field:
[port_bitmap]:0x2
[stagformat]:0x7
[svid_en]:DISABLE   [svid]:0
[spcp_en]:DISABLE   [spcp]:0
[sdei_en]:DISABLE   [sdei]:0
[ctagformat]:0x7
[cvid_en]:DISABLE   [cvid]:0
[cpcp_en]:DISABLE   [cpcp]:0
[cdei_en]:DISABLE   [cdei]:0
[frame_type_en]:DISABLE   [frametype]:0x0
[protocol_en]:DISABLE   [protocol]:0x0
[vsivalid]:DISABLE   [vsi_en]:DISABLE   [vsi]:0
 action field:
[swap_svid_cvid]:ENABLE
[svid_translation_cmd]:0   [svidtranslation]:1   [cvid_translation _cmd]:0
[cvidtranslation]:0
[swap_spcp_cpcp]:ENABLE
[spcp_translation_en]:ENABLE   [spcptranslation]:0
[cpcp_translation_en]:ENABLE   [cpcptranslation]:0
[swap_sdei_cdei]:ENABLE
[sdei_translation_en]:ENABLE   [sdeitranslation]:0
[cdei_translation_en]:ENABLE   [cdeitranslation]:0
```

```
[counter_en]:ENABLE  [counter_id]:0
[vsi_translation_en]:ENABLE  [vsitranslation]:0
operation done.
```

2.2.27 portvlan counter flush

Flush the VLAN counter based on the counter index.

portvlan counter flush *<index>*

Syntax description

Parameter	Description
<index>	Specifies the counter index. The range is 0-63.

Examples

The following example is flushing the VLAN counter based on the counter index.

```
dev0@qca>portvlan counter flush 1
operation done.
```

2.2.28 portvlan counter get

Get the VLAN counter based on the counter index.

portvlan counter get *<index>*

Syntax description

Parameter	Description
<index>	Specifies the counter index. The range is 0-63.

Examples

The following example is getting the VLAN counter based on the counter index.

```
dev0@qca>portvlan counter get 1
rx_packet_counter:0x0, rx_byte_counter:0x0
tx_packet_counter:0x0, tx_byte_counter:0x0
operation done.
```

2.3   FDB

FDB is the L2 forwarding engine between all physical ports, virtual ports and trunk group. L2 address aging and learning are supported as auto mode and control mode. L2 address learning and forwarding is based on the MAC address and VSI.

FDB supports FDB entry add/flush/get/search; entry aging and learning mode; learning, station move and MAC limit control based on port and so on.

2.3.1   fdb entry add

Add a FDB entry to a device.

fdb entry add

Syntax description

Parameter	Description
[addr]	Specifies the MAC address, format is XX-XX-XX-XX-XX-XX
[fid]	Specifies the VSI. The range is 0-31.
[dacmd]	Specifies the action when the packet dest MAC address matches the addr and VSI matches the fid. The default action is forward.
[sacmd]	Specifies the action when the packet source MAC address matches the addr and VSI matches the fid. The default action is forward.
[dest port]	Specifies the port of fdb entry learn. It supports physical port, trunk and virtual port.
[static]	Specifies the fdb entry is static or not. The fdb entry does not age out if it is a static entry, and it also cannot stationmove.
[leaky]	Not supported in IPQ60xx
[mirror]	Not supported in IPQ60xx
[clone]	Not supported in IPQ60xx
[queue override]	Not supported in IPQ60xx
[cross_pt_state]	Not supported in IPQ60xx
[white_list_en]	Not supported in IPQ60xx
[load_balance_en]	Not supported in IPQ60xx

Examples

The following example is adding a fdb entry.

```
dev0@qca>fdb entry add
addr: 00-00-00-00-00-01
fid(65535): 1
dacmd(forward):
sacmd(forward):
dest port(null): 1
static(yes):
leaky(no):
mirror(no):
clone(no):
queue override(no):
cross_pt_state(no):
white_list_en(no):
load_balance_en(no):
operation done.
```

2.3.2   fdb entry del

Delete a FDB entry from a device. Note that the Keys to delete are [addr] and [fid].

fdb entry del

Syntax description

Parameter	Description
[addr]	Specifies the MAC address, format is XX-XX-XX-XX-XX-XX
[fid]	Specifies the VSI. The range is 0-31.
[dacmd]	Specifies the action when the packet dest MAC address matches the addr and VSI matches the fid. The default action is forward.
[sacmd]	Specifies the action when the packet source MAC address matches the addr and VSI matches the fid. The default action is forward.
[dest port]	Specifies the port of fdb entry learn. It supports physical port, trunk and virtual port.
[static]	Specifies the fdb entry is static or not. The fdb entry does not age out if it is a static entry, and it also cannot stationmove.
[leaky]	Not supported in IPQ60xx
[mirror]	Not supported in IPQ60xx
[clone]	Not supported in IPQ60xx
[queue override]	Not supported in IPQ60xx
[cross_pt_state]	Not supported in IPQ60xx
[white_list_en]	Not supported in IPQ60xx
[load_balance_en]	Not supported in IPQ60xx

Examples

The following example is deleting a fdb entry.

```
dev0@qca>fdb entry del
addr: 00-00-00-00-00-01
fid(65535): 1
dacmd(forward):
sacmd(forward):
dest port(null): 1
static(yes):
leaky(no):
mirror(no):
clone(no):
queue override(no):
cross_pt_state(no):
white_list_en(no):
load_balance_en(no):
operation done.
```

2.3.3   fdb entry flush

Delete all FDB entries from a device.

fdb entry flush <0:dynamic only|1:dynamic and static>

Syntax description

Parameter	Description
<0:dynamic only|1:dynamic and static>	Specifies the delete options. 0 – Only delete fdb entries where "static" = no 1 – Delete all fdb entries

Examples

The following example is flushing fdb entries.

```
dev0@qca>fdb entry flush 1
operation done.
```

2.3.4   fdb entry show

Show the whole fdb entries.

fdb entry show

Syntax description

Parameter	Description
None	–

Examples

The following example is showing the whole fdb entries.

```
dev0@qca>fdb entry show
[addr]:00-00-00-00-00-11 [fid]:2 [static]:NO [dest_port]:1
[dacmd]:FORWARD [sacmd]:FORWARD [leaky]:NO [mirror]:NO [clone]:NO [da_pri]:NO
[queue]:0 [cross_pt_state]:NO [white_list_en]:NO [load_balance_en]:NO
total 1 entries
operation done.
```

2.3.5   fdb entry find

Find a fdb entry. Note that the Keys to find are [addr] and [fid].

fdb entry find

Syntax description

Parameter	Description
[addr]	Specifies the MAC address, format is XX-XX-XX-XX-XX-XX.
[fid]	Specifies the VSI. The range is 0-31.
[dacmd]	Specifies the action when the packet dest MAC address matches the addr and VSI matches the fid. The default action is forward.
[sacmd]	Specifies the action when the packet source MAC address matches the addr and VSI matches the fid. The default action is forward.
[dest port]	Specifies the port of fdb entry learn. It supports physical port, trunk and virtual port.
[static]	Specifies the fdb entry is static or not. The fdb entry does not age out if it is a static entry, and it also cannot stationmove.
[leaky]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[clone]	Not supported in IPQ60xx.
[queue override]	Not supported in IPQ60xx.
[cross_pt_state]	Not supported in IPQ60xx.
[white_list_en]	Not supported in IPQ60xx.
[load_balance_en]	Not supported in IPQ60xx.

Examples

The following example is finding a fdb entry.

```
dev0@qca>fdb entry find
addr: 00-00-00-00-00-01
fid(65535): 1
dacmd(forward):
sacmd(forward):
dest port(null): 1
static(yes):
leaky(no):
mirror(no):
clone(no):
queue override(no):
cross_pt_state(no):
white_list_en(no):
load_balance_en(no):
[addr]:00-00-00-00-00-01 [fid]:1 [static]:YES [dest_port]:1
[dacmd]:FORWARD [sacmd]:FORWARD [leaky]:NO [mirror]:NO [clone]:NO [da_pri]:NO
[queue]:0 [cross_pt_state]:NO [white_list_en]:NO [load_balance_en]:NO
operation done.
```

2.3.6   fdb entry iterate

Get the next valid index of fdb entry. It returns the first entry which index is larger than the iterator.

fdb entry iterate <*iterator*>

Syntax description

Parameter	Description
<iterator>	Specifies the index of the fdb entry.

Examples

The following example is getting the next valid index of fdb entry.

```
dev0@qca>fdb entry iterate 1000
[Iterator]:0x771
[addr]:00-00-00-00-00-01 [fid]:1 [static]:YES [dest_port]:1
[dacmd]:FORWARD [sacmd]:FORWARD [leaky]:NO [mirror]:NO [clone]:NO [da_pri]:NO
[queue]:0 [cross_pt_state]:NO [white_list_en]:NO [load_balance_en]:NO
operation done.
```

2.3.7 fdb entry extendfirst

Find the first fdb entry with filtered fields. Note that this function returns the first entry of fdb table. If [port_en] or [fid_en] is enabled, they are the filtered keys. Returned entry is based on the matched filtered keys.

fdb entry extendfirst

Syntax description

Parameter	Description
[port_en]	Specifies the found fdb entry port that matches the dest port.
[fid_en]	Specifies the found fdb entry fid that matches the fid.
[multi_en]	Not supported in IPQ60xx.
[addr]	Specifies the MAC address, format is XX-XX-XX-XX-XX-XX.
[fid]	Specifies the VSI. The range is 0-31.
[dacmd]	Specifies the action when the packet dest MAC address matches the addr and VSI matches the fid. The default action is forward.
[sacmd]	Specifies the action when the packet source MAC address matches the addr and VSI matches the fid. The default action is forward.
[dest port]	Specifies the port of fdb entry learn. It supports physical port, trunk and virtual port.
[static]	Specifies the fdb entry is static or not. The fdb entry does not age out if it is a static entry, and it also cannot stationmove.
[leaky]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[clone]	Not supported in IPQ60xx.
[queue override]	Not supported in IPQ60xx.
[cross_pt_state]	Not supported in IPQ60xx.
[white_list_en]	Not supported in IPQ60xx.
[load_balance_en]	Not supported in IPQ60xx.

Examples

The following example is finding the first fdb entry with the filtered fields.

```
dev0@qca>fdb entry extendfirst
port_en(no): y
fid_en(no):
multi_en(no):
addr: 00-00-00-00-00-11
fid(65535): 1
dacmd(forward):
sacmd(forward):
dest port(null): 1
static(yes):
leaky(no):
mirror(no):
clone(no):
queue override(no):
cross_pt_state(no):
white_list_en(no):
load_balance_en(no):
[addr]:00-00-00-00-00-11 [fid]:2 [static]:NO [dest_port]:1
[dacmd]:FORWARD [sacmd]:FORWARD [leaky]:NO [mirror]:NO [clone]:NO [da_pri]:NO
[queue]:0 [cross_pt_state]:NO [white_list_en]:NO [load_balance_en]:NO
operation done.
```

2.3.8   fdb entry extendnext

Find the next fdb entry with the filtered fields. Note that this function returns the next entry of the fdb table based on the input entry. If [port_en] or [fid_en] is enabled, they are the filtered keys. Returned entry is based on the matched filtered keys.

fdb entry extendnext

Syntax description

Parameter	Description
[port_en]	Specifies the found fdb entry port that matches the dest port.
[fid_en]	Specifies the found fdb entry fid that matches the fid.
[multi_en]	Not supported in IPQ60xx.
[addr]	Specifies the MAC address, format is XX-XX-XX-XX-XX-XX.
[fid]	Specifies the VSI. The range is 0-31.
[dacmd]	Specifies the action when the packet dest MAC address matches the addr and VSI matches the fid. The default action is forward.
[sacmd]	Specifies the action when the packet source MAC address matches the addr and VSI matches the fid. The default action is forward.
[dest port]	Specifies the port of fdb entry learn. It supports physical port, trunk and virtual port.
[static]	Specifies the fdb entry is static or not. The fdb entry does not age out if it is a static entry, and it also cannot stationmove.

Parameter	Description
[leaky]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[clone]	Not supported in IPQ60xx.
[queue override]	Not supported in IPQ60xx.
[cross_pt_state]	Not supported in IPQ60xx.
[white_list_en]	Not supported in IPQ60xx.
[load_balance_en]	Not supported in IPQ60xx.

Examples

The following example is finding the next fdb entry with the filtered fields.

```
dev0@qca>fdb entry extendnext
port_en(no):
fid_en(no):
multi_en(no):
addr: 00-00-00-00-00-11
fid(65535): 2
dacmd(forward):
sacmd(forward):
dest port(null): 1
static(yes):
leaky(no):
mirror(no):
clone(no):
queue override(no):
cross_pt_state(no):
white_list_en(no):
load_balance_en(no):
[addr]:00-00-00-00-00-01 [fid]:1 [static]:YES [dest_port]:1
[dacmd]:FORWARD [sacmd]:FORWARD [leaky]:NO [mirror]:NO [clone]:NO [da_pri]:NO
[queue]:0 [cross_pt_state]:NO [white_list_en]:NO [load_balance_en]:NO
operation done.
```

2.3.9   fdb entry transfer

Replace or transfer the old port ID with the new port ID in the fdb entry. Fid(VSI), the Key, replaces the fdb dest port from the old port ID to the new port ID.

fdb entry transfer *<old port_id> <new port_id> <fid>*

Syntax description

Parameter	Description
<old port_id>	Specifies the old dest port of the current fdb entry.
<new port_id>	Specifies the new dest port of the current fdb entry.

Parameter	Description
<fid>	Specifies the matched the fid of fdb entry. It is the Key.
[port_en]	Not supported in IPQ60xx.
[fid_en]	Not supported in IPQ60xx.
[multi_en]	Not supported in IPQ60xx.

Examples

The following example is replacing the fdb dest port from the old port ID to the new port ID.

```
dev0@qca>fdb entry transfer 1 3 2
port_en(no):
fid_en(no):
multi_en(no):
operation done.
```

2.3.10   fdb portEntry flush

Flush all fdb entries by port.

fdb portentry flush *<port_id> <0:dynamic only|1:dynamic and static>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. It supports physical port, trunk and virtual port.
<0:dynamic only|1:dynamic and static >	Specifies the delete options. 0 – Only delete fdb entries where "static" = no 1 – Delete all fdb entries

Examples

The following example is flushing all fdb entries by port:

```
dev0@qca>fdb portentry flush 1 1
operation done.
```

2.3.11   fdb fidEntry flush

Flush all fdb entries by fid.

fdb fidentry flush *<fid> <0:dynamic only|1:dynamic and static>*

Syntax description

Parameter	Description
<fid>	Specifies the FID.
<0:dynamic only|1:dynamic and static >	Specifies the delete options. 0 – Only delete fdb entries where "static" = no 1 – Delete all fdb entries

Examples

The following example is flushing all fdb entries by fid:

```
dev0@qca>fdb fidentry flush 1 1
operation done.
```

2.3.12   fdb firstEntry find

Find the first fdb entry. Note that this function returns the first entry of the fdb table.

fdb firstentry find

Syntax description

Parameter	Description
None	–

Examples

The following example is finding the first entry.

```
dev0@qca>fdb firstEntry find
[addr]:00-00-00-00-00-11 [fid]:2 [static]:NO [dest_port]:1
[dacmd]:FORWARD [sacmd]:FORWARD [leaky]:NO [mirror]:NO [clone]:NO [da_pri]:NO
[queue]:0 [cross_pt_state]:NO [white_list_en]:NO [load_balance_en]:NO
operation done.
```

2.3.13   fdb nextEntry find

Find the next fdb entry. Note that this function returns the next entry of fdb table. It is based on the input entry index, and [addr] and [fid] are the Keys to find the index.

fdb nextentry find

Syntax description

Parameter	Description
[addr]	Specifies the MAC address, format is XX-XX-XX-XX-XX-XX.
[fid]	Specifies the VSI. The range is 0-31.
[dacmd]	Specifies the action when the packet dest MAC address matches the addr and VSI matches the fid. The default action is forward.

Parameter	Description
[sacmd]	Specifies the action when the packet source MAC address matches the addr and VSI matches the fid. The default action is forward.
[dest port]	Specifies the port of current fdb entry learn. It supports physical port, trunk and virtual port.
[static]	Specifies the fdb entry is static or not. The fdb entry does not age out if it is a static entry, and it also cannot stationmove.
[leaky]	Not supported in IPQ60xx
[mirror]	Not supported in IPQ60xx
[clone]	Not supported in IPQ60xx
[queue override]	Not supported in IPQ60xx
[cross_pt_state]	Not supported in IPQ60xx
[white_list_en]	Not supported in IPQ60xx
[load_balance_en]	Not supported in IPQ60xx

Examples

The following example is finding the next entry.

```
dev0@qca>fdb nextEntry find
addr: 00-00-00-00-00-11
fid(65535): 2
dacmd(forward):
sacmd(forward):
dest port(null): 1
static(yes):
leaky(no):
mirror(no):
clone(no):
queue override(no):
cross_pt_state(no):
white_list_en(no):
load_balance_en(no):
[addr]:00-00-00-00-00-12 [fid]:2 [static]:NO [dest_port]:1
[dacmd]:FORWARD [sacmd]:FORWARD [leaky]:NO [mirror]:NO [clone]:NO [da_pri]:NO
[queue]:0 [cross_pt_state]:NO [white_list_en]:NO [load_balance_en]:NO
operation done.
```

2.3.14   fdb ptlearnCtrl set

Set the new MAC address learning status and packet action based on port.

fdb ptlearnCtrl set *<port_id>* *<enable|disable>* *<forward|drop|cpycpu|rdtcpu>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<enable|disable>	Specifies the new MAC address learning status.
<forward|drop|cpycpu|rdtcpu>	Specifies the new packet action.

Examples

The following example is setting the new MAC address learning status and packet action based on port.

```
dev0@qca>fdb ptlearnCtrl set 1 enable forward
operation done.
```

2.3.15   fdb ptlearnCtrl get

Get the new MAC address learning status and packet action based on port.

fdb ptlearnCtrl get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the new MAC address learning status and packet action based on port.

```
dev0@qca>fdb ptlearnCtrl get 1
[Learn Ctrl]:ENABLE[Action]:FORWARD
operation done.
```

2.3.16   fdb ptStationMove set

Set the station move status and packet action based on port.

fdb ptStationMove set *<port_id>* *<enable\|disable>* *<forward\|drop\|cpycpu\|rdtcpu>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<enable|disable>	Specifies the station move status.
<forward|drop|cpycpu|rdtcpu>	Specifies the station move action.

Examples

The following example is setting the station move status and packet action based on port.

```
dev0@qca>fdb ptstationMove set 1 enable forward
operation done.
```

2.3.17 fdb ptStationMove get

Get the station move status and packet action based on port.

fdb ptStationMove get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the station move status and packet action based on port.

```
dev0@qca>fdb ptstationMove get 1
[Station Move]:ENABLE[Action]:FORWARD
operation done.
```

2.3.18 fdb agectrl set

Set the fdb entry aging status.

fdb agectrl set <*enable|disable*>

Syntax description

Parameter	Description
<enable|disable>	Specifies the fdb entry aging status.

Examples

The following example is setting the fdb entry aging status.

```
dev0@qca>fdb agectrl set enable
operation done.
```

2.3.19 fdb agectrl get

Get the fdb entry aging status.

fdb agectrl get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the fdb entry aging status.

```
dev0@qca>fdb agectrl get
[Age]:ENABLE
operation done.
```

2.3.20   fdb learnctrl set

Set the fdb entry global learning status.

fdb learnctrl set <*enable|disable*>

Syntax description

Parameter	Description
<*enable|disable*>	Specifies the fdb entry global learning status.

Examples

The following example is setting the fdb entry global learning status.

```
dev0@qca>fdb learnctrl set enable
operation done.
```

2.3.21   fdb learnctrl get

Get the fdb entry global learning status.

fdb learnctrl get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the fdb entry global learning status.

```
dev0@qca>fdb learnctrl get
[Learn Ctrl]:ENABLE
operation done.
```

2.3.22   fdb agetime set

Set the fdb entry aging time.

fdb agetime set <*time:s*>

Syntax description

Parameter	Description
<time:s>	Specifies the time of the fdb entry aging out.

Examples

The following example is setting the fdb entry aging time.

```
dev0@qca>fdb agetime set 0x96
[Time]:0x96
operation done.
```

2.3.23   fdb agetime get

Get the fdb entry aging time.

fdb agetime get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the fdb entry aging time.

```
dev0@qca>fdb agetime get
[Time]:0x96
operation done.
```

2.3.24   fdb ptlearncounter get

Get the learned fdb entry counter based on a port.

fdb ptlearncounter get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the learned fdb entry counter based on a port:

```
dev0@qca>fdb ptlearncounter get 1
[LearnCnt]:0x2
operation done.
```

2.3.25   fdb ptmaclimitctrl set

Set the MAC limit status, MAC limit counter and actions when exceeding the MAC limited counter based on port.

fdb ptmaclimitctrl set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
[maclimit status]	Specifies the MAC limit status.
[maclimit counter]	Specifies the MAC limit counter.
[maclimit exceed action]	Specifies the actions when exceeding the MAC limited counter.

Examples

The following example is setting the MAC limit status, MAC limit counter and actions when exceeding the MAC limited counter based on port.

```
dev0@qca>fdb ptmaclimitctrl set 1
maclimit status(yes): yes
maclimit counter(2048): 0x800
maclimit exceed action(forward): forward
operation done.
```

2.3.26   fdb ptmaclimitctrl get

Get the MAC limit status, MAC limit counter and actions when exceeding the MAC limited number based on a port.

fdb ptmaclimitctrl get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the MAC limit status, MAC limit counter and actions when exceeding the MAC limited number based on port.

```
dev0@qca>fdb ptmaclimitctrl get 1
[maclimit status]:YES [maclimit counter]:0x800 [maclimit exceed
action]:FORWARD
operation done.
```

2.4　QOS

QOS commands are designed for QOS configurartion. QOS commands include setting/getting scheduler for queue, ring queue bitmap, pcp/dscp/flow remapping, pcp/dscp remark, priority precedence, and reset queue scheduler of one port to DTS configuration.

2.4.1　qos ptgroup set

Set the port QOS group ID for pcp and dscp remapping based on the VP port.

qos ptgroup set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-255.
[pcp_group]	Specifies the pcp group ID. The range is 0-1.
[dscp_group]	Specifies the dscp group ID. The range is 0-1.
[flow_group]	0

Examples

The following example is setting group 1 for port 1.

```
dev0@qca>qos ptgroup set 1
pcp_group(0): 1
dscp_group(0): 1
flow_group(0): 0
operation done.
```

2.4.2　qos ptgroup get

Get the group ID for pcp and dscp remapping based on the VP port.

qos ptgroup get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-255.

Examples

The following example is to get the group ID for port 1.

```
dev0@qca>qos ptgroup get 1
[pcp_group]:0x1 [dscp_group]:0x1 [flow_group]:0x0
operation done.
```

2.4.3   qos ptpriprece set

Set the QOS priority precedence based on the VP port.

qos ptpriprece set <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-255.
[pcp_pri_prece]	Specifies the pcp precedence. The range is 0-7.
[dscp_pri_prece]	Specifies the dscp precedence. The range is 0-7.
[preheader_pri_prece]	Specifies the preheader precedence. The range is 0-7.
[flow_pri_prece]	Specifies the flow precedence. The range is 0-7.
[acl_pri_prece]	Specifies the acl precedence. The range is 0-7.
[post_acl_pri_prece]	Specifies the acl precedence. The range is 0-7.
[pcp_pri_force]	Enables/disables force pcp precedence.
[dscp_pri_force]	Enables/disables force dscp precedence.

Examples

The following example is setting the priority precedence for port 1.

```
dev0@qca>qos ptpriprece set 1
pcp_pri_prece(0):
dscp_pri_prece(0): 1
preheader_pri_prece(0): 2
flow_pri_prece(0): 3
acl_pri_prece(0): 4
post_acl_pri_prece(0): 5
pcp_pri_force(no): no
dscp_pri_force(no): no
operation done.
```

2.4.4   qos ptpriprece get

Get the port QOS priority precedence.

qos ptpriprece get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Port ID. The range is 0-255.

Examples

The following example is getting the priority precedence for port 1.

```
dev0@qca>qos ptpri get 1
[pcp_pri_prece]:0x0 [dscp_pri_prece]:0x1 [preheader_pri_prece]:0x2
[flow_pri_prece]:0x3 [acl_pri_prece]:0x4 [post_acl_pri_prece]:0x5
[pcp_pri_force]:0x0 [dscp_pri_force]:0x0
operation done.
```

2.4.5   qos pcpmap set

Set the pcp remapping to internal pcp, dscp, priority, dp, change enable, precedence based on group.

qos pcpmap set *<group_id>* *<pcp>*

Syntax description

Parameter	Description
<group_id>	Specifies the group ID. The range is 0-1.
<pcp>	Specifies the pcp value. The range is 0-15.
[internal_pcp]	Specifies the internal pcp mapping value. The range is 0-7.
[internal_dei]	Specifies the internal dei mapping value. The range is 0-1.
[internal_pri]	Specifies the internal priority mapping value. The range is 0-16.
[internal_dscp]	Specifies the internal dscp mapping value. The range is 0-63.
[internal_dp]	Specifies the internal drop precedence value. The range is 0-3.
[dscp_mask]	Specifies the mask of the dscp value.
[dscp_en]	Enables/disables change dscp.
[pcp_en]	Enables/disables change pcp.
[dei_en]	Enables/disables change dei.
[pri_en]	Enables/disables change internal priority.
[dp_en]	Enables/disables change dp.
[qos_prec]	Specifies the resolution precedence.

Examples

The following example is setting internal priority 1 for pcp 1.

```
dev0@qca>qos pcpmap set 1 1
internal_pcp(0):
internal_dei(0):
internal_pri(0): 1
```

```
internal_dscp(0):
internal_dp(0):
dscp_mask(0):
dscp_en(no):
pcp_en(no):
dei_en(no):
pri_en(no):
dp_en(no):
qos_prec(0):
operation done.
```

2.4.6   qos pcpmap get

Get the internal pcp, dscp, priority, dp mapping, change enable, precedence by pcp based on group.

qos pcpmap get <*group_id*> <*pcp*>

Syntax description

Parameter	Description
<group_id>	Specifies the group ID. The range is 0-1.
<pcp>	Specifies the pcp value. The range is 0-15.

Examples

The following example is getting the internal pcp/dscp/priority/dp mapping for packet pcp 1 on group 1.

```
dev0@qca>qos pcpmap get 1 1
[internal_pcp]:0x0 [internal_dei]:0x0 [internal_pri]:0x1
[internal_dscp]:0x0 [internal_dp]:0x0 [dscp_mask]:0x0
[dscp_en]:0x0 [pcp_en]:0x0 [dei_en]:0x0
[pri_en]:0x0 [dp_en]:0x0 [qos_prec]:0x0
operation done.
```

2.4.7   qos flowmap set

Set the matched flow entry to the internal pcp, dscp, priority, dp, change enable, precedence based on entry ID.

qos flowmap set <*group_id*> <*flow*>

Syntax description

Parameter	Description
<group_id>	0
<flow>	Specifies the flow entry ID. The range is 0-2047.
[internal_pcp]	Specifies the internal pcp mapping value. The range is 0-7.
[internal_dei]	Specifies the internal dei mapping value. The range is 0-1.
[internal_pri]	Specifies the internal priority mapping value. The range is 0-15.

Parameter	Description
[internal_dscp]	Specifies the internal dscp mapping value. The range is 0-63.
[internal_dp]	Specifies the internal drop precedence value. The range is 0-3.
[dscp_mask]	Specifies the mask of the dscp value.
[dscp_en]	Enables/disables change dscp.
[pcp_en]	Enables/disables change pcp.
[dei_en]	Enables/disables change dei.
[pri_en]	Enables/disables change internal priority.
[dp_en]	Enables/disables change dp.
[qos_prec]	Specifies the resolution precedence.

Examples

The following example is setting priority 2 for flow index 1.

```
dev0@qca>qos flowmap set 0 1
internal_pcp(0):
internal_dei(0):
internal_pri(0): 2
internal_dscp(0):
internal_dp(0):
dscp_mask(0):
dscp_en(no):
pcp_en(no):
dei_en(no):
pri_en(no):
dp_en(no):
qos_prec(0):
operation done.
```

2.4.8   qos flowmap get

Get the internal pcp, dscp, priority, dp mapping, change enable, precedence based on entry ID.

qos flowmap get <*group_id*> <*flow*>

Syntax description

Parameter	Description
<*group_id*>	0
<*flow*>	Specifies the flow entry ID. The range is 0-2047.

Examples

The following example is getting the internal pcp/dscp/priority/dp mapping for flow index 1.

```
dev0@qca>qos flowmap get 0 1
[internal_pcp]:0x0 [internal_dei]:0x0 [internal_pri]:0x2
```

```
[internal_dscp]:0x0 [internal_dp]:0x0 [dscp_mask]:0x0
[dscp_en]:0x0 [pcp_en]:0x0 [dei_en]:0x0
[pri_en]:0x0 [dp_en]:0x0 [qos_prec]:0x0
operation done.
```

2.4.9   qos dscpmap set

Set the dscp remapping to internal pcp, dscp, priority, dp, change enable and precedence based on group.

qos dscpmap set <group_id> <dscp>

Syntax description

Parameter	Description
<group_id>	Specifies the group ID. The range is 0-1.
<dscp>	Specifies the dscp value. The range is 0-255.
[internal_pcp]	Specifies the internal pcp mapping value. The range is 0-7.
[internal_dei]	Specifies the internal dei mapping value. The range is 0-1.
[internal_pri]	Specifies the internal priority mapping value. The range is 0-15.
[internal_dscp]	Specifies the internal dscp mapping value. The range is 0-63.
[internal_dp]	Specifies the internal drop precedence value. The range is 0-3.
[dscp_mask]	Specifies the mask of the dscp value.
[dscp_en]	Enables/disables change dscp.
[pcp_en]	Enables/disables change pcp.
[dei_en]	Enables/disables change dei.
[pri_en]	Enables/disables change internal priority.
[dp_en]	Enables/disables change dp.
[qos_prec]	Specifies the resolution precedence.

Examples

The following example is setting internal priority 4 for dscp 4 on group 1.

```
dev0@qca>qos dscpmap set 1 4
internal_pcp(0):
internal_dei(0):
internal_pri(0): 4
internal_dscp(0):
internal_dp(0):
dscp_mask(0):
dscp_en(no):
pcp_en(no):
dei_en(no):
pri_en(no):
dp_en(no):
```

```
qos_prec(0):
operation done.
```

2.4.10 qos dscpmap get

Get the internal pcp, dscp, priority, dp mapping, change enable and precedence by dscp based on group.

qos dscpmap get <*group_id*> <*dscp*>

Syntax description

Parameter	Description
<group_id>	Specifies the group ID. The range is 0-1.
<dscp>	Specifies the dscp value. The range is 0-255.

Examples

The following example is getting the internal pcp/dscp/priority/dp mapping for dscp 4 on group 1.

```
dev0@qca>qos dscpmap get 1 4
[internal_pcp]:0x0 [internal_dei]:0x0 [internal_pri]:0x4
[internal_dscp]:0x0 [internal_dp]:0x0 [dscp_mask]:0x0
[dscp_en]:0x0 [pcp_en]:0x0 [dei_en]:0x0
[pri_en]:0x0 [dp_en]:0x0 [qos_prec]:0x0
operation done.
```

2.4.11 qos qscheduler set

Set the queue scheduler for level 0 queue or level 1 sp.

qos qscheduler set <*node_id*> <*level*> <*port_id*>

Syntax description

Parameter	Description
<node_id>	Specifies the queue ID of level 0 and sp ID of level 1.
<level>	Scheduler level 0 or 1.
<port_id>	Specifies the port. The range is 0-7.
[sp_id]	Specifies the sp ID. L0: 0-63 L1: 0-7
[e_pri]	Specifies the E path priority. The range is 0-7.
[c_pri]	Specifies the C path priority. The range is 0-7.
[c_drr_id]	Specifies the C path ID. L0:0-159 L1:0-35

Parameter	Description
[e_drr_id]	Specifies the E path ID. L0:0-159 L1:0-35
[e_drr_wt]	Specifies the E path drr weight. The range is 0-1023.
[c_drr_wt]	Specifies the C path drr weight. The range is 0-1023.
[c_drr_ut]	Specifies the C path drr unit. The range is 0-1.
[e_drr_ut]	Specifies the E path drr unit. The range is 0-1.
[drr_frame_mode]	Specifies the frame mode. The range is 0-2.

Examples

The following example is setting queue 200 for port 1 with sp 1, priority 1, ddr 9, and weight 3 on level 0.

```
dev0@qca>qos qscheduler set 200 0 1
sp_id(0): 1
e_pri(0): 1
c_pri(0): 1
c_drr_id(0): 9
e_drr_id(0): 9
e_drr_wt(0): 3
c_drr_wt(0): 3
c_drr_ut(0):
e_drr_ut(0):
drr_frame_mode(0):
operation done.
```

2.4.12   qos qscheduler get

Get the queue scheduler configureation for level 0 queue or level 1 sp.

qos qscheduler get <node_id> <level>

Syntax description

Parameter	Description
<node_id>	Specifies the queue ID of level 0 and sp ID of level 1.
<level>	Level 0 or 1

Examples

The following example is getting the scheduler configuration for level 0 queue 200.

```
dev0@qca>qos qscheduler get 200 0
[Port ID]:0x1
[sp_id]:0x1 [e_pri]:0x1 [c_pri]:0x1 [c_drr_id]:0x9 [e_drr_id]:0x9
[e_drr_wt]:0x3 [c_drr_wt]:0x3 [c_drr_unit]:0x0 [e_drr_unit]:0x0
```

```
[drr_frame_mode]:0x0
operation done.
```

2.4.13   qos ringqueue set

Set the queue bitmap for the EDMA Rx ring backpressure.

qos ringqueue set <*ring_id*>

Syntax description

Parameter	Description
<ring_id>	Specifies the edma ring ID. The range is 0-15.
[bmp]	Specifies the queue bitmap for the ring.

Examples

The following example is setting queue 1 to ring 0.

```
dev0@qca>qos ringqueue set 0
bmp(0): 1
bmp(0):
bmp(0):
bmp(0):
bmp(0):
bmp(0):
bmp(0):
bmp(0):
bmp(0):
bmp(0):
operation done.
```

2.4.14   qos ringqueue get

Get the queue bitmap for the EDMA Rx ring backpressure.

qos ringqueue get <*ring_id*>

Syntax description

Parameter	Description
<ring_id>	Specifies the edma ring ID. The range is 0-15.

Examples

The following example is getting the queue bitmap for ring 0.

```
dev0@qca>qos ringqueue get 0
[bmp0]:0x1
[bmp1]:0x0
```

```
[bmp2]:0x0
[bmp3]:0x0
[bmp4]:0x0
[bmp5]:0x0
[bmp6]:0x0
[bmp7]:0x0
[bmp8]:0x0
[bmp9]:0x0
operation done.
```

2.4.15   qos portqueues get

Get all queues belonging to one port.

qos portqueues get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting all queue bitmap for port 1.

```
dev0@qca>qos portqueues get 1
[bmp0]:0x0
[bmp1]:0x0
[bmp2]:0x0
[bmp3]:0x0
[bmp4]:0x0
[bmp5]:0x0
[bmp6]:0xff00
[bmp7]:0x0
[bmp8]:0xf0000
[bmp9]:0x0
operation done.
```

2.4.16   qos dequeue set

Set the dequeue control status.

qos dequeue set <*queue_id*> <*status*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-299.
<status>	Enables or disables dequeue.

Examples

The following example is setting dequeue enable for queue 100.

```
dev0@qca>qos dequeue set 100 enable
operation done.
```

2.4.17   qos dequeue get

Get the dequeue control status.

qos dequeue get <*queue_id*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-299.

Examples

The following example is getting the dequeue control status for queue 100.

```
dev0@qca>qos dequeue get 100
[dequeue en]:ENABLE
operation done.
```

2.4.18   qos ptModePri set

Set the QOS mode priority based on port.

qos ptModePri set <*port_id*> <*da|up|dscp| flow*> <*priority:0-3*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<da|up|dscp| flow>	QOS mode. The da mode is not supported.
<priority>	Specifies the priority value. The range is 0-3.

Examples

The following example is setting dscp priority 1 for port 1.

```
dev0@qca>qos ptModePri set 1 dscp 1
operation done.
```

2.4.19   qos ptModePri get

Get the QOS mode priority based on port.

qos ptModePri get <*port_id*> <*da|up|dscp|flow*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<da|up|dscp|flow>	QOS mode. The da mode is not supported.

Examples

The following example is getting the dscp priority value for port 1.

```
dev0@qca>qos ptModePri get 1 dscp
[Priority]:0x1
operation done.
```

2.4.20　qos portscheduler reset

Reset queue scheduler based on port to DTS configuration.

qos portscheduler reset *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is resetting queue scheduler configuration for port 1.

```
dev0@qca>qos portscheduler reset 1
operation done.
```

2.4.21　qos schedulerresource get

Get scheduler resource allocation based on port from DTS configuration.

qos schedulerresource get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting scheduler resource allocation for port 1.

```
dev0@qca>qos schedulerresource get 1
[ucastq_start]:0x90 [ucastq_num]:0x10 [mcastq_start]:0x110 [mcastq_num]:0x4
[l0sp_start]:0x24 [l0sp_num]:0x4 [l0cdrr_start]:0x30 [l0cdrr_num]:0x10
```

```
[l0edrr_start]:0x30 [l0edrr_num]:0x10 [l1sp_start]:0x1 [l1sp_num]:0x1
[l1cdrr_start]:0x8 [l1cdrr_num]:0x4 [l1edrr_start]:0x8 [l1edrr_num]:0x4
operation done.
```

2.5   Queue management

The queue management (QM) commands are designed for queue management configurartion. The QM commands include setting/getting static threshold, dynamic threshold, group buffer, unicast/ multicast queue generation for queue hash and queue class.

2.5.1   qm ucastqbase set

Set the QM unicast queue base ID.

qm unicastqbase set

Syntax description

Parameter	Description
[src_profile]	Specifies source profile ID. The range is 0-3.
[service_code_en]	Enables or disables the service code lookup queue.
[service_code]	Specifies the service code. The range is 0-255.
[cpu_code_en]	Enables or disables the CPU code lookup queue.
[cpu_code]	Specifies the CPU code. The range is 0-255.
[dst_port]	Specifies the destination port. The range is 0-255.
[queue_base]	Specifies the queue base ID. The range is 0-255.
[profile]	Specifies the output profile ID. The range is 0-15.

Examples

The following example is setting the queue base ID 110 for port 1.

```
dev0@qca>qm ucastqbase set
src_profile(0):
service_code_en(no):
service_code(0):
cpu_code en(no):
cpu_code(0):
dst_port(0): 1
queue_base:110
profile:0
operation done.
```

2.5.2   qm ucastqbase get

Get the QM unicast queue base ID.

qm unicastqbase get

Syntax description

Parameter	Description
[src_profile]	Specifies the source profile ID. The range is 0-3.
[service_code_en]	Enables or disables the service code lookup queue.
[service_code]	Specifies the service code. The range is 0-255.
[cpu_code_en]	Enables or disables the CPU code lookup queue.
[cpu_code]	Specifies the CPU code. The range is 0-255.
[dst_port]	Specifies the destination port. The range is 0-255.

Examples

The following example is getting the queue base ID for port 1.

```
dev0@qca>qm ucastqbase get
src_profile(0):
service_code_en(enable): disable
service_code(0):
cpu_code_en(enable): disable
cpu_code(0):
dst_port(0): 1
[queue_base:]0x6e
[profile]:0x0
operation done.
```

2.5.3   qm ucastpriclass set

Set the QM unicast queue priority class mapping.

qm ucastpriclass set <profile> <priority> <class>

Syntax description

Parameter	Description
<profile>	Specifies the profile ID. The range is 0-3.
<priority>	Specifies the internal priority. The range is 0-15.
<class>	Specifies the class for queue ID generation. The range is 0-15.

Examples

The following example is setting the unicast queue priority 1 map to class 1.

```
dev0@qca>qm ucastpriclass set 0 1 1
        operation done.
```

2.5.4   qm ucastpriclass get

Get the QM unicast queue priority class mapping.

qm ucastpriclass get <profile> <priority>

Syntax description

Parameter	Description
<profile>	Specifies the profile ID. The range is 0-3.
<priority>	Specifies the internal priority. The range is 0-15.

Examples

The following example is getting the unicast queue priority 1 mapping of class.

```
dev0@qca>qm ucastpriclass get 0 1
[Class]:0x1
operation done.
```

2.5.5   qm mcastpriclass set

Set the QM multicast queue priority class mapping.

qm mcastpriclass set *<port_id>* *<priority>* *<class>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<priority>	Specifies the internal priority. The range is 0-15.
<class>	Specifies the class for queue ID generation. The range is 0-15.

Examples

The following example is setting the multicast queue priority 1 map to class 1 for port 1.

```
dev0@qca>qm mcastpriclass set 1 1 1
operation done.
```

2.5.6   qm mcastpriclass get

Get the QM multicast queue priority class mapping.

qm mcastpriclass get *<port_id>* *<priority>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<priority>	Specifies the internal priority. The range is 0-15.

Examples

The following example is getting the multicast queue priority 1 mapping of class for port 1.

```
dev0@qca>qm mcastpriclass get 1 1
[Queue Class]:0x1
operation done.
```

2.5.7   qm queue flush

Flush one queue based on port.

qm queue flush *<port_id> <queue_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<queue_id>	Specifies the queue ID including unicast queue and multicast queue. The range is 0-299.

Examples

The following example is flushing queue 200 for port 1.

```
dev0@qca>qm queue flush 1 200
operation done.
```

2.5.8   qm ucasthash set

Set the QM unicast queue hash mapping.

qm ucasthash set *<profile> <rss_hash> <queue_hash>*

Syntax description

Parameter	Description
<profile>	Specifies the profile ID. The range is 0-3.
<rss_hash>	Specifies the packet rss hash value. The range is 0-15.
<queue_hash>	Specifies the queue hash for queue ID generation. The range is 0-255.

Examples

The following example is setting the unicast queue rss_hash 1 to queue hash 2.

```
dev0@qca>qm ucasthash set 0 1 2
operation done.
```

2.5.9   qm ucasthash get

Get the QM unicast queue hash mapping.

qm ucasthash get *<profile> <rss_hash>*

Syntax description

Parameter	Description
<profile>	Specifies the profile ID. The range is 0-3.
<rss_hash>	Specifies the packet rss hash value. The range is 0-15.

Examples

The following example is getting the unicast queue hash for rss_hash 1.

```
dev0@qca>qm ucasthash get 0 1
[Queue hash]:0x2
operation done.
```

2.5.10   qm ucastdflthash set

Set the QM unicast queue default hash.

qm ucastdflthash set <*queue_hash*>

Syntax description

Parameter	Description
<queue_hash>	Specifies the queue hash for queue ID generation. The range is 0-255.

Examples

The following example is setting the unicast queue default hash to 2.

```
dev0@qca>qm ucastdflthash set 2
operation done.
```

2.5.11   qm ucastdflthash get

Get the QM unicast queue default hash.

qm ucastdflthash get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the unicast queue default hash value.

```
dev0@qca>qm ucastdflthash get
[ucast dflt hash]:0x2
operation done.
```

2.5.12 qm mcastcpucode set

Set the QM multicast queue cpucode class mapping.

qm mcastcpucode set *<cpu_code>* *<class>*

Syntax description

Parameter	Description
<cpu_code>	Specifies the CPU code. The range is 0-255.
<class>	Specifies the queue class for queue ID generation. The range is 0-15.

Examples

The following example is setting the multicast queue cpucode 1 map to class 2.

```
dev0@qca>qm mcastcpucode set 1 2
operation done.
```

2.5.13 qm mcastcpucode get

Get the QM multicast queue cpucode class mapping.

qm mcastcpucode get *<cpu_code>*

Syntax description

Parameter	Description
<cpu_code>	Specifies the CPU code. The range is 0-255.

Examples

The following example is getting the multicast queue class map for cpucode 1.

```
dev0@qca>qm mcastcpucode get 1
[Queue Class]:0x2
operation done
```

2.5.14 qm acctrl set

Set the QM admission control status based on group or queue.

qm acctrl set

Syntax description

Parameter	Description
[obj_type]	0 – queue 1 – group
[obj_id]	Specifies the queue ID (0-299) or group ID (0-3).

Parameter	Description
[ac_en]	Enables or disables the admission control.
[ac_fc_en]	Enables or disables the force admission control for flowcontrol enable.

Examples

The following example is setting the admission control enable queue ID 100.

```
dev0@qca>qm acctrl set
obj_type(0):
obj_id(0): 100
ac_en(yes):
ac_fc_en(yes):
operation done.
```

2.5.15 qm acctrl get

Get the QM admission control status based on group or queue.

qm acctrl get

Syntax description

Parameter	Description
[obj_type]	0 – queue 1 – group
[obj_id]	Specifies the queue ID (0-299) or group ID (0-3).

Examples

The following example is getting the admission control status for queue ID 100.

```
dev0@qca>qm acctrl get
obj_type(0):
obj_id(0): 100
[ac_en]:0x1 [ac_fc_en]:0x1
operation done.
```

2.5.16 qm acprebuffer set

Set the QM admission control prealloc buffer number based on group or queue.

qm acprebuffer set

Syntax description

Parameter	Description
[obj_type]	0 – queue 1 – group
[obj_id]	Specifies the queue ID (0-299) or group ID (0-3).
[num]	Specifies the prealloc buffer number. The range is 0-2k.

Examples

The following example is setting the admission control prealloc buffer 100 for queue ID 100.

```
dev0@qca>qm acprebuffer set
obj_type(0):
obj_id(0): 100
num(0):100
operation done.
```

2.5.17 qm acprebuffer get

Get the QM admission control prealloc buffer number based on group or queue.

qm acprebuffer get

Syntax description

Parameter	Description
[obj_type]	0 – queue 1 – group
[obj_id]	Specifies the queue ID (0-299) or group ID (0-3).

Examples

The following example is getting the admission control prealloc buffer for queue ID 100.

```
dev0@qca>qm acprebuffer get
obj_type(0):
obj_id(0): 100
[num]:0x0064
operation done.
```

2.5.18 qm acqgroup set

Set the QM queue and group mapping.

qm acqgroup set <*queue_id*> <*group_id*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-255.
<group_id>	Specifies the group ID. The range is 0-3.

Examples

The following example is setting the queue ID 100 mapping to group 1.

```
dev0@qca>qm acqgroup set 100 1
operation done.
```

2.5.19 qm acqgroup get

Get the QM queue and group mapping.

qm acqgroup get <*queue_id*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-255.

Examples

The following example is getting the group ID of queue ID 100.

```
dev0@qca>qm acqgroup get 100
[group_id]:0x1
operation done.
```

2.5.20 qm acstaticthresh set

Set the QM queue static threshold based on group or queue.

qm acstaticthesh set

Syntax description

Parameter	Description
[obj_type]	0 – queue 1 – group
[obj_id]	Specifies the queue ID (0-299) or group ID (0-3).
[color_en]	Enables or disables the color aware.
[wred_en]	Enables or disables the wred.
[green_max]	Specifies the max threshold for green. The range is 0-2k.
[green_min_off]	Specifies the offset for geen min threshold. The range is 0-2k.
[yel_max_off]	Specifies the offset for yellow max threshold. The range is 0-2k.

Parameter	Description
[yel_min_off]	Specifies the offset for yellow min threshold. The range is 0-2k.
[red_max_off]	Specifies the offset for red max threshold. The range is 0-2k.
[red_min_off]	Specifies the offset for red min threshold. The range is 0-2k.
[green_resume_off]	Specifies the offset for green resume. The range is 0-2k.
[yel_ resume_off]	Specifies the offset for yellow resume. The range is 0-2k.
[red_resume_off]	Specifies the offset for red resume. The range is 0-2k.

Examples

The following example is setting the queue ID 100 static threshold, green max to 30, and green resume offset 20.

```
Dev0@qca>qm acstaticthresh set
obj_type(0):
obj_id(0): 100
color_en(no):
wred_en(no):
green_max(0): 30
green_min off(0): 10
yel_max_off(0): 10
yel_min_off(0): 15
red_max_off(0): 10
red_min_off(0): 15
green_resume_off(0): 20
yel_resume_off(0): 20
red_resume_off(0): 20
operation done.
```

2.5.21   qm acstaticthresh get

Get the QM queue static threshold based on group or queue.

qm acstaticthesh get

Syntax description

Parameter	Description
[obj_type]	0 – queue 1 – group
[obj_id]	Specifies the queue ID (0-299) or group ID (0-3).

Examples

The following example is getting the queue ID 100 static threshold.

```
Dev0@qca>qm acstaticthresh get
obj_type(0):
```

```
obj_id(0): 100
[color_en]:0x1 [wred_en]:0x1 [green_max]:0x1e
[green_min_off]:0xa [yel_max_off]:0xa [yel_min_off]:0xf [red_max_off]:0xa
[red_min_off]:0xf
[green_resume_off]:0x14 [yel_resume_off]:0x14 [red_resume_off]:0x14
operation done.
```

2.5.22   qm acdynamicthresh set

Set the QM queue dynamic threshold based on queue.

qm acdynamicthesh set <*queue_id*>

Syntax description

Parameter	Description
<*queue_id*>	Specifies the queue ID. The range is 0-255.
[color_en]	Enables or disables the color aware.
[wred_en]	Enables or disables the wred.
[shared_weight]	Specifies the shared weight in the group. The range is 0-7.
[green_min_off]	Specifies the offset for geen min threshold. The range is 0-2k.
[yel_max_off]	Specifies the offset for yellow max threshold. The range is 0-2k.
[yel_min_off]	Specifies the offset for yellow min threshold. The range is 0-2k.
[red_max_off]	Specifies the offset for red max threshold. The range is 0-2k.
[red_min_off]	Specifies the offset for red min threshold. The range is 0-2k.
[green_resume_off]	Specifies the offset for green resume. The range is 0-2k.
[yel_resume_off]	Specifies the offset for yellow resume. The range is 0-2k.
[red_resume_off]	Specifies the offset for red resume. The range is 0-2k.
[ceiling]	Specifies the ceiling for max threshold. The range is 0-2k.

Examples

The following example is setting the queue ID 150 dynamic threshold, shared weight 1, and green resume offset 20.

```
dev0@qca>qm acdynamicthresh set 150
color_en(no):
wred_en(no):
shared_weight(0): 1
green_min_off(0): 10
yel_max_off(0): 10
yel_min_off(0): 15
red_max_off(0): 10
red_min_off(0): 15
green_resume_off(0): 20
yel_resume_off(0): 20
```

```
red_resume_off(0): 20
ceiling(0): 40
operation done.
```

2.5.23 qm acdynamicthresh get

Get the QM queue dynamic threshold based on queue ID.

qm acdynamicthesh get <*queue_id*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-255.

Examples

The following example is getting the queue ID 150 dynamic threshold.

```
dev0@qca>qm acdynamicthresh get 150
[color_en]:0x1 [wred_en]:0x1 [shared_weight]:0x1
[green_min_off]:0xa [yel_max_off]:0xa [yel_min_off]:0xf [red_max_off]:0xa
[red_min_off]:0xf
[green_resume_off]:0x14 [yel_resume_off]:0x14 [red_resume_off]:0x14
[ceiling]:0x28
operation done.
```

2.5.24 qm acgroupbuff set

Set the QM group buffer number based on group ID.

qm acgroupbuff set <*group_id*>

Syntax description

Parameter	Description
<group_id>	Specifies the group ID. The range is 0-3.
[prealloc_buffer]	Specifies the prealloc buffer number. The range is 0-2k.
[total_buffer]	Specifies the total buffer number. The range is 0-2k.

Examples

The following example is setting the group 1 prealloc buffer 0 and total buffer 50.

```
dev0@qca>qm acgroupbuff set 1
prealloc_buffer(0):
total_buffer(0): 50
operation done.
```

2.5.25   qm acgroupbuff get

Get the QM group buffer number based on group ID.

qm acgroupbuff get <*group_id*>

Syntax description

Parameter	Description
<group_id>	Specifies the group ID.

Examples

The following example is getting the group 1 prealloc buffer and total buffer num.

```
dev0@qca>qm acgroupbuff get 1
[prealloc_buffer]:0x0 [total_buffer]:0x0
operation done.
```

2.5.26   qm cntctrl set

Set the QM counter enable or disable.

qm cntctrl set <*status*>

Syntax description

Parameter	Description
<status>	Enables or disables the queue counter.

Examples

The following example is enabling the queue counter.

```
dev0@qca>qm cntctrl set enable
operation done.
```

2.5.27   qm cntctrl get

Get the qm counter status.

qm cntctrl get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the queue counter status.

```
dev0@qca>qm cntctrl get
[queue cnt en]:ENABLE
operation done.
```

2.5.28   qm cnt get

Get the QM counter for one queue.

qm cnt get <*queue_id*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-299.

Examples

The following example is getting the queue counter of queue 100.

```
dev0@qca>qm cnt get 100
[tx_packets]:0x0 [tx_bytes]:0x0 [pending_buff_num]:0x0
[green_probability_drop_packets]:0x0
[green_probability_drop_bytes]:0x0
[yellow_probability_drop_packets]:0x0
[yellow_probability_drop_bytes]:0x0
[red_probability_drop_packets]:0x0
[red_probability_drop_bytes]:0x0
[green_force_drop_packets]:0x0
[green_force_drop_bytes]:0x0
[yellow_force_drop_packets]:0x0
[yellow_force_drop_bytes]:0x0
[red_force_drop_packets]:0x0
[red_force_drop_bytes]:0x0
operation done.
```

2.5.29   qm enqueue set

Set the QM enqueue control status.

qm enqueue set <*queue_id*> <*enable*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-299.
<enable>	Enables or disables the enqueue.

Examples

The following example is setting the enqueue enable for queue 100.

```
dev0@qca>qm enqueue set 100 enable
operation done.
```

2.5.30 qm enqueue get

Get the QM enqueue control status.

qm enqueue get <*queue_id*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-299.

Examples

The following example is getting the enqueue control status for queue 100.

```
dev0@qca>qm enqueue get 100
[enqueue en]:ENABLE
operation done.
```

2.5.31 qm srcprofile set

Set the QM source profile based on the VP port.

qm srcprofile set <*port_id*> <*src_profile*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-255.
<src_profile>	Specifies the source profile. The range is 0-3.

Examples

The following example is setting the source profile 1 for port 1.

```
dev0@qca>qm srcprofile set 1 1
operation done.
```

2.5.32 qm srcprofile get

Get the QM source profile based on the VP port.

qm srcprofile get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-255.

Examples

The following example is getting the source profile for port 1.

```
dev0@qca>qm srcprofile get 1
[Source profile]:0x1
operation done.
```

2.6   Shaper

The shaper module commands performs queue based, flow based and port based three level shaper function and provide the check current shaper token number to each level shaper.

2.6.1   shaper porttimeslot set

Set the shaper port based timeslot value.

shaper porttimeslot set *<value>*

Syntax description

Parameter	Description
<value>	The clock number of each refreshment round. Its unit is 8 clock. Its value ranges from 0x8 to 0xfff. The default value is 0x8.

Examples

The following example is setting the shaper port based timeslot.

```
dev0@qca>shaper porttimeslot set 0x8
operation done.
```

2.6.2   shaper porttimeslot get

Get the shaper port based timeslot value. Its unit is 8 clock.

shaper porttimeslot get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the shaper port based timeslot.

```
dev0@qca>shaper porttimeslot get
[Time Slot]:0x8
operation done.
```

2.6.3 shaper flowtimeslot set

Set the shaper flow based timeslot value.

shaper flowtimeslot set <*value*>

Syntax description

Parameter	Description
<value>	The clock number of each refreshment round. Its unit is 8 clock. Its value ranges from 0x40 to 0xfff. The default value is 0x40.

Examples

The following example is setting the shaper flow based timeslot.

```
dev0@qca>shaper flowtimeslot set 0x40
operation done.
```

2.6.4 shaper flowtimeslot get

Get the shaper flow based timeslot value. Its unit is 8 clock.

shaper flowtimeslot get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the shaper flow based timeslot.

```
dev0@qca>shaper flowtimeslot get
[Time Slot]:0x40
operation done.
```

2.6.5 shaper queuetimeslot set

Set the shaper queue based timeslot value.

shaper queuetimeslot set <*value*>

Syntax description

Parameter	Description
<value>	The clock number of each refreshment round. Its unit is 8 clock. Its value ranges from 0x12c to 0xfff. The default value is 0x12c.

Examples

The following example is setting the shaper queue based timeslot.

```
dev0@qca>shaper queuetimeslot set 0x12c
operation done.
```

2.6.6   shaper queuetimeslot get

Get the shaper queue based timeslot value. Its unit is 8 clock.

shaper queuetimeslot get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the shaper queue based timeslot.

```
dev0@qca>shaper queuetimeslot get
[Time Slot]:0x12c
operation done.
```

2.6.7   shaper portshaper set

Set the port based shaper entry.

shaper portshaper set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
[meter_unit]	Specifies shaper unit. The value is 0-1. 0 – byte based 1 – packet based
[cshaper_enable]	Enables or disables the cshaper entry.
[cir]	Specifies the shaper committed information rate. Its unit is kbps or pps. Its granularity is 64 kbps. The range is 0 or 64 kbps – 10 Gbps when meter_unit is byte based. The range is 0 or 6 – 14881000 pps when meter_unit is packet_based.

Parameter	Description
[cbs]	Specifies the shaper committed burst size. Its unit is byte or packet. The range is 0 – 1 Gbyte when meter_unit is byte based. The range is 0 – 8.3 M packet when meter_unit is packet based.
[shaper_frame_mode]	Specifies the shaper frame mode. The range is 0-2. 0 – IPG + Preamble + Frame + CRC 1 – Frame + CRC 2 – L3 (after ethernet type excluding CRC)

Examples

The following example is setting the shaper port based entry.

```
dev0@qca>shaper portshaper set 1
meter_unit(0-1): 0
cshaper_enable(no): yes
cir(0): 100000
cbs(0): 100000
shaper_frame_mode(0-2): 1
operation done.
```

2.6.8   shaper portshaper get

Get the port based shaper entry value.

shaper portshaper get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the port based shaper entry.

```
dev0@qca>shaper portshaper get 1
[shaper_meter_unit]:0x0
[shaper_cshaper_enable]:yes
[shaper_cir]:0x18696
[shaper_cbs]:0x186a0
[shaper_frame_mode]:0x1
operation done.
```

2.6.9   shaper flowshaper set

Set the flow based shaper entry.

shaper flowshaper set <*flow_id*>

Syntax description

Parameter	Description
<flow_id>	Specifies the flow ID. The range is 0-63.
[couple_en]	Enables or disables the policer token bucket couple calculation. yes|no
[meter_unit]	Specifies shaper unit. The value is 0-1. 0 – byte based 1 – packet based
[cshaper_enable]	Enables or disables the cshaper entry. yes|no
[cir]	Specifies the shaper committed information rate. Its unit is kbps or pps. Its granularity is 64 kbps. The range is 0 or 64 kbps – 10 Gbps when meter_unit is byte based. The range is 0 or 6 – 14881000 pps when meter_unit is packet_based.
[cbs]	Specifies the shaper committed burst size. Its unit is byte or packet. The range is 0 – 1 Gbyte when meter_unit is byte based. The range is 0 – 8.3 M packet when meter_unit is packet based.
[eshaper_enable]	Enables or disables the eshaper entry. yes|no
[eir]	Specifies the shaper exceed information rate. Its unit is kbps or pps. Its granularity is 64 kbps. The range is 0 or 64 kbps – 10 Gbps when meter_unit is byte based. The range is 0 or 6 – 14881000 pps when meter_unit is packet_based.
[ebs]	Specifies the shaper exceed burst size. Its unit is byte or packet. The range is 0 – 1 Gbyte when meter_unit is byte based. The range is 0 – 8.3 M packet when meter_unit is packet based.
[shaper_frame_mode]	Specifies the shaper frame mode. The range is 0-2. 0 – IPG + Preamble + Frame + CRC. 1 – Frame + CRC. 2 – L3 (after ethernet type excluding CRC).

Examples

The following example is setting the shaper flow based entry.

```
dev0@qca>shaper flowshaper set 1
couple_enable(no): yes
meter_unit(0-1): 1
cshaper_enable(no): yes
cir(0): 100000
cbs(0): 100000
eshaper_enable(no): yes
eir(0): 100000
ebs(0): 100000
shaper_frame_mode(0-2):
operation done.
```

2.6.10   shaper flowshaper get

Get the flow based shaper entry value.

shaper flowshaper get <*flow_id*>

Syntax description

Parameter	Description
<flow_id>	Specifies the flow ID. The range is 0-63.

Examples

The following example is getting the flow based shaper entry.

```
dev0@qca>shaper flowshaper get 1
[shaper_couple_enable]:yes
[shaper_meter_unit]:0x1
[shaper_cshaper_enable]:yes
[shaper_cir]:0x18697
[shaper_cbs]:0x186a0
[shaper_eshaper_enable]:yes
[shaper_eir]:0x18697
[shaper_ebs]:0x186a0
[shaper_frame_mode]:0x1
operation done
```

2.6.11   shaper queueshaper set

Set the queue based shaper entry.

shaper queueshaper set <*queue_id*>

Syntax description

Parameter	Description
<queue_id>	Specifies the queue ID. The range is 0-299.
[couple_en]	Enables or disables the policer token bucket couple calculation. yes|no
[meter_unit]	Specifies the shaper unit. The value is 0-1. 0 – byte based 1 – packet based
[cshaper_enable]	Enables or disables the cshaper entry. yes|no
[cir]	Specifies the shaper committed information rate. Its unit is kbps or pps. Its granularity is 64kbps. The range is 0 or 64 kbps – 10 Gbps when meter_unit is byte based. The range is 0 or 6 – 14881000 pps when meter_unit is packet based.

Parameter	Description
[cbs]	Specifies the shaper committed burst size. Its unit is byte or packet.
	The range is 0 – 1 Gbyte when meter_unit is byte based.
	The range is 0 – 8.3 M packet when meter_unit is packet based.
[eshaper_enable]	Enables or disables the eshaper entry. yes|no
[eir]	Specifies the shaper exceed information rate. Its unit is kbps or pps. Its granularity is 64 kbps.
	The range is 0 or 64 kbps – 10 Gbps when meter_unit is byte based.
	The range is 0 or 6 – 14881000 pps when meter_unit is packet based.
[ebs]	Specifies the shaper exceed burst size. Its unit is byte or packet.
	The range is 0 – 1 Gbyte when meter_unit is byte based.
	The range is 0 – 8.3 M packet when meter_unit is packet based.
[shaper_frame_mode]	Specifies the shaper frame mode. The range is 0-2.
	0 – IPG + Preamble + Frame + CRC.
	1 – Frame + CRC.
	2 – L3 (after ethernet type excluding CRC).

Examples

The following example is setting the shaper queue based entry.

```
dev0@qca>shaper queueshaper set 1
couple_enable(no): yes
meter_unit(0-1): 1
cshaper_enable(no): yes
cir(0): 100000
cbs(0): 100000
eshaper_enable(no): yes
eir(0): 100000
ebs(0): 100000
shaper_frame_mode(0-2): 1
operation done.
```

2.6.12   shaper queueshaper get

Get the queue based shaper entry value.

shaper queueshaper get <*queue_id*>

Syntax description

Parameter	Description
<*queue_id*>	Specifies the flow ID. The range is 0-299.

Examples

The following example is getting the queue based shaper entry.

```
dev0@qca>shaper queueshaper get 1
[shaper_couple_enable]:yes
[shaper_meter_unit]:0x1
[shaper_cshaper_enable]:yes
[shaper_cir]:0x18691
[shaper_cbs]:0x186a0
[shaper_eshaper_enable]:yes
[shaper_eir]:0x18691
[shaper_ebs]:0x186a0
[shaper_frame_mode]:0x1
operation done.
```

2.6.13   shaper porttoken set

Set the port based shaper token value.

shaper porttoken set <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-7.
[ctoken_negative_enable]	Specifies the current ctoken sign is negative or not. yes|no
[ctoken_number]	Specifies the ctoken number. The range is 0-0x3FFFFFFF. Its unit is token.

Examples

The following example is setting the shaper porttoken entry.

```
dev0@qca>shaper porttoken set 1
ctoken_negative_enable(no): no
ctoken_number(0-0x3FFFFFFF): 0x3fffffff
operation done.
```

2.6.14   shaper porttoken get

Get the port based shaper token value.

shaper porttoken get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the port based token entry.

```
dev0@qca>shaper porttoken get 1
[shaper_ctoken_negative_enable]:no
[shaper_ctoken_number]:0x3fffffff
operation done.
```

2.6.15 shaper flowtoken set

Set the flow based shaper token value.

shaper flowtoken set <*flow_id*>

Syntax description

Parameter	Description
<*flow_id*>	Specifies the port ID. The range is 0-63.
[ctoken_negative_enable]	Specifies the current ctoken sign is negative or not. yes|no
[ctoken_number]	Specifies the ctoken number. The range is 0-0x3FFFFFFF. Its unit is token.
[etoken_negative_enable]	Specifies the current etoken sign is negative or not. yes|no
[etoken_number]	Specifies the ctoken number. The range is 0-0x3FFFFFFF. Its unit is token.

Examples

The following example is setting the shaper flowtoken entry.

```
dev0@qca>shaper flowtoken set 1
ctoken_negative_enable(no): no
ctoken_number(0-0x3FFFFFFF): 0x3fffffff
etoken_negative_enable(no): no
etoken_number(0-0x3FFFFFFF): 0x3fffffff
operation done.
```

2.6.16 shaper flowtoken get

Get the flow based shaper token value.

shaper flowtoken get <*flow_id*>

Syntax description

Parameter	Description
<*flow_id*>	Specifies the flow ID. The range is 0-63.

Examples

The following example is getting the flow based token entry.

```
dev0@qca>shaper flowtoken get 1
[shaper_ctoken_negative_enable]:no
[shaper_ctoken_number]:0x3fffffff
[shaper_etoken_negative_enable]:no
[shaper_etoken_number]:0x3fffffff
operation done.
```

2.6.17   shaper queuetoken set

Set the queue based shaper token value.

shaper queuetoken set <*queue_id*>

Syntax description

Parameter	Description
<*queue_id*>	Specifies the port ID. The range is 0-299.
[ctoken_negative_enable]	Specifies the current ctoken sign is negative or not. yes|no
[ctoken_number]	Specifies the ctoken number. The range is 0-0x3FFFFFFF. Its unit is token.
[etoken_negative_enable]	Specifies the current etoken sign is negative or not. yes|no
[etoken_number]	Specifies the ctoken number. The range is 0-0x3FFFFFFF. Its unit is token.

Examples

The following example is setting the shaper queuetoken entry.

```
dev0@qca>shaper queuetoken set 1
ctoken_negative_enable(no): no
ctoken_number(0-0x3FFFFFFF): 0x3fffffff
etoken_negative_enable(no): no
etoken_number(0-0x3FFFFFFF): 0x3fffffff
operation done.
```

2.6.18   shaper queuetoken get

Get the queue based shaper token value.

shaper queuetoken get <*queue_id*>

Syntax description

Parameter	Description
<*queue_id*>	Specifies the queue ID. The range is 0-299.

Examples

The following example is getting the flow based token entry.

```
dev0@qca>shaper queuetoken get 1
[shaper_ctoken_negative_enable]:no
[shaper_ctoken_number]:0x3fffffff
[shaper_etoken_negative_enable]:no
[shaper_etoken_number]:0x3fffffff
operation done.
```

2.6.19   shaper ipgcompensation set

Set the shaper ipg compensation value.

shaper ipgcompensation set <*value*>

Syntax description

Parameter	Description
<*value*>	Specifies the ipg compensation value. The range is 0-0x1f. Its unit is byte. The default value is 0x14 bytes.

Examples

The following example is setting the shaper ipg compensation.

```
dev0@qca>shaper ipgcompensation set 0x14
operation done.
```

2.6.20   shaper ipgcompensation get

Get the shaper ipg compensation value.

shaper ipgcompensation get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the shaper ipg compensation.

```
dev0@qca>shaper ipgcompensation get
[IPG and Preamble]:0x14
operation done.
```

2.7 Buffer management

Buffer management (BM) commands are designed for buffer management configuration. BM commands include setting/getting static threshold, dynamic threshold, port reserved buffer, group buffer, and port counter.

2.7.1 bm ctrl set

Set the BM control status based on port.

bm ctrl set <*port_id*> <*status*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-14.
<*status*>	Enables or disables the buffer management control.

Examples

The following example is setting the BM control enable for port 1.

```
dev0@qca>bm ctrl set 1 enable
operation done.
```

2.7.2 bm ctrl get

Get the BM control status based on port.

bm ctrl get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-14.

Examples

The following example is getting the BM control status for port 1.

```
dev0@qca>bm ctrl get 1
[bm ctrl]:ENABLE
operation done.
```

2.7.3 bm portgroupmap set

Set the BM port and group mapping.

bm ctrl set <*port_id*> <*group_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-14.
<group_id>	Specifies the group ID. The range is 0-3.

Examples

The following example is setting the BM port 1 to group 1.

```
dev0@qca>bm portgroupmap set 1 1
operation done.
```

2.7.4   bm portgroupmap get

Get the BM port and group mapping.

bm portgroupmap get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-14.

Examples

The following example is getting the BM group ID for port 1.

```
dev0@qca>bm portgroupmap get 1
[group]:0x1
operation done.
```

2.7.5   bm groupbuff set

Set the BM group buffer number by group ID.

bm groupbuff set *<group_id>* *<buff_num>*

Syntax description

Parameter	Description
<group_id>	Specifies the group ID. The range is 0-3.
<buff_num>	Specifies the buffer number. The range is 0-2k.

Examples

The following example is setting the BM group 1 buffer 30.

```
dev0@qca>bm groupbuff set 1 30
operation done.
```

2.7.6 bm groupbuff get

Get the BM group buffer number by group ID.

bm groupbuff get <*group_id*>

Syntax description

Parameter	Description
<group_id>	Specifies the group ID. The range is 0-3.

Examples

The following example is getting the BM group 1 buffer number.

```
dev0@qca>bm groupbuff get 1
[buff num]:0x001e
operation done.
```

2.7.7 bm portrsvbuff set

Set the BM port reserved buffer number based on port.

bm portrsvbuff set <*port_id*> <*prealloc_num*> <*react_num*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-14.
<prealloc_num>	Specifies the prealloc buff number. The range is 0-2k.
<react_num>	Specifies the react buff number. The range is 0-2k.

Examples

The following example is setting the BM prealloc buff 10 react buff num 10 for port 1.

```
dev0@qca>bm portrsvbuff set 1 10 10
operation done.
```

2.7.8 bm portrsvbuff get

Get the BM port reserved buffer number based on port.

bm portrsvbuff get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-14.

Examples

The following example is getting the BM prealloc buff and react buff num for port 1.

```
dev0@qca>bm portrsvbuff get 1
[prealloc_num]:0x000a[react_num]:0x000a
operation done.
```

2.7.9   **bm portsthresh set**

Set the BM port static threshold based on port.

bm portsthresh set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-14.
[max_thresh]	Specifies the static maximum threshold. The range is 0-2k.
[resume_off]	Specifies the resume offset. The range is 0-2k.

Examples

The following example is setting the BM max threshold 30 resume offset 5 for port 1.

```
dev0@qca>bm portsthresh set 1
max_thresh(0): 30
resume_off(0): 5
operation done.
```

2.7.10   **bm portsthresh get**

Get the BM port static threshold based on port.

bm portsthresh get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-14.

Examples

The following example is getting the BM max threshold and resume offset for port 1.

```
dev0@qca>bm portsthresh get 1
[max_thresh]:0x1e [resume_off]:0x5
operation done.
```

2.7.11   **bm portdthresh set**

Set the BM port dynamic threshold based on port.

bm portdthresh set <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-2k.
[weight]	Specifies the weight in the shared group. The range is 0-7.
[shared_ceiling]	Specifies the maximum shared buffer. The range is 0-2k.
[resume_off]	Specifies the resume offset. The range is 0-2k.
[resume_min_thresh]	Specifies the minumum threshold for resume. The range is 0-2k.

Examples

The following example is setting the BM weight 1 for port 1, ceiling number 30.

```
dev0@qca>bm portdthresh set 1
weight(0): 1
shared_ceiling(0): 30
resume_off(0): 5
resume_min_thresh(0): 5
operation done.
```

2.7.12   bm portdthresh get

Get the BM port dynamic threshold based on port.

bm portdthresh get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-14.

Examples

The following example is getting the BM dynamic threshold for port 1.

```
dev0@qca>bm portdthresh get 1
[weight]:0x1 [shared_ceiling]:0x1e [resume_off]:0x5 [resume_min_thresh]:0x5
operation done.
```

2.7.13   bm portcounter get

Get the BM port counters.

bm portcounter get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-14.

Examples

The following example is getting the BM counters for port 1.

```
dev0@qca>bm portcounter get 1
[drop_byte_counter]:0x40 [shared_ drop_packet_counter]:0x1
[fc_drop_byte_counter]:0x40 [fc_drop_packet_counter]:0x1
[used_counter]:0x0 [react_counter]:0x0
operation done.
```

2.8   Management control packet

The ctrlpkt commands can be used to trap management packets. Packets can be trapped under these conditions: Ethernet Type, RFDB and Protocol type.

2.8.1   ctrlpkt ethernettype set

Set an Ethernet type based on profile ID.

ctrlpkt ethernettype set *<profile_id>* *<ethernettype>*

Syntax description

Parameter	Description
<profile_id>	Specifies the profile ID that is the Ethernet type entry index. The appprofile add command uses a bitmap based on this profile ID.
<ethernettype>	Specifies the Ethernet type.

Examples

The following example is setting an Ethernet type based on profile ID.

```
dev0@qca>ctrlpkt ethertype set 0 0x0800
operation done.
```

2.8.2   ctrlpkt ethernettype get

Get an Ethernet type based on profile ID.

ctrlpkt ethernettype get *<profile_id>*

Syntax description

Parameter	Description
<profile_id>	Specifies the profile ID that is the Ethernet type entry index.

Examples

The following example is getting an Ethernet type based on profile ID.

```
dev0@qca>ctrlpkt ethertype get 0
[Ethernet Type]:0x800
operation done.
```

2.8.3   ctrlpkt rfdb set

Set a rfdb MAC address based on profile ID.

ctrlpkt rfdb set *<profile_id>* *<rfdb_macaddr>*

Syntax description

Parameter	Description
<profile_id>	Specifies the profile ID that is the rfdb entry index. The appprofile add command uses a bitmap based on this profile ID.
<rfdb_macaddr>	Specifies the rfdb MAC address.

Examples

The following example is setting a rfdb MAC address based on profile ID.

```
dev0@qca>ctrlpkt rfdb set 0 00-00-00-00-00-11
operation done.
```

2.8.4   ctrlpkt rfdb get

Get a rfdb MAC address based on profile ID.

ctrlpkt rfdb get *<profile_id>*

Syntax description

Parameter	Description
<profile_id>	Specifies the profile ID that is the rfdb entry index.

Examples

The following example is getting a rfdb MAC address based on profile ID.

```
dev0@qca>ctrlpkt rfdb get 0
Address00-00-00-00-00-11
operation done.
```

2.8.5   ctrlpkt appprofile add

Add a control packet profile to forward, drop, cpycpu, rdtcpu and bypass protocol control packets based on port bitmap, Ethernet type bitmap, rfdb bitmap and protocol type.

ctrlpkt appprofile add

Syntax description

Parameter	Description
[port_bitmap]	Specifies the port ID bitmap for this entry.
[ethtype_profile_bitmap]	Specifies the Ethernet type profile ID bitmap for this entry.
[rfdb_profile_bitmap]	Specifies the rfdb profile ID bitmap for this entry.
[eapol_en]	Enables or disables the matching eapol protocol for this entry.
[pppoe_en]	Enables or disables the matching pppoe protocol for this entry.
[igmp_en]	Enables or disables the matching igmp protocol for this entry.
[arp_request_en]	Enables or disables the matching arp request protocol for this entry.
[arp_response_en]	Enables or disables the matching arp response protocol for this entry.
[dhcp4_en]	Enables or disables the matching dhcpv4 protocol for this entry.
[dhcp6_en]	Enables or disables the matching dhcpv6 protocol for this entry.
[mld_en]	Enables or disables the matching mld protocol for this entry.
[ip6ns_en]	Enables or disables the matching IPv6 ICMPv6 Neighbor Solicitation protocol for this entry.
[ip6na_en]	Enables or disables the matching IPv6 ICMPv6 Neighbor Advertisement protocol for this entry.
[ctrlpkt_profile_action]	Specifies the action of this entry. The action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[sourceguard_bypass]	Specifies the source guard bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[l2filter_bypass]	Specifies the layer2 filter bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[ingress_stp_bypass]	Specifies the ingress stp bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[ingress_vlan_filter_bypass]	Specifies the ingress vlan filter bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.

Examples

The following example is adding an app profile entry.

```
dev0@qca>ctrlpkt appprofile add
port_bitmap (0): 0xf
ethtype_profile_bitmap (0): 0x3
rfdb_profile_bitmap (0):
eapol_en(no):
pppoe_en(no):
igmp_en(no):
arp_request_en(no):
arp_response_en(no):
dhcp4_en(no):
```

```
dhcp6_en(no):
mld_en(no):
ip6ns_en(no):
ip6na_en(no):
ctrlpkt_profile_action(forward): drop
sourceguard_bypass(no):
l2filter_bypass(no):
ingress_stp_bypass(no):
ingress_vlan_filter_bypass(no):
operation done.
```

2.8.6   ctrlpkt appprofile del

Delete a control packet profile entry.

ctrlpkt appprofile del

Syntax description

Parameter	Description
[port_bitmap]	Specifies the port ID bitmap for this entry.
[ethtype_profile_bitmap]	Specifies the ethernet type profile ID bitmap for this entry.
[rfdb_profile_bitmap]	Specifies the rfdb profile ID bitmap for this entry.
[eapol_en]	Enables or disables the matching eapol protocol for this entry.
[pppoe_en]	Enables or disables the matching pppoe protocol for this entry.
[igmp_en]	Enables or disables the matching igmp protocol for this entry.
[arp_request_en]	Enables or disables the matching arp request protocol for this entry.
[arp_response_en]	Enables or disables the matching arp response protocol for this entry.
[dhcp4_en]	Enables or disables the matching dhcpv4 protocol for this entry.
[dhcp6_en]	Enables or disables the matching dhcpv6 protocol for this entry.
[mld_en]	Enables or disables the matching mld protocol for this entry.
[ip6ns_en]	Enables or disables the matching IPv6 ICMPv6 Neighbor Solicitation protocol for this entry.
[ip6na_en]	Enables or disables the matching IPv6 ICMPv6 Neighbor Advertisement protocol for this entry.
[ctrlpkt_profile_action]	Specifies the action of this entry. The action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[sourceguard_bypass]	Specifies the source guard bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[l2filter_bypass]	Specifies the layer2 filter bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.

Parameter	Description
[ingress_stp_bypass]	Specifies the ingress stp bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[ingress_vlan_filter_bypass]	Specifies the ingress vlan filter bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.

Examples

The following example is deleting an app profile entry.

```
dev0@qca>ctrlpkt appprofile del
portbitmap(0): 0xf
ethernettype_bitmap(0): 0x3
rfdbbitmap(0):
eapol_en(no):
pppoe_en(no):
igmp_en(no):
arp_request_en(no):
arp_response_en(no):
dhcp4_en(no):
dhcp6_en(no):
mld_en(no):
ip6ns_en(no):
ip6na_en(no):
ctrlpkt_profile_action(forward): drop
sourceguard_bypass(no):
l2filter_bypass(no):
ingress_stp_bypass(no):
ingress_vlan_filter_bypass(no):
operation done.
```

2.8.7   ctrlpkt appprofile getfirst

Get the control packet profile first entry.

ctrlpkt appprofile getfirst

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the app profile first entry.

```
dev0@qca>ctrlpkt appprofile getfirst
[portbitmap]:0x3 [ethernettype_bitmap]:0x1 [rfdbbitmap]:0x1
[eapol_en]:DISABLE [pppoe_en]:DISABLE [igmp_en]:DISABLE
```

```
[arp_request_en]:DISABLE [arp_response_en]:DISABLE
[dhcp4_en]:DISABLE [dhcp6_en]:DISABLE [mld_en]:DISABLE [ip6ns_en]:DISABLE
[ip6na_en]:DISABLE
[ctrlpkt_profile_action]:FORWARD [sourceguard_bypass]:DISABLE
[l2filter_bypass]:DISABLE [ingress_stp_bypass]:DISABLE
[ingress_vlan_filter_bypass]:DISABLE
operation done.
```

2.8.8   ctrlpkt appprofile getnext

Get the control packet profile next entry.

ctrlpkt appprofile getnext

Syntax description

Parameter	Description
[port_bitmap]	Specifies the port ID bitmap for this entry.
[ethtype_profile_bitmap]	Specifies the ethernet type profile ID bitmap for this entry.
[rfdb_profile_bitmap]	Specifies the rfdb profile ID bitmap for this entry.
[eapol_en]	Enables or disables the matching eapol protocol for this entry.
[pppoe_en]	Enables or disables the matching pppoe protocol for this entry.
[igmp_en]	Enables or disables the matching igmp protocol for this entry.
[arp_request_en]	Enables or disables the matching arp request protocol for this entry.
[arp_response_en]	Enables or disables the matching arp response protocol for this entry.
[dhcp4_en]	Enables or disables the matching dhcpv4 protocol for this entry.
[dhcp6_en]	Enables or disables the matching dhcpv6 protocol for this entry.
[mld_en]	Enables or disables the matching mld protocol for this entry.
[ip6ns_en]	Enables or disables the matching IPv6 ICMPv6 Neighbor Solicitation protocol for this entry.
[ip6na_en]	Enables or disables the matching IPv6 ICMPv6 Neighbor Advertisement protocol for this entry.
[ctrlpkt_profile_action]	Specifies the action of this entry. The action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[sourceguard_bypass]	Specifies the source guard bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[l2filter_bypass]	Specifies the layer2 filter bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[ingress_stp_bypass]	Specifies the ingress stp bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.
[ingress_vlan_filter_bypass]	Specifies the ingress vlan filter bypass status of this entry. The bypass action will be actived when port bitmap, ethtype profile bitmap, rfdb profile bitmap and enabled protocol type are matched.

Examples

The following example is getting app profile next entry.

```
dev0@qca>ctrlpkt appprofile getnext
portbitmap(0): 0xf
ethernettype_bitmap(0): 0x3
rfdbbitmap(0):
eapol_en(no):
pppoe_en(no):
igmp_en(no):
arp_request_en(no):
arp_response_en(no):
dhcp4_en(no):
dhcp6_en(no):
mld_en(no):
ip6ns_en(no):
ip6na_en(no):
ctrlpkt_profile_action(forward): drop
sourceguard_bypass(no):
l2filter_bypass(no):
ingress_stp_bypass(no):
ingress_vlan_filter_bypass(no):
[portbitmap]:0x3 [ethernettype_bitmap]:0x1 [rfdbbitmap]:0x1
[eapol_en]:DISABLE [pppoe_en]:DISABLE [igmp_en]:DISABLE
[arp_request_en]:DISABLE [arp_response_en]:DISABLE
[dhcp4_en]:DISABLE [dhcp6_en]:DISABLE [mld_en]:DISABLE [ip6ns_en]:DISABLE
[ip6na_en]:DISABLE
[ctrlpkt_profile_action]:FORWARD [sourceguard_bypass]:DISABLE
[l2filter_bypass]:DISABLE [ingress_stp_bypass]:DISABLE
[ingress_vlan_filter_bypass]:DISABLE
operation done.
```

2.8.9   ctrlpkt appprofile show

Show the whole control packet profile entries.

ctrlpkt appprofile getfirst

Syntax description

Parameter	Description
None	–

Examples

The following example is showing the whole app profile entries.

```
dev0@qca>ctrlpkt appprofile show
[portbitmap]:0x3 [ethernettype_bitmap]:0x1 [rfdbbitmap]:0x1
```

```
[eapol_en]:DISABLE [pppoe_en]:DISABLE [igmp_en]:DISABLE
[arp_request_en]:DISABLE [arp_response_en]:DISABLE
[dhcp4_en]:DISABLE [dhcp6_en]:DISABLE [mld_en]:DISABLE [ip6ns_en]:DISABLE
[ip6na_en]:DISABLE
[ctrlpkt_profile_action]:FORWARD [sourceguard_bypass]:DISABLE
[l2filter_bypass]:DISABLE [ingress_stp_bypass]:DISABLE
[ingress_vlan_filter_bypass]:DISABLE
operation done.
```

2.9   STP

When the SSDK driver is running with the STP protocol, it supports configuring the port state that is required in the STP protocol. This STP packet needs to bypass the port state check when the port is in disable, blocking, listening and learning state.

2.9.1   stp portstate set

Set a port STP state. The <*st_id*> is always 0.

stp portstate set <*st_id*> <*port_id*> <*disable|block|listen|learn|forward*>

Syntax description

Parameter	Description
<*st_id*>	Always 0.
<*port_id*>	Specifies the port ID. The range is 0-7.
<*disable|block|listen|learn|forward*>	Specifies the STP state.

Examples

The following example is setting a port STP state.

```
dev0@qca>stp portstate set 0 1 forward
operation done.
```

2.9.2   stp portstate get

Get a port STP state based on port ID. The <*st_id*> always is 0.

stp portstate get <*st_id*> <*port_id*>

Syntax description

Parameter	Description
<*st_id*>	Always 0.
<*port_id*>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting a port STP state based on port ID.

```
dev0@qca>stp portState get 0 1
[Port State]:FORWARD
operation done.
```

2.10   TRUNK

The SSDK driver supports configuring the trunk group and trunk members. There are up to 2 trunk groups supported in hardware. There are maximum 4 ports per trunk group.

2.10.1   trunk group set

Set the trunk group status and member info based on trunk ID.

trunk group set <*trunk_id*> <*disable|enable*> <*port_bitmap*>

Syntax description

Parameter	Description
<trunk_id>	Specifies the trunk ID of the trunk group. IPQ60xx supports two trunk ID, so the trunk ID value is 0 or 1.
<disable|enable>	Specifies the trunk ID status.
<port_bitmap>	Specifies the trunk ID port bitmap.

Examples

The following example is setting the trunk group status and member info based on trunk ID.

```
dev0@qca>trunk group set 0 enable 0x6
operation done.
```

2.10.2   trunk group get

Get the trunk group status and member info based on trunk ID.

trunk group get <*trunk_id*>

Syntax description

Parameter	Description
<trunk_id>	Specifies the trunk ID of the trunk group. IPQ60xx supports two trunk ID, so the trunk ID value is 0 or 1.

Examples

The following example is getting the trunk group status and member info based on trunk ID.

```
dev0@qca>trunk group get 0
[Status]:ENABLE[Member Port Bitmap]:0x6
operation done.
```

2.10.3 trunk hashmode set

Set the trunk hash mode.

trunk hashmode set <*hash_mode*>

Syntax description

Parameter	Description
<*hash_mode*>	Specifies the hash mode of trunk. The hash_mode is a bitmap:
	bit0: Enable key dest MAC address
	bit1: Enable key source MAC address
	bit2: Enable key dest IP address
	bit3: Enable key source IP address
	bit4: Enable key source port
	bit5: Enable key l4 source port
	bit6: Enable key l4 dest port
	bit7: Enable key UDF0
	bit8: Enable key UDF1
	bit9: Enable key UDF2
	bit10: Enable key UDF3

Examples

The following example is setting the trunk hash mode.

```
dev0@qca>trunk hashmode set 0x1
operation done.
```

2.10.4 trunk hashmode get

Get the trunk hash mode.

trunk hashmode get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the trunk hash mode.

```
dev0@qca>trunk hashmode get
[Hash Mode]:0x1
operation done.
```

2.10.5   trunk failover set

Set the trunk failover status.

trunk failover set <*enable|disable*>

Syntax description

Parameter	Description
<*enable|disable*>	Enables or disables the failover status.

Examples

The following example is setting the trunk failover status.

```
dev0@qca>trunk failover set disable
operation done.
```

2.10.6   trunk failover get

Get the trunk failover status.

trunk failover get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the trunk failover status.

```
dev0@qca>trunk failover get
[failover_en]:DISABLE
operation done.
```

2.11   MIRROR

The mirror function is usually used to debug the traffic issue. Basically, it supports enabling port based ingress/egress based mirror. All traffic except the CRC error frame can be mirrored.

2.11.1 mirror analypt set

Set the mirror analysis port. Both ingress and egress tranffic on the analyzed port are mirrored to this analysis port.

mirror analypt set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is setting the mirror analysis port.

```
dev0@qca>mirror analypt set 1
operation done.
```

2.11.2 mirror analypt get

Get the mirror analysis port.

mirror analypt get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the mirror analysis port.

```
dev0@qca>mirror analypt get
[Port ID]:0x1
operation done.
```

2.11.3 mirror ptingress set

Set the port ingress mirror status.

When enabling port ingress mirror status on this port, this port ingress traffic is mirrored to the analysis port.

mirror ptingress set *<port_id>* *<enable|disable>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<enable|disable>	Enables or disables this port ingress mirror.

Examples

The following example is setting the port ingress mirror status.

```
dev0@qca>mirror ptingress set 2 enable
operation done.
```

2.11.4   mirror ptingress get

Get the port ingress mirror status.

mirror ptingress get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the port ingress mirror status.

```
dev0@qca>mirror ptingress get 2
[Ingeress mirror]:ENABLE
operation done.
```

2.11.5   mirror ptegress set

Set the port egress mirror status.

When enabling port egress mirror status on this port, this port egress traffic is mirrored to the analysis port.

mirror ptegress set <*port_id*> <*enable*|*disable*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<enable|*disable>*	Enables or disables this port egress mirror.

Examples

The following example is setting the port egress mirror status.

```
dev0@qca>mirror ptegress set 2 enable
operation done.
```

2.11.6   mirror ptegress get

Get the port egress mirror status.

mirror ptegress get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the port egress mirror status.

```
dev0@qca>mirror ptegress get 2
[egeress mirror]:ENABLE
operation done.
```

2.11.7   mirror analycfg set

Set analysis configuration, including ingress or egress analysis port and its queue priority.

Only one ingress analysis port and one egress analysis port are supported. These two ports can be different.

When enabling port ingress or egress mirror status, their traffic is mirrored to the analysis port.

mirror analycfg set <*both|ingress|egress*>

Syntax description

Parameter	Description
<both|ingress|egress>	Specifies the direction of the analysis port and its queue priority.
[analysis_port]	Specifies the analysis port. The range is 0-7.
[analysis_priority]	Specifies the queue priority.

Examples

The following example is setting the analysis configuration.

```
dev0@qca>mirror analycfg set ingress
analysis_port(0): 1
analysis_priority(0): 1
operation done.
```

2.11.8   mirror analycfg get

Get the analysis configuration.

mirror analycfg get <*both|ingress|egress*>

Syntax description

Parameter	Description
<both|ingress|egress>	Specifies the direction of the analysis port and its queue priority.

Examples

The following example is getting the analysis configuration.

```
dev0@qca>mirror analycfg get ingress
[analysis_port]:0x1
[analysis_priority]:0x1
operation done.
```

2.12   PPPoE

Basically, there are two parts functions for PPPoE offload, inserting PPPoE header and removing PPPoE header.

To remove PPPoE header, a hardware PPPoE session table is used to support identifying and terminating the PPPoE session.

To insert PPPoE header, an egress L3 table is used to indicate if it is required to add PPPoE header with specified session ID to a packet before forwarding it.

2.12.1   misc extendpppoe add

Add a PPPoE session entry.

misc extendpppoe add

Syntax description

Parameter	Description
[entryid]	Keep 0. It returns the actual entry ID.
[sessionid]	Specifies the PPPoE session ID.
[multi_session]	Enables or disables the matching multicast.
[uni_session]	Enables or disables the matching unicast.
[vrf_id]	Not supported in IPQ60xx.
[port]	Specifies the port bitmap.
[l3if_index]	Specifies the related L3 interface index.
[l3if_index_valid]	Enables or disables the matching l3 interface index.
[smacaddr]	Specifies the source MAC address.
[smacaddr_valid]	Enables or disables the matching source MAC address.

Examples

The following example is adding a PPPoE session entry.

```
dev0@qca>misc extendpppoe add
entryid(0):
sessionid(0): 1
multi_session(no):
uni_session(no): y
vrf_id(0):
```

```
port(null): 0xf
l3if_index (0): 0
l3if_index_valid (no): yes
smacaddr: 00-00-00-00-00-11
smacaddr_valid (no): no
[EntryID]:0x0  [SessionID]:0x1  [MultiSession]:NO  [UniSession]:YES
[Vrf_ID]:0x0
[Port]:0   [l3if_index]:0x0  [l3if_index_valid]:YES
[smacaddr]:00-00-00-00-00-11  [smacaddr_valid]:NO
operation done.
```

2.12.2 misc extendpppoe get

Get a PPPoE session entry.

misc extendpppoe get

Syntax description

Parameter	Description
[entryid]	Keep 0. It returns the actual entry ID.
[sessionid]	Specifies the PPPoE session ID.
[multi_session]	Enables or disables the matching multicast.
[uni_session]	Enables or disables the matching unicast.
[vrf_id]	Not supported in IPQ60xx.
[port]	Specifies the port bitmap.
[l3if_index]	Specifies the related L3 interface index.
[l3if_index_valid]	Enables or disables the matching L3 interface index.
[smacaddr]	Specifies the source MAC address.
[smacaddr_valid]	Enables or disables the matching source MAC address.

Examples

The following example is getting a PPPoE session entry.

```
dev0@qca>misc extendpppoe get
entryid(0):
sessionid(0): 1
multi_session(no):
uni_session(no): y
vrf_id(0):
port(null): 0xf
l3if_index (0): 0
l3if_index_valid (no): yes
smacaddr: 00-00-00-00-00-11
smacaddr_valid (no): no
[EntryID]:0x0  [SessionID]:0x1  [MultiSession]:NO  [UniSession]:YES
```

```
[Vrf_ID]:0x0
[Port]:0   [l3if_index]:0x0  [l3if_index_valid]:YES
[smacaddr]:00-00-00-00-00-11  [smacaddr_valid]:NO
operation done.
```

2.12.3 misc extendpppoe del

Delete a PPPoE session entry.

misc extendpppoe del

Syntax description

Parameter	Description
[entryid]	Keep 0. It returns the actual entry ID.
[sessionid]	Specifies the PPPoE session ID.
[multi_session]	Enables or disables the matching multicast.
[uni_session]	Enables or disables the matching unicast.
[vrf_id]	Not supported in IPQ60xx.
[port]	Specifies the port bitmap.
[l3if_index]	Specifies the related L3 interface index.
[l3if_index_valid]	Enables or disables the matching L3 interface index.
[smacaddr]	Specifies the source MAC address.
[smacaddr_valid]	Enables or disables the matching source MAC address.

Examples

The following example is deleting a PPPoE session entry.

```
dev0@qca>misc extendpppoe del
entryid(0):
sessionid(0): 1
multi_session(no):
uni_session(no): y
vrf_id(0):
port(null): 0xf
l3if_index (0): 0
l3if_index_valid (no): yes
smacaddr: 00-00-00-00-00-11
smacaddr_valid (no): no
operation done.
```

2.12.4 misc pppoeen set

Enable or disable the L3 PPPoE offloading on a specific L3 interface.

misc pppoeen set <l3if_index> <enable|disable>

Syntax description

Parameter	Description
<l3if_index>	Specifies the L3 interface index.
<enable|disable>	Enables or disables the L3 interface PPPoE status.

Examples

The following example is setting an L3 interface PPPoE status.

```
dev0@qca>misc pppoeen set 0 disable
operation done.
```

2.12.5 misc pppoeen get

Get an L3 interface PPPoE status.

misc pppoeen get <l3if_index>

Syntax description

Parameter	Description
<l3if_index>	Specifies the L3 interface index.

Examples

The following example is getting an L3 interface PPPoE status.

```
dev0@qca>misc pppoeen get 0
[Enable]:DISABLE
operation done.
```

2.13 Policer

The policer function limits the amount of bandwidth available to a specific traffic flow or prevents a traffic type from using excessive bandwidth and system resources.

The policer module commands perform port based and ACL based rate limit, QoS remarking, and check various policer debugging counters statistics.

2.13.1 policer timeslot set

Set the policer timeslot value.

policer timeslot set <*value*>

Syntax description

Parameter	Description
<value>	The clock number of each refreshment round. Its unit is 8 clock. Its value ranges from 0x200 to 0x400. The default value is 0x258.

Examples

The following example is setting the policer timeslot.

```
dev0@qca>policer timeslot set 0x258
operation done.
```

2.13.2   policer timeslot get

Get the policer timeslot value. Its unit is 8 clock.

policer timeslot get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the policer timeslot.

```
dev0@qca>policer timeslot get
[Time Slot]:0x258
operation done.
```

2.13.3   policer portentry set

Set the port based policer entry.

policer portentry set <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-7.
[meter_enable]	Enables or disables the policer entry. yes|no
[couple_enable]	Enables or disables the policer token bucket couple calculation. yes|no
[color_mode]	Specifies the policer color mode. The range is 0-1. 0 – color bind 1 – color aware
[frame_type]	Specifies the policer traffic frame type bitmap. The range is 0x1-0x1f. 0x1 – unicast 0x2 – unkown unicast 0x4 – multicast 0x8 – unknown multicast 0x10 – broadcast

Parameter	Description
[meter_mode]	Specifies the policer mode. The range is 0-1. 0 – RFC2698 1 – RFC2697, RFC4115, MEF10-1
[meter_unit]	Specifies the policer unit. The value is 0-1. 0 – byte based 1 – packet based
[cir]	Specifies the policer committed information rate. Its unit is kbps or pps. Its granularity is 64 kbps. The range is 0 or 64 kbps–10 Gbps when meter_unit is byte based. The range is 0 or 6–14881000 pps when meter_unit is packet_based.
[cbs]	Specifies the policer committed burst size. Its unit is byte or packet. The range is 0–4.29 Gbyte when meter_unit is byte based. The range is 0–33.5 M packet when meter_unit is packet based.
[eir]	Specifies the policer exceed information rate. Its unit is kbps or pps. Its granularity is 64 kbps. The range is 0 or 64 kbps–10 Gbps when meter_unit is byte based. The range is 0 or 6–14881000 pps when meter_unit is packet_based.
[ebs]	Specifies the policer exceed burst size. Its unit is byte or packet. The range is 0–4.29 Gbyte when meter_unit is byte based. The range is 0–33.5 M packet when meter_unit is packet based.
[yellow_priority_remark]	Specifies the yellow traffic internal priority filed remark enable/disable.
[yellow_drop_ precedence_remark]	Specifies the yellow traffic drop precedence field remark enable/disable.
[yellow_pcp_remark]	Specifies the yellow traffic pcp field remark enable/disable.
[yellow_dei_remark]	Specifies the yellow traffic dei field remark enable/disable.
[yellow_priority]	Specifies the yellow traffic internal prioirity field remark value. The range is 0-15.
[yellow_drop_precedence]	Specifies the yellow traffic drop precedence field remark value. The range is 0-3.
[yellow_pcp]	Specifies the yellow traffic pcp field remark value. The range is 0-7.
[yellow_dei]	Specifies the yellow traffic dei field remark value. The range is 0-1.
[red_action]	Specifies the red traffic action. drop|forward
[red_priority_remark]	Specifies the red traffic internal priority field remark enable/disable.
[red_drop_precedence_remark]	Specifies the red traffic drop precedence field remark enable/disable.
[red_pcp_remark]	Specifies the red traffic pcp field remark enable/disable.

Parameter	Description
[red_dei_remark]	Specifies the red traffic dei field remark enable/disable.
[red_priority]	Specifies the red traffic internal prioirity field remark value. The range is 0-15.
[red_drop_precedence]	Specifies the red traffic drop precedence field remark value. The range is 0-3.
[red_pcp]	Specifies the red traffic pcp field remark value. The range is 0-7.
[red_dei]	Specifies the red traffic dei field remark value, the range is 0-1.

Examples

The following example is setting the port based policer entry.

```
dev0@qca>policer portentry set 1
meter_enable(no): yes
couple_enable(no): yes
color_mode(0-1): 0
frame_type(0-0x1f): 0x1f
meter_mode(0-1): 1
meter_unit(0-1): 0
cir(0): 10000
cbs(0): 10000
eir(0): 20000
ebs(0): 10000
yellow_priority_remark(no): yes
yellow_drop_priority_remark(no): yes
yellow_pcp_remark(no): yes
yellow_dei_remark(no): yes
yellow_priority(0-15): 13
yellow_drop_priority(0-3): 3
yellow_pcp(0-7): 7
yellow_dei(0-1): 1
red_action(drop): drop
red_priority_remark(no): yes
red_drop_priority_remark(no): yes
red_pcp_remark(no): yes
red_dei_remark(no): yes
red_priority(0-15): 1
red_drop_priority(0-3): 1
red_pcp(0-7): 1
red_dei(0-1): 1
operation done.
```

2.13.4   policer portentry get

Get the port based policer entry value.

policer portentry get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the port based policer entry.

```
dev0@qca>policer portentry get 1
[meter_enable]:yes
[couple_enable]:yes
[color_mode]:0x0
[frame_type]:0x1f
[meter_mode]:0x1
[meter_unit]:byte_based
[cir]:0x0000270f  [cbs]:0x00002710
[eir]:0x00004e1f  [ebs]:0x00002710
[yellow_priority_remark]:yes
[yellow_drop_priority_remark]:yes
[yellow_pcp_remark]:yes
[yellow_dei_remark]:yes
[yellow_priority]:0xd
[yellow_drop_priority]:0x3
[yellow_pcp]:0x7
[yellow_dei]:0x1
[red_action]:drop
[red_priority_remark]:yes
[red_drop_priority_remark]:yes
[red_pcp_remark]:yes
[red_dei_remark]:yes
[red_priority]:0x1
[red_drop_priority]:0x1
[red_pcp]:0x1
[red_dei]:0x1
operation done.
```

2.13.5   policer aclentry set

Set the ACL based policer entry.

policer aclentry set *<index>*

Syntax description

Parameter	Description
<index>	Specifies the ACL policer entry index. The range is 0-511.
[meter_enable]	Enables or disables the policer entry. yes|no

Parameter	Description
[couple_enable]	Enables or disables the policer token bucket couple calculation. yes|no
[color_mode]	Specifies the policer color mode. The range is 0-1. 0 – color bind 1 – color aware
[meter_mode]	Specifies the policer mode. The range is 0-1. 0 – RFC2698 1 – RFC2697, RFC4115, MEF10-1
[meter_unit]	Specifies the policer unit. The value is 0-1. 0 – byte based 1 – packet based
[cir]	Specifies the policer committed information rate. Its unit is kbps or pps. Its granularity is 64 kbps. The range is 0 or 64 kbps–10 Gbps when meter_unit is byte based. The range is 0 or 6–14881000 pps when meter_unit is packet_based.
[cbs]	Specifies the policer committed burst size. Its unit is byte or packet. The range is 0–4.29 Gbyte when meter_unit is byte based. The range is 0–33.5 M packet when meter_unit is packet based.
[eir]	Specifies the policer exceed information rate. Its unit is kbps or pps. Its granularity is 64 kbps. The range is 0 or 64 kbps–10Gbps when meter_unit is byte based. The range is 0 or 6–14881000 pps when meter_unit is packet_based.
[ebs]	Specifies the policer exceed burst size. Its unit is byte or packet. The range is 0–4.29 Gbyte when meter_unit is byte based. The range is 0–33.5 M packet when meter_unit is packet based.
[yellow_priority_remark]	Specifies the yellow traffic internal priority field remark enable/disable.
[yellow_drop_precedence_remark]	Specifies the yellow traffic drop precedence field remark enable/disable.
[yellow_pcp_remark]	Specifies the yellow traffic pcp field remark enable/disable.
[yellow_dei_remark]	Specifies the yellow traffic dei field remark enable/disable.
[yellow_priority]	Specifies the yellow traffic internal prioirity field remark value. The range is 0-15.
[yellow_drop_precedence]	Specifies the yellow traffic drop precedence field remark value. The range is 0-3.
[yellow_pcp]	Specifies the yellow traffic pcp field remark value. The range is 0-7.
[yellow_dei]	Specifies the yellow traffic dei field remark value. The range is 0-1.
[red_action]	Specifies the red traffic action. drop|forward.
[red_priority_remark]	Specifies the red traffic internal priority field remark enable/disable.
[red_drop_precedence_remark]	Specifies the red traffic drop precedence field remark enable/disable.
[red_pcp_remark]	Specifies the red traffic pcp field remark enable/disable.
[red_dei_remark]	Specifies the red traffic dei field remark enable/disable.

Parameter	Description
[red_priority]	Specifies the red traffic internal prioirity field remark value. The range is 0-15.
[red_drop_precedence]	Specifies the red traffic drop precedence field remark value. The range is 0-3.
[red_pcp]	Specifies the red traffic pcp field remark value. The range is 0-7.
[red_dei]	Specifies the red traffic dei field remark value. The range is 0-1.

Examples

The following example is setting the ACL based policer entry.

```
dev0@qca>policer aclentry set 10
meter_enable(no): yes
couple_enable(no): yes
color_mode(0-1): 0
meter_mode(0-1): 0
meter_unit(0-1): 1
cir(0): 10000
cbs(0): 10000
eir(0): 20000
ebs(0): 10000
yellow_priority_remark(no): yes
yellow_drop_priority_remark(no): yes
yellow_pcp_remark(no): yes
yellow_dei_remark(no): yes
yellow_priority(0-15): 1
yellow_drop_priority(0-3): 1
yellow_pcp(0-7): 1
yellow_dei(0-1): 1
red_action(drop): drop
red_priority_remark(no): no
red_drop_priority_remark(no): no
red_pcp_remark(no): no
red_dei_remark(no): no
red_priority(0-15): 0
red_drop_priority(0-3): 0
red_pcp(0-7): 0
red_dei(0-1): 0
operation done.
```

2.13.6   policer acltentry get

Get the ACL based policer entry value.

policer aclentry get <*index*>

Syntax description

Parameter	Description
<index>	Specifies the ACL policer entry index. The range is 0-511.

Examples

The following example is getting the ACL based policer entry.

```
dev0@qca>policer aclentry get 10
[meter_enable]:yes
[couple_enable]:yes
[color_mode]:0x0
[meter_mode]:0x0
[meter_unit]:frame_based
[cir]:0x0000270f   [cbs]:0x0000270f
[eir]:0x00004e1f   [ebs]:0x0000270f
[yellow_priority_remark]:yes
[yellow_drop_priority_remark]:yes
[yellow_pcp_remark]:yes
[yellow_dei_remark]:yes
[yellow_priority]:0x1
[yellow_drop_priority]:0x1
[yellow_pcp]:0x1
[yellow_dei]:0x1
[red_action]:drop
[red_priority_remark]:no
[red_drop_priority_remark]:no
[red_pcp_remark]:no
[red_dei_remark]:no
[red_priority]:0x0
[red_drop_priority]:0x0
[red_pcp]:0x0
[red_dei]:0x0
operation done.
```

2.13.7   policer fcscompensation set

Set the policer fcs compensation value.

policer fcscompensation set *<port_id>* *<value>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.
<value>	Specifies the fcs compensation value. The range is 0-0x1f. Its unit is byte. The default value is 0x4 bytes.

Examples

The following example is setting the policer fcs compensation.

```
dev0@qca>policer fcscompensation set 1 4
operation done.
```

2.13.8   policer fcscompensation get

Get the policer fcs compensation value.

policer fcscompensation get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the policer fcs compensation.

```
dev0@qca>policer fcscompensation get 1
[Number]:0x4
operation done.
```

2.13.9   policer portcounter get

Get the port based policer counter value.

policer portcounter get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 0-7.

Examples

The following example is getting the port based policer counter statistics.

```
dev0@qca>policer portcounter get 1
[green_packet_counter]:0x0
[green_byte_counter]:0x0
[yellow_packet_counter]:0x0
[yellow_byte_counter]:0x0
[red_packet_counter]:0x0
[red_byte_counter]:0x0
operation done.
```

2.13.10   policer aclcounter get

Get the ACL based policer counter value.

policer aclcounter get *<index>*

Syntax description

Parameter	Description
<index>	Specifies the ACL policer entry index. The range is 0-511.

Examples

The following example is getting the ACL based policer counter statistics.

```
dev0@qca>policer aclcounter get 1
[green_packet_counter]:0x0
[green_byte_counter]:0x0
[yellow_packet_counter]:0x0
[yellow_byte_counter]:0x0
[red_packet_counter]:0x0
[red_byte_counter]:0x0
operation done.
```

2.13.11   policer globalcounter get

Get the policer global counter value.

policer globalcounter get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the policer global counter statistics.

```
dev0@qca>policer globalcounter get
[policer_drop_packet_counter]:0x0
[policer_drop_byte_counter]:0x0
[policer_forward_packet_counter]:0x0
[policer_forward_byte_counter]:0x0
[policer_bypass_packet_counter]:0x0
[policer_bypass_byte_counter]:0x0
operation done.
```

2.13.12   policer bypass set

Set the policer bypass enable.

policer bypass set <*frame_type*> <*enable*>

Syntax description

Parameter	Description
<frame_type>	Specifies supported frame type.
<enable|disable>	Enables or disables bypass.

Examples

The following example is setting the policer bypass enable status.

```
dev0@qca>policer bypass set 0 enable
operation done.
```

2.13.13   policer bypass get

Get the policer bypass enable status.

policer bypass get <*frame_type*>

Syntax description

Parameter	Description
<frame_type>	Specifies supported frame type.

Examples

The following example is getting the policer bypass enable status.

```
dev0@qca>policer bypass get 0
[Status]:ENABLE
operation done.
```

2.14   MIB

The MIB commands are designed for MIB statistics information. The MIB commands include getting the statistics of GMAC or XGMAC port, enabling or disabling the MIB engine and getting the status of the MIB engine, flushing the counters of a particular port, enabling or disabling the CPU clear-on-read mode and getting its status. Each GMAC counter has 32 bit and XGMAC counter has 64 bit. If GMAC CPU keep is enabled, the counter is easy to overflow, so GMAC CPU keep is disabled by default. The command **mib counter get** can get the increasing counter regardless of CPU keep.

2.14.1   mib statistics get

Get the MIB statistics on a specified GMAC port. The counters clear on read if CPU keep is disabled.

mib statistics get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the MIB statistics of port 1.

```
dev0@qca>mib statistics get 1
[MIB info]
RxBroad     <0x00000024>  RxPause     <0x00000000>  RxMulti     <0x00000057>
RxFcsErr    <0x00000000>  RxAlignErr  <0x00000000>  RxRunt      <0x00000000>
RxFragment  <0x00000000>  Rx64Byte    <0x00000037>  Rx128Byte   <0x00000033>
Rx256Byte   <0x0000001c>  Rx512Byte   <0x00000000>  Rx1024Byte  <0x00000000>
Rx1518Byte  <0x00000000>  RxMaxByte   <0x00000000>  RxTooLong   <0x00000000>
RxGoodByte  <0x00003669>  RxGoodByte1 <0x00000000>  RxBadByte   <0x00000000>
RxBadByte1  <0x00000000>  RxOverFlow  <0x00000000>  Filtered    <0x00000000>
TxBroad     <0x00000001>  TxPause     <0x00000000>  TxMulti     <0x00000000>
TxUnderRun  <0x00000000>  Tx64Byte    <0x00000002>  Tx128Byte   <0x00000009>
Tx256Byte   <0x00000000>  Tx512Byte   <0x00000000>  Tx1024Byte  <0x00000000>
Tx1518Byte  <0x00000000>  TxMaxByte   <0x00000000>  TxOverSize  <0x00000000>
TxByte      <0x00000416>  TxByte1     <0x00000000>  TxCollision <0x00000000>
TxAbortCol  <0x00000000>  TxMultiCol  <0x00000000>  TxSingleCol <0x00000000>
TxExcDefer  <0x00000000>  TxDefer     <0x00000000>  TxLateCol   <0x00000000>
RxUniCast   <0x0000000b>  TxUniCast   <0x0000000a>
operation done
```

2.14.2 mib status set

Enable or disable the MIB engine.

mib status set <*enable*|*disable*>

Syntax description

Parameter	Description
<*enable*|*disable*>	Enables or disables the MIB engine.

Examples

The following example is enabling the MIB engine.

```
dev0@qca>mib status set enable
operation done.
```

2.14.3 mib status get

Get the MIB engine status.

mib status get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the MIB engine status.

```
dev0@qca>mib status get
[MIB status]:ENABLE
operation done.
```

2.14.4   mib counters flush

Flush the MIB statistics on a specified port including GMAC port and XGMAC port.

mib counters flush <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is flushing the MIB statistics of port 1.

```
dev0@qca>mib counters flush 1
operation done.
```

2.14.5   mib counter get

Get the MIB statistics on a specified GMAC port. The counters do not clear on read no matter if CPU keep is enabled or disabled.

mib counter get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the MIB statistics of port 1.

```
dev0@qca>mib counter get 1
[MIB Counter]
RxBroad     <0x00000000>  RxPause     <0x00000000>  RxMulti     <0x00000000>
```

```
RxFcsErr     <0x00000000>  RxAlignErr  <0x00000000>  RxRunt     <0x00000000>
RxFragment   <0x00000000>  Rx64Byte    <0x00000000>  Rx128Byte  <0x00000000>
Rx256Byte    <0x00000000>  Rx512Byte   <0x00000000>  Rx1024Byte <0x00000000>
Rx1518Byte   <0x00000000>  RxMaxByte   <0x00000000>  RxTooLong  <0x00000000>
RxGoodByte   <0x00000000>  RxBadByte   <0x00000000>  RxOverFlow <0x00000000>
Filtered     <0x00000000>  TxBroad     <0x00000000>  TxPause    <0x00000000>
TxMulti      <0x00000000>  TxUnderRun  <0x00000000>  Tx64Byte   <0x00000000>
Tx128Byte    <0x00000000>  Tx256Byte   <0x00000000>  Tx512Byte  <0x00000000>
Tx1024Byte   <0x00000000>  Tx1518Byte  <0x00000000>  TxMaxByte  <0x00000000>
TxOverSize   <0x00000000>  TxByte      <0x00000000>  TxCollision <0x00000000>
TxAbortCol   <0x00000000>  TxMultiCol  <0x00000000>  TxSingleCol <0x00000000>
TxExcDefer   <0x00000000>  TxDefer     <0x00000000>  TxLateCol  <0x00000000>
RxUniCast    <0x00000000>  TxUniCast   <0x00000000>  RxJmFcsErr <0x00000000>
RxJmAligErr  <0x00000000>
operation done.
```

2.14.6   mib cpuKeep set

Enable or disable the CPU clear-on-read mode.

mib cpuKeep set <*enable|disable*>

Syntax description

Parameter	Description
<*enable|disable*>	Enables or disables the CPU clear-on-read mode.

Examples

The following example is enabling the CPU clear-on-read mode.

```
dev0@qca>mib cpukeep set enable
operation done.
```

2.14.7   mib cpuKeep get

Get the CPU clear-on-read mode status.

mib cpukeep get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the CPU clear-on-read mode status.

```
dev0@qca>mib cpukeep get
[CPU_KEEP Get]:ENABLE
operation done.
```

2.14.8   mib xgstatistics get

Get the MIB statistics on a specified XGMAC port. The counters do not clear on read no matter if CPU keep is enabled or disabled.

mib xgstatistics get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 5-6.

Examples

The following example is getting the MIB statistics based on port 5.

```
dev0@qca>mib xgstatistics get 5
[XGMIB info]
RxFrame            <0x0000000000000001> RxByte
<0x00000000000c3c0b> RxByteGood          <0x00000000000000a3>
RxBroadGood        <0x0000000000000000> RxMultiGood
<0x0000000000000001> RxFcsErr            <0x0000000000000000>
RxRuntErr          <0x0000000000000000> RxJabberError
<0x0000000000000000> RxUndersizeGood     <0x0000000000000000>
RxOversizeGood     <0x0000000000000000> Rx64Byte
<0x0000000000000000> Rx128Byte           <0x0000000000000000>
Rx256Byte          <0x0000000000000001> Rx512Byte
<0x0000000000000000> Rx1024Byte          <0x0000000000000000>
RxMaxByte          <0x0000000000000000> RxUnicastGood
<0x0000000000000000> RxLengthError       <0x0000000000000000>
RxOutOfRangeError  <0x0000000000000000> RxPause
<0x0000000000000000> RxOverFlow          <0x0000000000000000>
RxVLANFrameGoodBad <0x0000000000000000> RxWatchDogError
<0x0000000000000000> RxLPIUsec           <0x0000000000000000>
RxLPITran          <0x0000000000000000> RxDropFrameGoodBad
<0x0000000000000000> RxDropByteGoodBad   <0x0000000000000000>
TxByte             <0x0000000000049562> TxFrame
<0x0000000000000744> TxBroadGood         <0x0000000000000000>
TxMultiGood        <0x0000000000000007> Tx64Byte
<0x0000000000000000> Tx128Byte           <0x0000000000000000>
Tx256Byte          <0x0000000000000007> Tx512Byte
<0x0000000000000000> Tx1024Byte          <0x0000000000000000>
TxMaxByte          <0x0000000000000000> TxUnicast
```

```
<0x0000000000000000> TxMulti              <0x0000000000000007>
TxBroad             <0x0000000000000000> TxUnderFlowError
<0x0000000000000000> TxByteGood           <0x00000000000004bb>
TxFrameGood         <0x0000000000000744> TxPause
<0x0000000000000000> TxVLANFrameGood      <0x0000000000000000>
TxLPIUsec           <0x0000000000000000> TxLPITran
<0x0000000000000000>
operation done.
```

2.15 IP

The IP commands are designed for the L3 IP configurartion. The IP commands include adding/ deleting host entry, network entry, setting/getting ARP/ND/IPv4/IPv6 souce guard configuration based on VSI/port, setting/getting nexthop, public IP address, interface, port MAC address, global configuration, and MC mode.

2.15.1 ip vsiarpsg set

Set the ARP source guard configuration based on VSI.

ip vsiarpsg set <*vsi*>

Syntax description

Parameter	Description
<*vsi*>	Specifies the VSI value. The range is 0-31.
[arp_sg_en]	Enables or disables the ARP source guard function.
[arp_sg_violation_action]	Specifies the check fail action for ARP source guard.
[arp_sg_port_en]	Enables or disables the source port check for ARP source guard.
[arp_sg_svlan_en]	Enables or disables the SVLAN check for ARP source guard.
[arp_sg_cvlan_en]	Enables or disables the CVLAN check for ARP source guard.
[arp_sg_unk_action]	Specifies the action for ARP unkown source guard.
[nd_sg_en]	Enables or disables the ND source guard function.
[nd_sg_violation_action]	Specifies the check fail action for ND source guard.
[nd_sg_port_en]	Enables or disables the source port check for ND source guard.
[nd_sg_svlan_en]	Enables or disables the SVLAN check for ND source guard.
[nd_sg_cvlan_en]	Enables or disables the CVLAN check for ND source guard.
[nd_sg_unk_action]	Specifies the action for ND unkown source guard.

Examples

The following example is enabling the ARP and ND source guard function for VSI 1, including source port, SVLAN, CVLAN check, action is drop if it is unkown source or source check fail.

```
dev0@qca>ip vsiarpsg set 1
arp_sg_en(yes):
```

```
arp_sg_violation_action(forward): drop
arp_sg_port_en(yes):
arp_sg_svlan_en(yes):
arp_sg_cvlan_en(yes):
arp_sg_unk_action(forward): drop
nd_sg_en(yes):
nd_sg_violation_action(forward): drop
nd_sg_port_en(yes):
nd_sg_svlan_en(yes):
nd_sg_cvlan_en(yes):
nd_sg_unk_action(forward): drop
operation done.
```

2.15.2   ip vsiarpsg get

Get the ARP source guard configuration based on VSI.

ip vsiarpsg get <*vsi*>

Syntax description

Parameter	Description
<*vsi*>	Specifies the VSI value. The range is 0-31.

Examples

The following example is getting the ARP/ND source guard configuration for VSI 1.

```
dev0@qca>ip vsiarpsg get 1
[arp_sg_en]:0x1  [arp_sg_violation_action]:0x1  [arp_sg_port_en]:0x1
[arp_sg_svlan_en]:0x1  [arp_sg_cvlan_en]:0x1  [arp_src_unk_action]:0x1
[nd_sg_en]:0x1  [nd_sg_violation_action]:0x1  [nd_sg_port_en]:0x1
[nd_sg_svlan_en]:0x1  [nd_sg_cvlan_en]:0x1  [nd_src_unk_cmd]:0x1
operation done
```

2.15.3   ip networkroute add

Add a network entry by index.

ip networkroute add <*index*>

Syntax description

Parameter	Description
<*index*>	Specifies the entry index of table. The range is 0-31.
[type]	Specifies the IP type. 0 – IPv4 1 – IPv6
[ip4_addr]	Specifies the IPv4 address.

Parameter	Description
[ip4_addr_mask]	Specifies the IPv4 mask.
[action]	Specifies the forward action.
[dst_info]	Specifies the nexthop, port ID or port bitmap.
[lan_wan]	Specifies the IP address belonging to LAN or WAN.

Examples

The following example is adding the network entry 192.168.1.1 with mask 255.255.255.0 to index 0 with LAN property.

```
dev0@qca>ip networkroute add 0
type(0):
ip4_addr: 192.168.2.1
ip4_addr_mask: 255.255.255.0
action(forward):
dst_info(0):
lan_wan(0):
operation done.
```

2.15.4   ip networkroute get

Get the network entry by index and IP type.

ip networkroute get <index> <type>

Syntax description

Parameter	Description
<index>	Specifies the table entry index. The range is 0-31.
<type>	Specifies the IP type. 0 – IPv4 1 – IPv6

Examples

The following example is getting the network table entry 0 for IPv4.

```
dev0@qca>ip networkroute get 0 0
[type]:0x0
[dst_info]:0x0  [lan_wan]:0x0 [action]:0x0
[ip4_addr]:192.168.2.1
[ip4_addr_mask]:255.255.255.0
operation done.
```

2.15.5   ip networkroute del

Delete a network entry by index and type.

ip networkroute del <index> <type>

Syntax description

Parameter	Description
<index>	Specifies the table entry index. The range is 0-31.
<type>	Specifies the IP type. 0 – IPv4 1 – IPv6

Examples

The following example is deleting the network table entry 0 for IPv4.

```
dev0@qca>ip networkroute del 0 0
operation done
```

2.15.6   ip intf set

Set the L3 interface entry by index.

ip intf set *<index>*

Syntax description

Parameter	Description
<index>	Specifies the table entry index. The range is 0-255.
[mru]	Specifies the maximum received unit on this L3 interface.
[mtu]	Specifies the maximum transmission unit on this L3 interface.
[ttl_dec_bypass_en]	Enables or disables the TTL decrement bypass.
[ipv4_uc_route_en]	Enables or disables the IPv4 unicast route.
[ipv6_uc_route_en]	Enables or disables the IPv6 unicast route.
[icmp_trigger_en]	Enables or disables the ICMP trigger.
[ttl_exceed_action]	Specifies the action for TTL exceed.
[ttl_exceed_deacclr_en]	Enables or disables the TTL exceed deacceleration.
[mac_addr_bitmap]	Specifies the bitmap for the MAC address.
[mac_addr]	Specifies the MAC address on this interface.

Examples

The following example is setting the interface entry 0 to enable IPv4 route and IPv6 route, MAC address 00-00-00-00-00-01.

```
dev0@qca>ip intf set 0
mru(0x5dc):
mtu(0x5dc):
ttl_dec_bypas_en(no):
ipv4_uc_route_en(yes):
ipv6_uc_route_en(yes):
```

```
icmp_trigger_en(no):
ttl_exceed_action(forward):
ttl_exceed_deacclr_en(no):
mac_addr_bitmap(0): 1
mac_addr: 00-00-00-00-00-01
operation done
```

2.15.7 ip intf get

Get the L3 interface entry by index.

ip intf get <*index*>

Syntax description

Parameter	Description
<index>	Specifies table entry index. The range is 0-255.

Examples

The following example is getting the L3 interface table entry 0.

```
dev0@qca>ip intf get 0
[mru]:0x5dc  [mtu]:0x5dc  [ttl_dec_bypass_en]:0x0
[ipv4_route_en]:0x1  [ipv6_route_en]:0x1  [icmp_trigger_en]:0x0
[ttl_exceed_action]:0x0  [ttl_exceed_de_accler_en]:0x1  [mac_addr_bitmap]:0x1
[mac_addr]:00-00-00-00-00-01
[rx_pkt]:0x0  [rx_byte]:0x0  [rx_drop_pkt]:0x0  [rx_drop_byte]:0x0
[tx_pkt]:0x0  [tx_byte]:0x0  [tx_drop_pkt]:0x0  [tx_drop_byte]:0x0
operation done.
```

2.15.8 ip vsiintf set

Set the interface index for VSI.

ip vsiintf set <*vsi*>

Syntax description

Parameter	Description
<vsi>	Specifies the VSI value. The range is 0-31.
[*l3_if_valid*]	Valid flag to indicate whether l3_if_index takes effect.
[*l3_if_index*]	Specifies the interface entry index. The range is 0-255.

Examples

The following example is setting interface 1 to VSI 1.

```
dev0@qca>ip vsiintf set 1
l3 if valid(0): 1
```

```
l3 if index(0): 1
operation done.
```

2.15.9   ip vsiintf get

Get the interface entry index for VSI.

ip vsiintf get <*vsi*>

Syntax description

Parameter	Description
<vsi>	Specifies the VSI value. The range is 0-31.

Examples

The following example is getting the interface index for VSI 1.

```
dev0@qca>ip vsiintf get 1
[l3_if_valid]:0x1   [l3_if_index]:0x1
operation done.
```

2.15.10   ip portintf set

Set the interface entry index for port.

ip portintf set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID.
[*l3_if_valid*]	Valid flag to indicate whether l3_if_index takes effect.
[*l3_if_index*]	Specifies the Interface entry index. The range is 0-255.

Examples

The following example is setting interface 2 to port 1.

```
dev0@qca>ip portintf set 1
l3 if valid(0): 1
l3 if index(0): 2
operation done.
```

2.15.11   ip portintf get

Get the interface entry index for port.

ip portintf get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Port ID.

Examples

The following example is getting the interface entry index for port 1.

```
dev0@qca>ip portintf get 1
[l3_if_valid]:0x1  [l3_if_index]:0x2
operation done.
```

2.15.12   ip nexthop set

Set a nexthop entry by index.

ip nexthop set *<index>*

Syntax description

Parameter	Description
<index>	Specifies the table entry index, the range is 0-2559.
[*type*]	0 – The if_index takes effect. 1 – The port takes effect.
[*port*]	Specifies the port for nexthop.
[*if_index*]	Specifies the L3 interface entry index for post route. The range is 0-255.
[*ip_to_me_en*]	Enables or disables the ip to me flag.
[*pub_ip_index*]	Specifies the public ipaddr index.
[*stag_fmt*]	0 – untagged SVLAN 1 – tagged SVLAN
[*svid*]	Specifies the SVLAN ID.
[*ctag_fmt*]	0 – untagged CVLAN 1 – tagged CVLAN
[*cvid*]	Specifies the CVLAN ID.
[*mac_addr*]	Specifies the destination MAC address.
[*dnat_ip*]	Specifies the DNAT IP address.

Examples

The following example is setting the nexthop entry 0 to port 1 on inteface 0 without VALN, destination MAC address is 00-00-00-00-00-03.

```
dev0@qca>ip nexthop set 0
type(0): 1
port(0): 1
if_index(0):
```

```
ip_to_me_en(no):
pub_ip_index(0):
stag_fmt(0):
svid(0):
ctag_fmt(0):
cvid(0):
mac_addr: 00-00-00-00-00-03
dnat_ip: 192.168.2.1
operation done.
```

2.15.13   ip nexthop get

Get the nexthop entry by index.

ip nexthop get <*index*>

Syntax description

Parameter	Description
<index>	Specifies the table entry index. The range is 0-2559.

Examples

The following example is getting the nexthop entry 0.

```
dev0@qca>ip nexthop get 0
[type]:0x1[port]:0x1 [if_index]:0x0
[ip_to_me_en]:0x0 [pub_ip_index]:0x0 [stag_fmt]:0x0
[svid]:0x0 [ctag_fmt]:0x0 [cvid]:0x0
[mac_addr]:00-00-00-00-00-03
[dnat_ip]:192.168.2.1
operation done.
```

2.15.14   Ip pubip set

Set a public IP entry by index.

ip pubip set <*index*>

Syntax description

Parameter	Description
<index>	Specifies the table entry index. The range is 0-15.
[pub_ip_addr]	Specifies the public IPv4 address.

Examples

The following example is setting 192.168.2.1 to public table entry 1.

```
dev0@qca>ip pubip set 1
pub_ip_addr: 192.168.2.1
operation done.
```

2.15.15   Ip pubip get

Get the public IP entry by index.

ip pubip get <*index*>

Syntax description

Parameter	Description
<index>	Specifies the table entry index. The range is 0-15.

Examples

The following example is getting the public IP table entry 1.

```
dev0@qca>ip pubip get 1
[pub_ip_addr]:192.168.2.1
operation done.
```

2.15.16   ip vsisg set

Set the IP source guard configuration based on VSI.

ip vsisg set <*vsi*>

Syntax description

Parameter	Description
<vsi>	Specifies the VSI value. The range is 0-31.
[ipv4_sg_en]	Enables or disables the IPv4 source guard function.
[ipv4_sg_violation_action]	Specifies the check fail action for IPv4 source guard.
[ipv4_sg_port_en]	Enables or disables the source port check for IPv4 source guard.
[ipv4_sg_svlan_en]	Enables or disables the SVLAN check for IPv4 source guard.
[ipv4_sg_cvlan_en]	Enables or disables the CVLAN check for IPv4 source guard.
[ipv4_sg_unk_action]	Specifies the action for IPv4 unkown source guard.
[ipv6_sg_en]	Enables or disables the IPv6 source guard function.
[ipv6_sg_violation_action]	Specifies the check fail action for IPv6 source guard.
[ipv6_sg_port_en]	Enables or disables the source port check for IPv6 source guard.
[ipv6_sg_svlan_en]	Enables or disables the SVLAN check for IPv6 source guard.

Parameter	Description
[ipv6_sg_cvlan_en]	Enables or disables the CVLAN check for IPv6 source guard.
[ipv6_sg_unk_action]	Specifies the action for IPv6 unkown source guard.

Examples

The following example is enabling the IPv4 and IPv6 source guard function for VSI 1, including source port, SVLAN, CVLAN check, action is drop if it is unkown source or source check fail.

```
dev0@qca>ip vsisg set 1
ipv4_sg_en(enable):
ipv4_sg_violation_action(forward): drop
ipv4_sg_port_en(yes):
ipv4_sg_svlan_en(yes):
ipv4_sg_cvlan_en(yes):
ipv4_src_unk_action(forward): drop
ipv6_sg_en(yes):
ipv6_sg_violation_action(forward): drop
ipv6_sg_port_en(yes):
ipv6_sg_svlan_en(yes):
ipv6_sg_cvlan_en(yes):
ipv6_src_unk_action(forward): drop
operation done.
```

2.15.17 ip vsisg get

Get the IP source guard configuration based on VSI.

ip vsisg get *<vsi>*

Syntax description

Parameter	Description
<vsi>	Specifies the VSI value. The range is 0-31.

Examples

The following example is getting the IP source guard configuration for VSI 1.

```
dev0@qca>ip vsisg get 1
[ipv4_sg_en]:0x1  [ipv4_sg_violation_action]:0x1 [ipv4_sg_port_en]:0x1
[ipv4_sg_svlan_en]:0x1  [ipv4_sg_cvlan_en]:0x1 [ipv4_src_unk_action]:0x1
[ipv6_sg_en]:0x1  [ipv6_sg_violation_action]:0x1 [ipv6_sg_port_en]:0x1
[ipv6_sg_svlan_en]:0x1  [ipv6_sg_cvlan_en]:0x1 [ipv6_src_unk_action]:0x1
operation done.
```

2.15.18 ip portsg set

Set the IP source guard configuration based on port.

ip portsg set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID.
[ipv4_sg_en]	Enables or disables the IPv4 source guard function.
[ipv4_sg_violation_action]	Specifies the check fail action for IPv4 source guard.
[ipv4_sg_port_en]	Enables or disables the source port check for IPv4 source guard.
[ipv4_sg_svlan_en]	Enables or disables the SVLAN check for IPv4 source guard.
[ipv4_sg_cvlan_en]	Enables or disables the CVLAN check for IPv4 source guard.
[ipv4_sg_unk_action]	Specifies the action for IPv4 unkown source guard.
[ipv6_sg_en]	Enables or disables the IPv6 source guard function.
[ipv6_sg_violation_action]	Specifies the check fail action for IPv6 source guard.
[ipv6_sg_port_en]	Enables or disables the source port check for IPv6 source guard.
[ipv6_sg_svlan_en]	Enables or disables the SVLAN check for IPv6 source guard.
[ipv6_sg_cvlan_en]	Enables or disables the CVLAN check for IPv6 source guard.
[ipv6_sg_unk_action]	Specifies the action for IPv6 unkown source guard.

Examples

The following example is enabling the IPv4 and IPv6 source guard function for port 1, including source port, SVLAN, CVLAN check, action is drop if it is unkown source or source check fail.

```
dev0@qca>ip portsg set 1
ipv4_sg_en(yes):
ipv4_sg_violation_action(forward): drop
ipv4_sg_port_en(yes):
ipv4_sg_svlan_en(yes):
ipv4_sg_cvlan_en(yes):
ipv4_src_unk_action(forward): drop
ipv6_sg_en(yes):
ipv6_sg_violation_action(forward): drop
ipv6_sg_port_en(yes):
ipv6_sg_svlan_en(yes):
ipv6_sg_cvlan_en(yes):
ipv6_src_unk_action(forward): drop
operation done.
```

2.15.19   ip portsg get

Get the IP source guard configuration based on port.

ip portsg get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specfied the port ID.

Examples

The following example is getting the IP source guard configuration for port 1.

```
dev0@qca>ip portsg get 1
[ipv4_sg_en]:0x1  [ipv4_sg_violation_cmd]:0x1 [ipv4_sg_port_en]:0x1
[ipv4_sg_svlan_en]:0x1  [ipv4_sg_cvlan_en]:0x1 [ipv4_src_unk_action]:0x1
[ipv6_sg_en]:0x1  [ipv6_sg_violation_action]:0x1 [ipv6_sg_port_en]:0x1
[ipv6_sg_svlan_en]:0x1  [ipv6_sg_cvlan_en]:0x1 [ipv6_src_unk_action]:0x1
operation done.
```

2.15.20   ip portarpsg set

Set the ARP source guard configuration based on port.

ip portarpsg set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID.
[arp_sg_en]	Enables or disables the ARP source guard function.
[arp_sg_violation_action]	Specifies the check fail action for ARP source guard.
[arp_sg_port_en]	Enables or disables the source port check for ARP source guard.
[arp_sg_svlan_en]	Enables or disables the SVLAN check for ARP source guard.
[arp_sg_cvlan_en]	Enables or disables the CVLAN check for ARP source guard.
[arp_sg_unk_action]	Specifies the action for ARP unkown source guard.
[nd_sg_en]	Enables or disables the ND source guard function.
[nd_sg_violation_action]	Specifies the check fail action for ND source guard.
[nd_sg_port_en]	Enables or disables the source port check for ND source guard.
[nd_sg_svlan_en]	Enables or disables the SVLAN check for ND source guard.
[nd_sg_cvlan_en]	Enables or disables the CVLAN check for ND source guard.
[nd_sg_unk_action]	Specifies the action for ND unkown source guard.

Examples

The following example is enabling the ARP and ND source guard function for port 1, including source port, SVLAN, CVLAN check, action is drop if it is unkown source or source check fail.

```
dev0@qca>ip portarpsg set 1
arp_sg_en(yes):
arp_sg_violation_action(forward): drop
arp_sg_port_en(yes):
arp_sg_svlan_en(yes):
arp_sg_cvlan_en(yes):
arp_sg_unk_action(forward): drop
nd_sg_en(yes):
nd_sg_violation_action(forward): drop
```

```
nd_sg_port_en(yes):
nd_sg_svlan_en(yes):
nd_sg_cvlan_en(yes):
nd_sg_unk_action(forward): drop
operation done.
```

2.15.21   ip portarpsg get

Get the ARP source guard configuration based on port.

ip portarpsg get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID.

Examples

The following example is getting the ARP/ND source guard configuration for port 1.

```
dev0@qca>ip portarpsg  get 1
[arp_sg_en]:0x1  [arp_sg_violation_action]:0x1  [arp_sg_port_en]:0x1
[arp_sg_svlan_en]:0x1  [arp_sg _cvlan_en]:0x1  [arp_src_unk_action]:0x1
[nd_sg_en]:0x1  [nd_sg_violation_action]:0x1  [nd_sg_port_en]:0x1
[nd_sg_svlan_en]:0x1 [nd_sg_cvlan_en]:0x1  [nd_src_unk_action]:0x1
operation done.
```

2.15.22   ip portmac set

Set the MAC address for the specified port.

ip portmac set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID.
[entry_valid]	Valid flag to indicate whether mac_addr takes effect.
[mac_addr]	Specifies the MAC address for this port.

Examples

The following example is setting the MAC address 00-00-00-00-00-01 for port 1.

```
dev0@qca>ip portmac set 1
entry_valid(0): 1
mac_addr: 00-00-00-00-00-01
operation done.
```

2.15.23   ip portmac get

Get the MAC address for the specified port.

ip portmac get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID.

Examples

The following example is getting the port MAC address for port 1.

```
dev0@qca>ip portmac get 1
[entry_valid]:0x1
[mac_addr]:00-00-00-00-00-01
operation done.
```

2.15.24   ip routemiss set

Set the route miss action.

ip routemiss set <*action*>

Syntax description

Parameter	Description
<action>	Specifies the action for route miss.

Examples

The following example is setting the route miss drop action.

```
dev0@qca>ip routemiss set 1
operation done.
```

2.15.25   ip routemiss get

Get the route miss action.

ip routemiss get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the route miss action.

```
dev0@qca>ip routemiss get
[cmd]:0x1
operation done.
```

2.15.26   ip mcmode set

Set the multicast mode based on VSI.

ip mcmode set <*vsi*>

Syntax description

Parameter	Description
<*vsi*>	Specifies the VSI value. The range is 0-31.
[ipv4_mc_en]	Enable s or disables IPv4 mulitcast.
[ipv4_igmpv3_mode]	Specifies the IPv4 multicast mode: 0 – (*, G,V) 1 – (S,G,V) and (*,G,V)
[ipv6_mc_en]	Enables or disables IPv6 mulitcast.
[ipv6_mldv2_mode]	Specifies the IPv6 multicast mode: 0 – (*, G,V) 1 – (S,G,V) and (*,G,V)

Examples

The following example is setting the IPv4 and IPv6 MC enable, mode 0 for VSI 1.

```
dev0@qca>ip mcmode set 1
ipv4_mc_en(yes):
ipv4_igmpv3_mode(0):
ipv6_mc_en(yes):
ipv6_mldv2_mode(0):
operation done.
```

2.15.27   ip mcmode get

Get the multicast mode based on VSI.

ip mcmode get <*vsi*>

Syntax description

Parameter	Description
<*vsi*>	Specifies the VSI value. The range is 0-31.

Examples

The following example is getting the IPv4 and IPv6 multicast confguration for VSI 1.

```
dev0@qca>ip mcmode get 1
[ipv4_mc_en]:0x1 [ipv4_igmpv3_mode]:0x0 [ipv6_mc_en]:0x1
[ipv6_mldv2_mode]:0x0
operation done.
```

2.15.28   ip globalctrl set

Set the IP global control configuration.

ip globalctrl set

Syntax description

Parameter	Description
[mru_fail_action]	Specifies the MRU check fail action.
[mru_deacclr_en]	Enables or disables the MRU check fail de-acceleration.
[mtu_fail_action]	Specifies MTU check fail action.
[mtu_deacclr_en]	Enables or disables the MTU check fail de-acceleration.
[mtu_nonfrag_fail_action]	Specifies MTU check fail action for nonfrag IP packet.
[mtu_nonfrag_deacclr_en]	Enables or disables the MTU check fail de-acceleration for nonfrag.
[prefix_bc_action]	Specifies the action for prefix based broadcast.
[prefix_bc_deacclr_en]	Enables or disables the action for prefix broadcast de-acceleration.
[icmp_rdt_action]	Specifies the action for ICMP redirect.
[icmp_rdt_deacclr_en]	Enables or disables the ICMP rederect de-acceleration.
[hash_mode_0]	Specifies the hash mode 0.
[hash_mode_1]	Specifies the hash mode 1.

Examples

The following example is setting the IP global control configuration.

```
dev0@qca>ip globalctrl set
mru_fail_action(forward): drop
mru_deacclr_en(no):
mtu_fail_action(forward): drop
mtu_deacclr_en(no):
mtu_nonfrag_fail_action(forward): drop
mtu_nonfrag_deacclr_en(no):
prefix_bc_action(forward): drop
prefix_bc_deacclr_en(no):
icmp_rdt_action(forward): drop
icmp_rdt_deacclr_en(no):
hash_mode_0(0):
```

```
hash_mode_1(0): 1
operation done.
```

2.15.29   ip globalctrl get

Get the IP global control configuration.

ip globalctrl get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the IP global control configuration.

```
dev0@qca>ip globalctrl get
[mru_fail_action]:0x1 [mru_deacclr_en]:0x1 [mtu_fail_action]:0x1
[mtu_deacclr_en]:0x1 [mtu_nonfrag_fail_action]:0x1
[mtu_nonfrag_deacclr_en]:0x1 [prefix_bc_action]:0x1
[prefix_bc_deacclr_en]:0x1 [icmp_rdt_action]:0x1 [icmp_rdt_deacclr_en]:0x1
[hash_mode_0]:0x0 [hash_mode_1]:0x1
operation done.
```

2.15.30   ip hostentry add

Add one IP host entry.

ip hostentry add

Syntax description

Parameter	Description
[entryid]	Specifies the entry index. The range is 0-6143.
[entryflags]	Specifies the flag. 1 – IPv4 uni 2 – IPv6 uni 8 – IPv4 multi 0x10 – IPv6 multi
[entrystatus]	Specifies the status.
[ip4 addr]	Specifies the Ipv4 addresss.
[ip6 addr]	Specifies the Ipv6 address.
[mac addr]	Not supported in IPQ60xx.
[interface id]	Not supported in IPQ60xx.
[load_balance num]	Not supported in IPQ60xx.

Parameter	Description
[vrf id]	Not supported in IPQ60xx.
[port id]	Not supported in IPQ60xx.
[action]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[counter]	Not supported in IPQ60xx.
[dst info]	Specifies the destination info for route.
[sync toggle]	Specifies the sync toggle value.
[lan wan]	Specifies LAN or WAN this IP entry belongs to.

Examples

The following example is adding the IPv4 unicast host entry 192.168.20.100 on the LAN side.

```
dev0@qca>ip hostentry add
entryid(0):
entryflags(0x1):
entrystatus(0): 1
ip4 addr: 192.168.20.100
mac addr: 00-00-00-00-00-08
interface id(0):
load_balance num(0):
vrf id(0):
port id(0):
action(forward):
mirror(no):
counter(no):
dst info(0):
sync toggle(0):
lan wan(0):
[entryid]:0x4d0   [entryflags]:0x1   [entrystatus]:0x1
[ip_addr]:192.168.20.100   [mac_addr]:00-00-00-00-00-08
[interfaceid]:0x0   [portid]:0x0
[load_balance num]:0x0   [vrfid]:0x0   [action]:FORWARD
[mirror]:Disable
[couter]:Disable
[pppoe]:Disable
[lan_wan]:0x0   [sync_toggle]:0x0   [dst_info]:0x0
[vsi]:0x0
operation done.
```

2.15.31   ip hostentry get

Get the IP host entry by key or index.

ip hostentry get <*get_mode*>

Syntax description

Parameter	Description
<get_mode>	Specifies the get mode. 0 – key 1 – index
[entryid]	Specifies the entry index. The range is 0-6143.
[entryflags]	Specifies the flag. 1 – IPv4 uni 2 – IPv6 uni 8 – IPv4 multi 0x10 – IPv6 multi
[entrystatus]	Specifies the status.
[ip4 addr]	Specifies the IPv4 addresss.
[ip6 addr]	Specifies the IPv6 address.
[mac addr]	Not supported in IPQ60xx.
[interface id]	Not supported in IPQ60xx.
[load_balance num]	Not supported in IPQ60xx.
[vrf id]	Not supported in IPQ60xx.
[port id]	Not supported in IPQ60xx.
[action]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[counter]	Not supported in IPQ60xx.
[dst info]	Specifies the destination info for route.
[sync toggle]	Specifies the sync toggle value.
[lan wan]	Specifies LAN or WAN this IP entry belongs to.

Examples

The following example is getting the IPv4 unicast host entry by index.

```
dev0@qca>ip hostentry get 1
entryid(0): 0x4d0
entryflags(0x1):
entrystatus(0):
ip4 addr: 0.0.0.0
mac addr: 00-00-00-00-00-00
interface id(0):
load_balance num(0):
vrf id(0):
port id(0):
action(forward):
mirror(no):
```

```
counter(no):
dst info(0):
sync toggle(0):
lan wan(0):
[entryid]:0x4d0  [entryflags]:0x1  [entrystatus]:0x1
[ip_addr]:192.168.20.100  [mac_addr]:00-00-00-00-00-00
[interfaceid]:0x0  [portid]:0x0
[load_balance num]:0x0  [vrfid]:0x0  [action]:FORWARD
[mirror]:Disable
[couter]:Disable
[pppoe]:Disable
[lan_wan]:0x0  [sync_toggle]:0x0  [dst_info]:0x0
[vsi]:0x0
operation done.
```

2.15.32   ip hostentry del

Delete the IP host entry by key and index.

ip hostentry del <*del_mode*>

Syntax description

Parameter	Description
<*del_mode*>	Delete mode: 0 – key 1 – index
[entryid]	Specifies the entry index. The range is 0~6143.
[entryflags]	Specifies the flag. 1 – IPv4 uni 2 – IPv6 uni 8 – IPv4 multi 0x10 – IPv6 multi
[entrystatus]	Specifies the status.
[ip4 addr]	Specifies the Ipv4 addresss.
[ip6 addr]	Specifies the Ipv6 address.
[mac addr]	Not supported in IPQ60xx.
[interface id]	Not supported in IPQ60xx.
[load_balance num]	Not supported in IPQ60xx.
[vrf id]	Not supported in IPQ60xx.
[port id]	Not supported in IPQ60xx.
[action]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[counter]	Not supported in IPQ60xx.

Parameter	Description
[dst info]	Specifies the destination info for route.
[sync toggle]	Specifies the sync toggle value.
[lan wan]	Specifies LAN or WAN this IP entry belongs to.

Examples

The following example is deleting the IPv4 unicast host entry by index.

```
dev0@qca>ip hostentry del 1
entryid(0): 0x4d0
entryflags(0x1):
entrystatus(0):
ip4 addr: 0.0.0.0
mac addr: 00-00-00-00-00-00
interface id(0):
load_balance num(0):
vrf id(0):
port id(0):
action(forward):
mirror(no):
counter(no):
dst info(0):
sync toggle(0):
lan wan(0):
operation done.
```

2.16   FLOW

The flow commands are designed for flow configuration. The flow commands include adding/deleting flow entry, flowhost entry, setting/getting flow age time, flow status, and flow global configuration.

2.16.1   flow status set

Set the flow status enable or disable.

flow status set <*status*>

Syntax description

Parameter	Description
<*status*>	0 – disable 1 – enable

Examples

The following example is setting the flow status enable.

```
dev0@qca>flow status set 1
operation done.
```

2.16.2 flow status get

Get the flow status.

flow status get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the flow status.

```
dev0@qca>flow status get
[status]:0x1
operation done.
```

2.16.3 flow agetime set

Set the flow table aging time.

flow agetime set

Syntax description

Parameter	Description
[age_time]	Specifies the age time value: 0-64k
[age_unit]	Specifies the age unit: 0 – second 1 – cycle 2 – million cycle

Examples

The following example is setting the flow age time 5 seconds.

```
dev0@qca>flow agetime set
age_time(0): 5
age_unit(0):
operation done.
```

2.16.4 flow agetime get

Get the flow table aging time.

flow agetime get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the flow age time.

```
dev0@qca>flow agetime get
[age_time]:0x5 [age_unit]:0x0
operation done.
```

2.16.5 flow mgmt set

Set the flow mgmt configuration based on flow type and flow direction.

flow mgmt set <type> <dir>

Syntax description

Parameter	Description
<type>	0 – L3 unicast 1 – L2 unicast 2 – multicast
<dir>	0 – LAN to LAN 1 – LAN to WAN 2 – WAN to LAN 3 – WAN to WAN 4 – others
[miss_action]	Specifies the action for flow mismatch.
[frag_bypass_en]	Enables or disables the flow bypass for fragment packet.
[tcpspec_bypass_en]	Enables or disables the flow bypass for TCP specific packet.
[all_bypass_en]	Enables or disables the flow bypass for all packet.
[key_sel]	Specifies the key selector. 0 – souce IP 1 – destination IP

Examples

The following example is setting the flow bypass disable, flow miss drop, use source IP as key selector for L3 unicast LAN to WAN.

```
dev0@qca>flow mgmt set 0 1
miss_action(forward): drop
frag_bypass_en(yes):
tcpspec_bypass_en(yes):
all_bypass_en(yes): no
key_sel(0):
operation done.
```

2.16.6 flow mgmt get

Get the flow mgmt configuration based on flow type and flow direction.

flow mgmt get <*type*> <*dir*>

Syntax description

Parameter	Description
<*type*>	0 – L3 unicast 1 – L2 unicast 2 – multicast
<*dir*>	0 – LAN to LAN 1 – LAN to WAN 2 – WAN to LAN 3 – WAN to WAN 4 – others

Examples

The following example is getting the flow mgmt configuration for L3 unicast LAN to WAN.

```
dev0@qca>flow mgmt get 0 1
[frag_bypass_en]:0x0 [tcp_spec_bypass_en]:0x0 [all_bypass_en]:0x0
[key_sel]:0x0 [miss_action]:0x1
operation done.
```

2.16.7 flow entry add

Add one flow entry by key or index.

flow entry add <*add_mode*>

Syntax description

Parameter	Description
<add_mode>	0 – key base 1 – index based
[entry id]	Specifies the entry index. The range is 0-4095.
[entry type]	Specifies the entry type. 1 – IPv4 5 tuple 2 – IPv6 5 tuple 4 – IPv4 3 tuple 8 – IPv6 3 tuple
[host addr type]	0 – souce IP 1 – destination IP
[host addr index]	Specifies the host addr index. The range is 0-8k.
[protocol]	1 – TCP 2 – UDP 3 – UDP-lite 0 – Others
[agetime]	Specifies the aging time. The range is 0-3.
[src intf valid]	Valid flag to indicate whether the source interface index takes effect.
[src intf index]	Specifies the souce interface entry index. The range is 0-255.
[fwd type]	Specifies the forward type: snat/dnat/route/bridge.
[snat nexthop]	Specifies the SNAT nexthop. The range is 0-4k.
[snat srcport]	Specifies the SNAT L4 translation source port.
[dnat nexthop]	Specifies the DNAT nexthop. The range is 0-4k.
[dnat dstport]	Specifies the DNAT L4 translation destination port.
[route nexthop]	Specifies the route nexthop. The range is 0-4k.
[port valid]	Valid flag to indicate whether the route port takes effect.
[route port]	Specifies the route port. The range is 0-255.
[bridge port]	Specifies the bridge port. The range is 0-255.
[deacclr]	Enables or disables de-acceleration.
[copy tocpu]	Enables or disables copy to CPU.
[syn toggle]	Specifies the sync toggle value. The range is 0-1.
[pri profile]	Specifies the profile index for QoS mapping. The range is 0-31.
[service code]	Specifies the service code. The range is 0-255.
[ip type]	0 – IPv4 1 – IPv6
[src port]	Specifies the L4 source port.
[dst port]	Specifies the L4 destination port.

Parameter	Description
[ip addr]	IP address.
[tree id]	Specifies the tree ID for NSS FW. The range is 0-16M.

Examples

The following example is adding the L3 unicast flow for SNAT.

```
dev0@qca>flow entry add 0
entry id(0):
entry type(0): 1
host addr type(0):
host addr index(0): 0x4d0
protocol(0): 1
agetime(0): 3
src intf valid(0):
src intf index(0):
fwd type(0): 1
snat nexthop(0): 1
snat srcport(0): 55
dnat nexthop(0):
dnat dstport(0):
route nexthop(0):
port valid(0):
route port(0):
bridge port(0):
deacclr(yes):
copy tocpu(yes):
syn toggle(0):
pri profile(0):
service code(0):
ip type(0):
src port(0): 63
dst port(0): 63
ip addr: 10.10.10.10
tree id(0):
[entry_id]:0x958 [entry_type]:0x1 [host_addr_type]:0x0
[host_addr_index]:0x4d0
[protocol]:0x1 [agetime]:0x3 [src_intf_valid]:0x0 [src_intf_index]:0x0
[fwd_type]:0x1
[snat_nexthop]:0x1 [snat_srcport]:0x37 [dnat_nexthop]:0x0 [dnat_dstport]:0x0
[route_nexthop]:0x0
[port_valid]:0x0 [route_port]:0x0 [bridge_port]:0x0 [de_acclr]:0x0
[copy_tocpu]:0x0
[syn_toggle]:0x0 [pri_profile]:0x0 [sevice_code]:0x0 [ip_type]:0x0
[src_port]:0x3f [dst_port]:0x3f [tree_id]:0x0
[ip_addr]:10.10.10.10
```

```
[pkt]:0x0 [byte]:0x0
operation done.
```

2.16.8 flow entry get

Get the flow entry by key or index.

flow entry get <*get_mode*>

Syntax description

Parameter	Description
<*get_mode*>	0 – key base 1 – index based
[entry id]	Specifies the entry index. The range is 0-4095.
[entry type]	Specifies the entry type. 1 – IPv4 5 tuple 2 – IPv6 5 tuple 4 – IPv4 3 tuple 8 – IPv6 3 tuple
[host addr type]	0 – souce IP 1 – destination IP
[host addr index]	Specifies the host addr index. The range is 0-8k.
[protocol]	1 – TCP 2 – UDP 3 – UDP-lite 0 – Others
[agetime]	Specifies the aging time. The range is 0-3.
[src intf valid]	Valid flag to indicate whether the source interface index takes effect.
[src intf index]	Specifies the souce interface entry index. The range is 0-255.
[fwd type]	Specifies the forward type: snat/dnat/route/bridge.
[snat nexthop]	Specifies the SNAT nexthop. The range is 0-4k.
[snat srcport]	Specifies the SNAT L4 translation source port.
[dnat nexthop]	Specifies the DNAT nexthop. The range is 0-4k.
[dnat dstport]	Specifies the DNAT L4 translation destination port.
[route nexthop]	Specifies the route nexthop. The range is 0-4k.
[port valid]	Valid flag to indicate whether the route port takes effect.
[route port]	Specifies the route port. The range is 0-255.
[bridge port]	Specifies the bridge port. The range is 0-255.
[deacclr]	Enables or disables de-acceleration.
[copy tocpu]	Enables or disables copy to CPU.
[syn toggle]	Specifies the sync toggle value. The range is 0-1.

Parameter	Description
[pri profile]	Specifies the profile index for QoS mapping. The range is 0-31.
[service code]	Specifies the service code. The range is 0-255.
[ip type]	0 – IPv4 1 – IPv6
[src port]	Specifies the L4 source port.
[dst port]	Specifies the L4 destination port.
[ip addr]	IP address.
[tree id]	Specifies the tree ID for NSS FW. The range is 0-16M.

Examples

The following example is getting the L3 unicast flow by index, source IP 192.168.20.100, destination IP 10.10.10.10, source port 63, destination port 63, translation port 55.

```
dev0@qca>flow entry get 1
entry id(0): 0x958
entry type(0): 1
host addr type(0):
host addr index(0):
protocol(0):
agetime(0):
src intf valid(0):
src intf index(0):
fwd type(0):
snat nexthop(0):
snat srcport(0):
dnat nexthop(0):
dnat dstport(0):
route nexthop(0):
port valid(0):
route port(0):
bridge port(0):
deacclr(yes):
copy tocpu(yes):
syn toggle(0):
pri profile(0):
service code(0):
ip type(0):
src port(0):
dst port(0):
ip addr: 0.0.0.0
tree id(0):
[entry_id]:0x958 [entry_type]:0x1 [host_addr_type]:0x0
[host_addr_index]:0x4d0
[protocol]:0x1 [agetime]:0x2 [src_intf_valid]:0x0 [src_intf_index]:0x0
[fwd_type]:0x1
```

```
[snat_nexthop]:0x1 [snat_srcport]:0x37 [dnat_nexthop]:0x0 [dnat_dstport]:0x0
[route_nexthop]:0x0
[port_valid]:0x0 [route_port]:0x0 [bridge_port]:0x0 [de_acclr]:0x0
[copy_tocpu]:0x0
[syn_toggle]:0x0 [pri_profile]:0x0 [sevice_code]:0x0 [ip_type]:0x0
[src_port]:0x3f [dst_port]:0x3f [tree_id]:0x0
[ip_addr]:10.10.10.10
[pkt]:0x0 [byte]:0x0
operation done.
```

2.16.9   flow entry del

Delete the flow entry by key or index.

flow entry del <*del_mode*>

Syntax description

Parameter	Description
<*del_mode*>	0 – key base 1 – index based
[entry id]	Specifies the entry index. The range is 0-4095.
[entry type]	Specifies the entry type. 1 – IPv4 5 tuple 2 – IPv6 5 tuple 4 – IPv4 3 tuple 8 – IPv6 3 tuple
[host addr type]	0 – souce IP 1 – destination IP
[host addr index]	Specifies the host addr index. The range is 0-8k.
[protocol]	1 – TCP 2 – UDP 3 – UDP-lite 0 – Others
[agetime]	Specifies the aging time. The range is 0-3.
[src intf valid]	Valid flag to indicate whether the source interface index takes effect.
[src intf index]	Specifies the souce interface entry index. The range is 0-255.
[fwd type]	Specifies the forward type: snat/dnat/route/bridge.
[snat nexthop]	Specifies the SNAT nexthop. The range is 0-4k.
[snat srcport]	Specifies the SNAT L4 translation source port.
[dnat nexthop]	Specifies the DNAT nexthop. The range is 0-4k.
[dnat dstport]	Specifies the DNAT L4 translation destination port.
[route nexthop]	Specifies the route nexthop. The range is 0-4k.
[port valid]	Valid flag to indicate whether the route port takes effect.

Parameter	Description
[route port]	Specifies the route port. The range is 0-255.
[bridge port]	Specifies the bridge port. The range is 0-255.
[deacclr]	Enables or disables de-acceleration.
[copy tocpu]	Enables or disables copy to CPU.
[syn toggle]	Specifies the sync toggle value. The range is 0-1.
[pri profile]	Specifies the profile index for QoS mapping. The range is 0-31.
[service code]	Specifies the service code. The range is 0-255.
[ip type]	0 – IPv4 1 – IPv6
[src port]	Specifies the L4 source port.
[dst port]	Specifies the L4 destination port.
[ip addr]	IP address.
[tree id]	Specifies the tree ID for NSS FW. The range is 0-16M.

Examples

The following example is deleting the L3 unicast flow by index.

```
dev0@qca>flow entry del 1
entry id(0): 0x958
entry type(0): 1
host addr type(0):
host addr index(0):
protocol(0):
agetime(0):
src intf valid(0):
src intf index(0):
fwd type(0):
snat nexthop(0):
snat srcport(0):
dnat nexthop(0):
dnat dstport(0):
route nexthop(0):
port valid(0):
route port(0):
bridge port(0):
deacclr(yes):
copy tocpu(yes):
syn toggle(0):
pri profile(0):
service code(0):
ip type(0):
src port(0):
dst port(0):
ip addr: 0.0.0.0
```

```
tree id(0):
operation done.
```

2.16.10   flow host add

Add one flow entry and one host entry together by key or index.

flow host add <*add_mode*>

Syntax description

Parameter	Description
<add_mode>	0 – key base 1 – index based
[entry id]	Specifies the entry index. The range is 0-4095.
[entry type]	Specifies the entry type. 1 – IPv4 5 tuple 2 – IPv6 5 tuple 4 – IPv4 3 tuple 8 – IPv6 3 tuple
[host addr type]	0 – souce IP 1 – destination IP
[host addr index]	Specifies the host addr index. The range is 0-8k.
[protocol]	1 – TCP 2 – UDP 3 – UDP-lite 0 – Others
[agetime]	Specifies the aging time. The range is 0-3.
[src intf valid]	Valid flag to indicate whether the source interface index takes effect.
[src intf index]	Specifies the souce interface entry index. The range is 0-255.
[fwd type]	Specifies the forward type: snat/dnat/route/bridge.
[snat nexthop]	Specifies the SNAT nexthop. The range is 0-4k.
[snat srcport]	Specifies the SNAT L4 translation source port.
[dnat nexthop]	Specifies the DNAT nexthop. The range is 0-4k.
[dnat dstport]	Specifies the DNAT L4 translation destination port.
[route nexthop]	Specifies the route nexthop. The range is 0-4k.
[port valid]	Valid flag to indicate whether the route port takes effect.
[route port]	Specifies the route port. The range is 0-255.
[bridge port]	Specifies the bridge port. The range is 0-255.
[deacclr]	Enables or disables de-acceleration.
[copy tocpu]	Enables or disables copy to CPU.
[syn toggle]	Specifies the sync toggle value. The range is 0-1.

Parameter	Description
[pri profile]	Specifies the profile index for QoS mapping. The range is 0-31.
[service code]	Specifies the service code. The range is 0-255.
[ip type]	0 – IPv4 1 – IPv6
[src port]	Specifies the L4 source port.
[dst port]	Specifies the L4 destination port.
[ip addr]	IP address.
[tree id]	Specifies the tree ID for NSS FW. The range is 0-16M.
[entryid]	Specifies the entry index. The range is 0-6143.
[entryflags]	Specifies the flag. 1 – IPv4 uni 2 – IPv6 uni 8 – IPv4 multi 0x10 – IPv6 multi
[entrystatus]	Specifies the status.
[ip4 addr]	Specifies the IPv4 address.
[ip6 addr]	Specifies the IPv6 address.
[mac addr]	Not supported in IPQ60xx.
[interface id]	Not supported in IPQ60xx.
[load_balance num]	Not supported in IPQ60xx.
[vrf id]	Not supported in IPQ60xx.
[port id]	Not supported in IPQ60xx.
[action]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[counter]	Not supported in IPQ60xx.
[dst info]	Specifies the destination info for route.
[sync toggle]	Specifies the sync toggle value. The range is 0-1.
[lan wan]	Specifies LAN or WAN this IP entry belongs to.

Examples

The following example is adding the L3 unicast flow for snat together with host: source IP 192.168.1.10, destination IP 192.168.2.10, source port 63 destination port 63, translation port 1.

```
dev0@qca>flow  host add 0
entry id(0):
entry type(0): 1
host addr type(0):
host addr index(0):
protocol(0): 1
agetime(0): 3
```

```
src intf valid(0):
src intf index(0):
fwd type(0): 1
snat nexthop(0): 1
snat srcport(0): 1
dnat nexthop(0):
dnat dstport(0):
route nexthop(0):
port valid(0):
route port(0):
bridge port(0):
deacclr(yes):
copy tocpu(yes):
syn toggle(0):
pri profile(0):
service code(0):
ip type(0):
src port(0): 63
dst port(0): 63
ip addr: 192.168.2.10
tree id(0):
entryid(0):
entryflags(0x1):
entrystatus(0): 1
ip4 addr: 192.168.1.10
mac addr: 00-00-00-00-00-00
interface id(0):
load_balance num(0):
vrf id(0):
port id(0):
action(forward):
mirror(no):
counter(no):
dst info(0):
sync toggle(0):
lan wan(0):
[entry_id]:0xb78 [entry_type]:0x1 [host_addr_type]:0x0 [host_addr_index]:0x0
[protocol]:0x1 [agetime]:0x3 [src_intf_valid]:0x0 [src_intf_index]:0x0
[fwd_type]:0x1
[snat_nexthop]:0x1 [snat_srcport]:0x1 [dnat_nexthop]:0x0 [dnat_dstport]:0x0
[route_nexthop]:0x0
[port_valid]:0x0 [route_port]:0x0 [bridge_port]:0x0 [de_acclr]:0x0
[copy_tocpu]:0x0
[syn_toggle]:0x0 [pri_profile]:0x0 [sevice_code]:0x0 [ip_type]:0x0
[src_port]:0x3f [dst_port]:0x3f [tree_id]:0x0
[ip_addr]:192.168.2.10
[pkt]:0x0 [byte]:0x0
```

```
[entryid]:0x210  [entryflags]:0x1  [entrystatus]:0x1
[ip_addr]:192.168.1.10  [mac_addr]:00-00-00-00-00-00
[interfaceid]:0x0  [portid]:0x0
[load_balance num]:0x0  [vrfid]:0x0  [action]:FORWARD
[mirror]:Disable
[couter]:Disable
[pppoe]:Disable
[lan_wan]:0x0  [sync_toggle]:0x0  [dst_info]:0x0
[vsi]:0x0
operation done.
```

2.16.11   flow host get

Get the flow entry and host entry together by key or index.

flow host get <*get_mode*>

Syntax description

Parameter	Description
<get_mode>	0 – key base 1 – index based
[entry id]	Specifies the entry index. The range is 0-4095.
[entry type]	Specifies the entry type. 1 – IPv4 5 tuple 2 – IPv6 5 tuple 4 – IPv4 3 tuple 8 – IPv6 3 tuple
[host addr type]	0 – souce IP 1 – destination IP
[host addr index]	Specifies the host addr index. The range is 0-8k.
[protocol]	1 – TCP 2 – UDP 3 – UDP-lite 0 – Others
[agetime]	Specifies the aging time. The range is 0-3.
[src intf valid]	Valid flag to indicate whether the source interface index takes effect.
[src intf index]	Specifies the souce interface entry index. The range is 0-255.
[fwd type]	Specifies the forward type: snat/dnat/route/bridge.
[snat nexthop]	Specifies the SNAT nexthop. The range is 0-4k.
[snat srcport]	Specifies the SNAT L4 translation source port.
[dnat nexthop]	Specifies the DNAT nexthop. The range is 0-4k.
[dnat dstport]	Specifies the DNAT L4 translation destination port.
[route nexthop]	Specifies the route nexthop. The range is 0-4k.

Parameter	Description
[port valid]	Valid flag to indicate whether the route port takes effect.
[route port]	Specifies the route port. The range is 0-255.
[bridge port]	Specifies the bridge port. The range is 0-255.
[deacclr]	Enables or disables de-acceleration.
[copy tocpu]	Enables or disables copy to CPU.
[syn toggle]	Specifies the sync toggle value. The range is 0-1.
[pri profile]	Specifies the profile index for QoS mapping. The range is 0-31.
[service code]	Specifies the service code. The range is 0-255.
[ip type]	0 – IPv4 1 – IPv6
[src port]	Specifies the L4 source port.
[dst port]	Specifies the L4 destination port.
[ip addr]	IP address.
[tree id]	Specifies the tree ID for NSS FW. The range is 0-16M.
[entryid]	Specifies the entry index. The range is 0-6143.
[entryflags]	Specifies the flag. 1 – IPv4 uni 2 – IPv6 uni 8 – IPv4 multi 0x10 – IPv6 multi
[entrystatus]	Specifies the status.
[ip4 addr]	Specifies the IPv4 address.
[ip6 addr]	Specifies the IPv6 address.
[mac addr]	Not supported in IPQ60xx.
[interface id]	Not supported in IPQ60xx.
[load_balance num]	Not supported in IPQ60xx.
[vrf id]	Not supported in IPQ60xx.
[port id]	Not supported in IPQ60xx.
[action]	Not supported in IPQ60xx.
[mirror]	Not supported in IPQ60xx.
[counter]	Not supported in IPQ60xx.
[dst info]	Specifies the destination info for route.
[sync toggle]	Specifies the sync toggle value. The range is 0-1.
[lan wan]	Specifies LAN or WAN this IP entry belongs to.

Examples

The following example is getting the L3 unicast flow for snat together with host by key.

```
dev0@qca>flow host get 0
entry id(0):
entry type(0): 1
host addr type(0):
host addr index(0):
protocol(0): 1
agetime(0):
src intf valid(0):
src intf index(0):
fwd type(0): 1
snat nexthop(0): 1
snat srcport(0): 1
dnat nexthop(0):
dnat dstport(0):
route nexthop(0):
port valid(0):
route port(0):
bridge port(0):
deacclr(enable):
copy tocpu(enable):
syn toggle(0):
pri profile(0):
service code(0):
ip type(0):
src port(0): 63
dst port(0): 63
ip addr: 192.168.2.10
tree id(0):
entryid(0):
entryflags(0x1):
entrystatus(0): 1
ip4 addr: 192.168.1.10
mac addr: 00-00-00-00-00-00
interface id(0):
load_balance num(0):
vrf id(0):
port id(0):
action(forward):
mirror(no):
counter(no):
dst info(0):
sync toggle(0):
lan wan(0):
[entry_id]:0xb78 [entry_type]:0x1 [host_addr_type]:0x0
[host_addr_index]:0x210
```

```
[protocol]:0x1 [agetime]:0x3 [src_intf_valid]:0x0 [src_intf_index]:0x0
[fwd_type]:0x1
[snat_nexthop]:0x1 [snat_srcport]:0x1 [dnat_nexthop]:0x0 [dnat_dstport]:0x0
[route_nexthop]:0x0
[port_valid]:0x0 [route_port]:0x0 [bridge_port]:0x0 [de_acclr]:0x0
[copy_tocpu]:0x0
[syn_toggle]:0x0 [pri_profile]:0x0 [sevice_code]:0x0 [ip_type]:0x0
[src_port]:0x3f [dst_port]:0x3f [tree_id]:0x0
[ip_addr]:192.168.2.10
[pkt]:0x0 [byte]:0x0
[entryid]:0x210  [entryflags]:0x1  [entrystatus]:0x0
[ip_addr]:0.0.0.0  [mac_addr]:00-00-00-00-00-00
[interfaceid]:0x0  [portid]:0x0
[load_balance num]:0x0  [vrfid]:0x0  [action]:FORWARD
[mirror]:Disable
[couter]:Disable
[pppoe]:Disable
[lan_wan]:0x0  [sync_toggle]:0x0  [dst_info]:0x0
[vsi]:0x0
operation done.
```

2.16.12   flow host del

Delete the flow entry and host entry together by key or index.

flow host del <*del_mode*>

Syntax description

Parameter	Description
<del_mode>	0 – key base 1 – index based
[entry id]	Specifies the entry index. The range is 0-4095.
[entry type]	Specifies the entry type. 1 – IPv4 5 tuple 2 – IPv6 5 tuple 4 – IPv4 3 tuple 8 – IPv6 3 tuple
[host addr type]	0 – souce IP 1 – destination IP
[host addr index]	Specifies the host addr index. The range is 0-8k.
[protocol]	1 – TCP 2 – UDP 3 – UDP-lite 0 – Others
[agetime]	Specifies the aging time. The range is 0-3.

Parameter	Description
[src intf valid]	Valid flag to indicate whether the source interface index takes effect.
[src intf index]	Specifies the souce interface entry index. The range is 0-255.
[fwd type]	Specifies the forward type: snat/dnat/route/bridge.
[snat nexthop]	Specifies the SNAT nexthop. The range is 0-4k.
[snat srcport]	Specifies the SNAT L4 translation source port.
[dnat nexthop]	Specifies the DNAT nexthop. The range is 0-4k.
[dnat dstport]	Specifies the DNAT L4 translation destination port.
[route nexthop]	Specifies the route nexthop. The range is 0-4k.
[port valid]	Valid flag to indicate whether the route port takes effect.
[route port]	Specifies the route port. The range is 0-255.
[bridge port]	Specifies the bridge port. The range is 0-255.
[deacclr]	Enables or disables de-acceleration.
[copy tocpu]	Enables or disables copy to CPU.
[syn toggle]	Specifies the sync toggle value. The range is 0-1.
[pri profile]	Specifies the profile index for QoS mapping. The range is 0-31.
[service code]	Specifies the service code. The range is 0-255.
[ip type]	0 – IPv4 1 – IPv6
[src port]	Specifies the L4 source port.
[dst port]	Specifies the L4 destination port.
[ip addr]	IP address.
[tree id]	Specifies the tree ID for NSS FW. The range is 0-16M.
[entryid]	Specifies the entry index. The range is 0-6143.
[entryflags]	Specifies the flag. 1 – IPv4 uni 2 – IPv6 uni 8 – IPv4 multi 0x10 – IPv6 multi
[entrystatus]	Specifies the status.
[ip4 addr]	Specifies the IPv4 address.
[ip6 addr]	Specifies the IPv6 address.
[mac addr]	Not supported in IPQ60xx.
[interface id]	Not supported in IPQ60xx.
[load_balance num]	Not supported in IPQ60xx.
[vrf id]	Not supported in IPQ60xx.
[port id]	Not supported in IPQ60xx.
[action]	Not supported in IPQ60xx.

Parameter	Description
[mirror]	Not supported in IPQ60xx.
[counter]	Not supported in IPQ60xx.
[dst info]	Specifies the destination info for route.
[sync toggle]	Specifies the sync toggle value. The range is 0-1.
[lan wan]	Specifies LAN or WAN this IP entry belongs to.

Examples

The following example is deleting the L3 unicast flow for snat together with host by index.

```
dev0@qca>flow host del 1
entry id(0): 0xb78
entry type(0): 1
host addr type(0):
host addr index(0):
protocol(0):
agetime(0):
src intf valid(0):
src intf index(0):
fwd type(0):
snat nexthop(0):
snat srcport(0):
dnat nexthop(0):
dnat dstport(0):
route nexthop(0):
port valid(0):
route port(0):
bridge port(0):
deacclr(enable):
copy tocpu(enable):
syn toggle(0):
pri profile(0):
service code(0):
ip type(0):
src port(0):
dst port(0):
ip addr: 0.0.0.0
tree id(0):
entryid(0): 0x210
entryflags(0x1):
entrystatus(0): 1
ip4 addr: 0.0.0.0
mac addr: 00-00-00-00-00-00
interface id(0):
load_balance num(0):
vrf id(0):
```

```
port id(0):
action(forward):
mirror(no):
counter(no):
dst info(0):
sync toggle(0):
lan wan(0):
operation done.
```

2.16.13   flow global set

Set the flow global configuration.

flow global set

Syntax description

Parameter	Description
[src_intf_check_action]	Specifies the action for source interface check fail.
[src_intf_deacclr_en]	Enables or disables the source interface check fail de-acceleration.
[service_loop en]	Enables or disables the service code loop check.
[service_loop action]	Specifies the action for service code loop check fail.
[service_loop_deacclr_en]	Enables or disables the service code loop de-acceleration.
[flow_deacclr_action]	Specifies the action for flow de-acceleration.
[sync_mismatch_action]	Specifies the action for sync toggle mismatch .
[sync_mismatch_deacclr_en]	Enables or disables the sync toggle mismatch de-acceleration.
[hash_mode_0]	Specifies the hash mode 0. The range is 0-2.
[hash_mode_1]	Specifies the hash mode 1. The range is 0-2.
[flow_mismatch_copy_escape_en]	Specifies the flow mismatch action for copy escape enabled or not.

Examples

The following example is setting the flow global configuration.

```
dev0@qca>flow global set
src_intf_check_action(forward): drop
src_intf_deacclr_en(no):
service_loop_en(no):
servcie_loop_action(forward): drop
service_loop_deacclr_en(no):
flow_deacclr_action(forward):
sync_mismatch_action(forward):
sync_mismatch_deacclr_en(no):
hash_mode)0(0):
hash_mode_1(0): 1
```

```
flow_mismatch_copy_escape_en(no):
operation done.
```

2.16.14   flow global get

Get the flow global configuration.

flow global get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the flow global configuration.

```
dev0@qca>flow global get
[src_intf_check_action]:0x1 [src_intf_check_deacclr_en]:0x0
[service_loop_en]:0x0 [service_loop_action]:0x1 [service_loop_deacclr_en]:0x0
[flow_deacclr_action]:0x0 [sync_mismatch_action]:0x0
[sync_mismatch_deacclr_en]:0x0 [hash_mode_0]:0x0 [hash_mode_1]:0x1
[flow_mismatch_copy_escape_en]:0x0

operation done.
```

2.17   Service code

The service code is for internal packet property and performs some special actions during packet transmitting.

2.17.1   servcode config set

Set a service code config based on index.

servcode config set <servcode_index>

Syntax description

Parameter	Description
<servcode_index>	Specifies the service code index. The range is 0-255.
[destport_en]	Enables or disables the matching dest port ID.
[destport_id]	Specifies the dest port ID.
[bypass_bitmap_0]	Specifies bypass_bitmap, refer to the following bypass bitmap definition Bitmap: IN_VLAN_TAG_FMT_CHECK_BYP = 0, IN_VLAN_MEMBER_CHECK_BYP, IN_VLAN_XLT_BYP,

Parameter	Description
	MY_MAC_CHECK_BYP, DIP_LOOKUP_BYP, FLOW_LOOKUP_BYP = 5, FLOW_ACTION_BYP, ACL_BYP, FAKE_MAC_HEADER_BYP, SERVICE_CODE_BYP, WRONG_PKT_FMT_L2_BYP = 10, WRONG_PKT_FMT_L3_IPV4_BYP, WRONG_PKT_FMT_L3_IPV6_BYP, WRONG_PKT_FMT_L4_BYP, FLOW_SERVICE_CODE_BYP, ACL_SERVICE_CODE_BYP = 15, FAKE_L2_PROTO_BYP, PPPOE_TERMINATION_BYP, DEFAULT_VLAN_BYP, IN_VLAN_ASSIGN_FAIL_BYP = 24, SOURCE_GUARD_BYP, MRU_MTU_CHECK_BYP, FLOW_SRC_CHECK_BYP, FLOW_QOS_BYP,
[bypass_bitmap_1]	Specifies bypass_bitmap, refer to the following bypass bitmap definition Bitmap: EG_VLAN_MEMBER_CHECK_BYP = 0, EG_VLAN_XLT_BYP, EG_VLAN_TAG_FMT_CTRL_BYP, FDB_LEARN_BYP, FDB_REFRESH_BYP, L2_SOURCE_SEC_BYP, MANAGEMENT_FWD_BYP, BRIDGING_FWD_BYP, IN_STP_FLTR_BYP, EG_STP_FLTR_BYP, SOURCE_FLTR_BYP, POLICER_BYP, L2_PKT_EDIT_BYP, L3_PKT_EDIT_BYP, ACL_POST_ROUTING_CHECK_BYP, PORT_ISOLATION_BYP, PRE_ACL_QOS_BYP, POST_ACL_QOS_BYP, DSCP_QOS_BYP,

Parameter	Description
	PCP_QOS_BYP,
	PREHEADER_QOS_BYP,
[bypass_bitmap_2]	Specifies bypass_bitmap, refer to the following bypass bitmap definition
	Bitmap:
	RX_VLAN_COUNTER_BYP = 0,
	RX_COUNTER_BYP,
	TX_VLAN_COUNTER_BYP,
	TX_COUNTER_BYP,
[direction]	Specifies the direction of config. If dest is vp, fill it in dest_info or src_info.
	0 – dest
	1 – src
[field_update_bitmap]	Specifies the field update bitmap, refer to the following field update bitmap definition.
	Bitmap:
	FLD_UPDATE_CAPWAP_EN = 0, /*only for IP197*/
	FLD_UPDATE_DIRECTION, /*only for IP197*/
	FLD_UPDATE_DEST_INFO,
	FLD_UPDATE_SRC_INFO,
	FLD_UPDATE_INT_PRI,
	FLD_UPDATE_SERVICE_CODE,
	FLD_UPDATE_HASH_FLOW_INDEX,
	FLD_UPDATE_FAKE_L2_PROT_EN, /*only for IP197*/
[next_servicecode]	Specifies the next service code.
[hardwareservices]	Specifies the hardware server of IP-197.
[offsetselection]	Specifies the offset selection value of IP-197.
	0 – l3_offset
	1 – l4_offset

Examples

The following example is setting a service code config based on index.

```
dev0@qca>servcode config set 1
destport_en (yes): n
destport_id (0):
bypass_bitmap[0](0): 0xf
bypass_bitmap[1](0):
bypass_bitmap[2](0):
direction(0):
field_update_bitmap(0):
next_servicecode(0):
hardwareservices(0):
offsetselection(0):
operation done.
```

2.17.2 servcode config get

Get a service code config based on index.

servcode config get *<servcode_index>*

Syntax description

Parameter	Description
<servcode_index>	Specifies service code index. The range is 0-255.

Examples

The following example is getting a service code config based on index.

```
dev0@qca>servcode config get 1
destport_en:DISABLE   destport_id:0
bypass_bitmap[0]:0xf  bypass_bitmap[1]:0x0  bypass_bitmap[2]:0x0
direction:0
field_update_bitmap:0x0  next_servicecode:0
hardwareservices:0  offsetselection:0
operation done.
```

2.17.3 servcode loopcheck set

Set a service code loopcheck status.

servcode loopcheck set *<enable|disable>*

Syntax description

Parameter	Description
<enable|disable>	Enables or disables the L2 loopcheck.

Examples

The following example is setting a service code loopcheck status.

```
dev0@qca>servcode loopcheck set disable
operation done.
```

2.17.4 servcode loopcheck get

Get a service code loopcheck status.

servcode loopcheck get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting a service code loopcheck status.

```
dev0@qca>servcode loopcheck get
[Enable]:DISABLE
operation done.
```

2.18   ACL

The ACL commands are designed for ACL rule configurartion. The ACL commands include creating/ destroying ACL list, adding/deleting ACL rule into ACL list, and binding/unbinding ACL list on a Specifies object like as physical port, virtual port, service code and L3 interface. Display an ACL rule detail is also supported.

2.18.1   acl list create

Create an ACL list with specified list ID and list priority.

acl list create *<list_id> <list_pri>*

Syntax description

Parameter	Description
<list_id>	Specifies a list ID when creating an ACL list. The range is 0-511.
<list_pri>	Specifies the priority of the list. The range is 0-63, higher value with higer priority.

Examples

The following example is creating ACL list 10 and its prioirty is 1.

```
dev0@qca>acl list create 10 1
operation done.
```

2.18.2   acl list destroy

Delete an ACL list with specified list ID.

acl list destroy *<list_id>*

Syntax description

Parameter	Description
<list_id>	Specifies a list ID when deleting an ACL list. The range is 0-511.

Examples

The following example is deleting ACL list 10 and its rules.

```
dev0@qca>acl list destroy 10
operation done.
```

2.18.3   acl rule add

Add an ACL rule into a specified list ID, and it prompts interactive commands for ACL fields' configuration and action of the ACL rule.

acl rule add <*list_id*> <*rule_id*> <*rule_num*>

Syntax description

Parameter	Description
<*list_id*>	Specifies the list ID into which the ACL rule will be added. The range is 0-511.
<*rule_id*>	Specifies the rule ID. The range is 0-7
<*rule_num*>	Specifies the number of ACL rule which will be added. It shoud always be 1.
[is_post_routing]	The ACL rule is post-routing or pre-routing.
[priority]	Specify the priority of the ACL rule.
[acl_pool]	Specify the ACL pool which the ACL rule belongs to. The ACL rules in different ACL pool can be matched at same time. Two ACL pools are supported on IPQ60xx.
[rule_type]	Specify the type of the ACL rule. It can be MAC, IP4, IP6 and UDF. It decides the following parameters in the interactive command.
[fake mac header field]	Specify the ACL rule to match the fake MAC header or not.
[SNAP/LLC other field]	Specify the ACL rule to match SNAP or LLC packets.
[ethernet/other field]	Specify the ACL rule to match Ethernet or other type packets.
[IP/NON-IP field]	Specify the ACL rule to match IP packets or NON-IP packets.
[IPv4/IPv6 field]	Specify the ACL rule to match IPv4 packets or IPv6 packets.
[mac dst addr field]	Specify the ACL rule to match destination MAC or not.
[mac src addr field]	Specify the ACL rule to match source MAC or not.
[ethernet type field]	Specify the ACL rule to match Ethernet type or not.
[vlanid field]	Specify the ACL rule to match VLAN ID or not. Note: Not supported in IPQ60xx.
[vlan tagged field]	Specify the ACL rule to match tagged packets or not. Note: Not supported in IPQ60xx.
[up field]	Specify the ACL rule to match PCP of packets or not. Note: Not supported in IPQ60xx.
[cfi field]	Specify the ACL rule to match CFI of packets or not. Note: Not supported in IPQ60xx.
[svlan tagged field]	Specify the ACL rule to match SVLAN tagged packets or not.
[stag vid field]	Specify the ACL rule to match S-TAG VLAN ID or not.

Parameter	Description
[stag pri field]	Specify the ACL rule to match S-TAG priority or not.
[stag dei field]	Specify the ACL rule to match S-TAG DEI or not.
[cvlan tagged field]	Specify the ACL rule to match CVLAN tagged packets or not.
[ctag vid field]	Specify the ACL rule to match C-TAG VLAN ID or not.
[ctag pri field]	Specify the ACL rule to match C-TAG priority or not.
[ctag cfi field]	Specify the ACL rule to match C-TAG CFI or not.
[vsi valid field]	Specify the ACL rule to match packets with valid VSI or not.
[vsi field]	Specify the ACL rule to match VSI of packets or not.
[pppoe session id field]	Specify the ACL rule to match PPPoE session ID or not.
[user define field]	Specify the ACL rule to match user defined fields of port or not. Note: Not supported in IPQ60xx.
[udf0]	Specify the ACL rule to match user defined fields or not.
[udf1]	Specify the ACL rule to match user defined fields or not.
[udf2]	Specify the ACL rule to match user defined fields or not.
[udf3]	Specify the ACL rule to match user defined fields or not.
[rule inverse]	Specify the ACL rule to inverse match or not. Note: Not supported in IPQ60xx.
[permit]	Specify the ACL rule action as forward or not.
[deny]	Specify the ACL rule action as drop or not.
[rdt to cpu]	Specify the ACL rule action as redirect to CPU or not.
[rdt to port]	Specify the ACL rule action as redirect to a port or not.
[copy to cpu]	Specify the ACL rule action as copy to CPU or not.
[mirror]	Specify the ACL rule action to enable mirror or not.
[remark dscp]	Specify the ACL rule action to remark dscp or not.
[remark up]	Specify the ACL rule action to remark PCP or not. Note: Not supported in IPQ60xx.
[remark queue]	Specify the ACL rule action as directing packet to a queue.
[modify vlan]	Specify the ACL rule action to remark VLAN ID or not. Note: Not supported in IPQ60xx.
[nest vlan]	Specify the ACL rule action to remark nest VLAN ID or not. Note: Not supported in IPQ60xx.
[stag vid]	Specify the S-TAG VLAN ID.
[ctag vid]	Specify the C-TAG VLAN ID.
[lookup vid change]	Specify the ACL rule action to remark look up VLAN ID or not. Note: Not supported in IPQ60xx.
[stag vid change]	Specify the ACL rule action to remark S-TAG VLAN ID or not.
[stag pri change]	Specify the ACL rule action to remark S-TAG PCP or not.

Parameter	Description
[stag dei change]	Specify the ACL rule action to remark S-TAG DEI or not.
[ctag vid change]	Specify the ACL rule action to remark C-TAG VLAN ID or not.
[ctag pri change]	Specify the ACL rule action to remark C-TAG PCP or not.
[ctag cfi change]	Specify the ACL rule action to remark C-TAG CFI or not.
[policer en]	Specify the ACL rule action to enable policer or not. Note: Not supported in IPQ60xx.
[wcmp en]	Specify the ACL rule action to enable wcmp or not. Note: Not supported in IPQ60xx.
[arp en]	Specify the ACL rule action to enable arp or not. Note: Not supported in IPQ60xx.
[policy en]	Specify the ACL rule action to enable HNAT or not. Note: Not supported in IPQ60xx.
[eg bypass]	Specify the ACL rule action to bypass egress VLAN check or not. Note: Not supported in IPQ60xx.
[trigger intr]	Specify the ACL rule action to trigger interrupt or not. Note: Not supported in IPQ60xx.
[bypass bitmap change]	Specify the ACL rule action to bypass some features or not.
[enqueue priority change]	Specify the ACL rule action to remark the priority of enqueuer or not.
[internal dp change]	Specify the ACL rule action to remark internal drop precedence or not.
[service code change]	Specify the ACL rule action to remark service code or not.
[cpu code change]	Specify the ACL rule action to remark CPU code or not.
[sync toggle]	Specify the ACL rule action to enable sync toggle or not.
[meta data enable]	Specify the ACL rule action to enable meta data or not.
[qos res prec]	Specify the ACL precedence value.

Examples

The following example is adding ACL rule 0 into ACL list 10 to match destination MAC with 00-00-00-00-00-11, action is copying to CPU.

```
dev0@qca>acl rule add 10 0 1
post routing enable(no):
priority(0x0): 1
acl pool(0x0):
rule type: mac
Fake mac header field(no):
SNAP/LLC other field(no):
ethernet/other field(no):
```

```
IP/NON-IP field(no):
IPv4/IPv6 field(no):
mac dst addr field(no): yes
dst mac addr: 00-00-00-00-00-11
dst mac addr mask: ff-ff-ff-ff-ff-ff
mac src addr field(no):
ethernet type field(no):
vlanid field(no):
vlan tagged field(no):
up field(no):
cfi field(no):
svlan tagged field(no):
stag vid field(no):
stag pri field(no):
stag dei field(no):
cvlan tagged field(no):
ctag vid field(no):
ctag pri field(no):
ctag cfi field(no):
vsi valid field(no):
vsi field(no):
pppoe session id field(no):
user define field(no):
udf0(no):
udf1(no):
udf2(no):
udf3(no):
rule inverse(no):
permit(yes):
deny(no):
rdt to cpu(no):
rdt to port(no):
copy to cpu(no): yes
mirror(no):
remark dscp(no):
remark up(no):
remark queue(no):
modify vlan(no):
nest vlan(no):
stag vid(0):
ctag vid(0):
lookup vid change(no):
stag vid change(no):
stag pri change(no):
stag dei change(no):
ctag vid change(no):
ctag pri change(no):
```

80-YC320-3 Rev. F   Confidential – Qualcomm Technologies, Inc. and/or its affiliated companies – May Contain Trade Secrets   181

May contain U.S. and international export controlled information

```
ctag cfi change(no):
policer en(no):
wcmp en(no):
arp en(no):
policy en(no):
eg bypass(no):
trigger intr(no):
bypass bitmap change(no):
enqueue priority change(no):
internal dp change(no):
service code change(no):
cpu code change(no):
sync toggle(no):
meta data enable(no):
qos res prec(0):
operation done.
```

2.18.4   acl rule del

Delete an ACL rule with specified list ID and rule ID.

acl rule del *<list_id> <rule_id> <rule_num>*

Syntax description

Parameter	Description
<list_id>	Specifies the list ID which the ACL rule belongs to. The range is 0-511.
<rule_id>	Specifies the rule ID to be deleted. The range is 0-7.
<rule_num>	Specifies the number of ACL rule which will be deleted. It must always be 1.

Examples

The following example is deleting ACL list 10 and its rules.

```
dev0@qca>acl rule del 10 0 1
operation done.
```

2.18.5   acl rule query

Query an ACL rule with specified list ID and rule ID.

acl rule query *<list_id> <rule_id> <rule_num>*

Syntax description

Parameter	Description
<list_id>	Specifies the list ID which the ACL rule belongs to. The range is 0-511.
<rule_id>	Specifies the rule ID to be deleted. The range is 0-7.
<rule_num>	Specifies the number of ACL rule which will be deleted. It is always 1.

Examples

The following example is querying ACL list 10 and rule 0.

```
dev0@qca>acl rule query 10 0 1
[rule_type]:mac
[priority]:0x0
[post_routing_en]:0x0
[acl_pool]:0x0
[mac_dst_addr]:00-00-00-00-00-01  [mac_dst_addr_mask]:ff-ff-ff-ff-ff-ff
[deny]:yes
[stag_fmt]:0
[stag_vid]:0
[ctag_fmt]:0
[ctag_vid]:0
[syn_toggle]:no
[meta_data]:no
[qos_res_prec]:0
[match_counter]:0
[match_bytes]:0
operation done.
```

2.18.6   acl list bind

Apply an ACL list to a specified object.

acl list bind *<list_id> <direction> <object type> <object index>*

Syntax description

Parameter	Description
<list_id>	Specifies a list ID when applying an ACL list. The range is 0-511.
<direction>	Specifies appling an ACL list to ingress or egress. 0 – ingress direction 1 – egress direction It is always 0 because only ingress ACL is supported.
<object type>	Specifies the object type which will be applied to the ACL list. 0 – physical port and virtual port 1 – port bitmap 2 – service code 3 – L3 interface
<object index>	Specifies the object index.

Examples

The following example is applying ACL list 10 and its rules to port 1.

dev0@qca>acl list bind 10 0 0 1

operation done.

2.18.7 acl list unbind

Unapply an ACL list to a specified object.

acl list unbind *<list_id> <direction> <object type> <object index>*

Syntax description

Parameter	Description
<list_id>	Specifies a list ID when unapplying an ACL list. The range is 0-511.
<direction>	Specifies unapplying an ACL list to ingress or egress. 0 – ingress 1 – egress It is always 0 because only ingress ACL is supported.
<object type>	Specifies the object type which will be unapplied to the ACL list. 0 – port 1 – port bitmap 2 – service code 3 – L3 interface
<object index>	Specifies the object index.

Examples

The following example is unapplying ACL list 10 and its rules to port 1.

```
dev0@qca>acl list unbind 10 0 0 1
operation done.
```

2.18.8 acl udf set

Set user defined fields for ACL rule to match.

acl udf set *<packet type> <index> <udf base> <udf offset>*

Syntax description

Parameter	Description
<packet type>	Specifies the packet type of UDF. ■ non-IP ■ IPv4 ■ IPv6
<index>	Specifies the index of UDF. The range is 0-3.
<udf base>	Specifies the base of UDF.
<udf offset>	Specifies the offset of UDF.

Examples

The following example is setting UDF0 as start from L3 and offset is 12 for IPv4.

```
dev0@qca>acl udf set ipv4 0 l3 12
operation done.
```

2.18.9   acl udf get

Get user defined fields for ACL rule to match.

acl udf get <*packet type*> <*index*>

Syntax description

Parameter	Description
<*packet type*>	Specifies the packet type of UDF. ■ non-IP ■ IPv4 ■ IPv6
<*index*>	Specifies the index of UDF.

Examples

The following example is getting UDF0.

```
dev0@qca>acl udf get ipv4 0
[udf_type]:l3[udf_offset]:0xc
operation done.
```

2.19   Port control

The port_ctrl commands are designed to get or set the working status of PHY or MAC on a particular port, including setting or getting the duplex mode, speed mode, auto-negatiation capacity, interface mode, flow control status, fiber mode, and loopback mode.

2.19.1   port duplex set

Set the duplex mode on a specified port.

port duplex set <*port_id*> <*half|full*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*half|full*>	Specifies the duplex mode.

Examples

The following example is setting the duplex mode as full duplex mode based on port 1.

```
dev0@qca>port duplex set 1 full
operation done.
```

2.19.2   port duplex get

Get the duplex mode on a specified port.

port duplex get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the duplex mode based on port 1.

```
dev0@qca>port duplex get 1
[duplex]:FULL
operation done.
```

2.19.3   port speed set

Set the speed on a specified port.

port speed set <*port_id*> <*10|100|1000|2500|5000|10000*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<10|100|1000|2500|5000|10000>	Specifies the speed mode.

Examples

The following example is setting the speed as 1000Mbps based on port 1.

```
dev0@qca>port speed set 1 1000
operation done.
```

2.19.4   port speed get

Get the speed mode on a specified port.

port speed get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the speed mode based on port 1.

```
dev0@qca>port speed get 1
[speed]:1000(Mbps)
operation done.
```

2.19.5 port autoAdv set

Set the auto-negotiation capacity on a specified port.

port autoAdv set *<port_id>* *<cap_bitmap>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<cap_bitmap>	Specifies the bitmap of capacity: ■ bit0: 10M half, 10T_HD ■ bit1: 10M full, 10T_FD ■ bit2: 100M half, 100TX_HD ■ bit3: 100M full, 100TX_FD ■ bit9: 1000M full. 1000T_FD ■ bit10: 1000BX half, 1000F_HD ■ bit11: 1000BX full, 1000F_FD ■ bit12: 2500M full, 2500T_FD ■ bit13: 5000M full, 5000T_FD ■ bit14: 10000M full, 10000T_FD ■ bit15: 10G_ R_full, 10G_R_FD

Examples

The following example is setting the auto-negotiation capacity as 100TX_FD|100TX_HD|10T_HD| 10T_FD based on port 1.

```
dev0@qca>port autoadv set 1 0xf
operation done.
```

2.19.6 port autoAdv get

Get the auto-negotiation capacity on a specified port.

port autoAdv get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the auto-negotiation capacity based on port 1.

```
dev0@qca>port autoadv get 1
[autoneg]:100TX_FD|100TX_HD|10T_HD|10T_FD|
operation done.
```

2.19.7 port autoNeg enable

Enable the auto-negotiation on a specified port.

port autoneg enable *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is enabling the auto-negotiation based on port 1.

```
dev0@qca>port autoneg enable 1
operation done.
```

2.19.8 port autoNeg restart

Restart the auto-negotiation on a specified port.

port autoneg restart *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is restarting the auto-negotiation status based on port 1.

```
dev0@qca>port autoneg restart 1
operation done.
```

2.19.9 port autoNeg get

Get the auto-negotiation status on a specified port.

port autoneg get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the auto-negotiation status based on port 1.

```
dev0@qca>port autoneg get 1
[autoneg]:ENABLE
operation done.
```

2.19.10   port flowCtrl set

Set the flow control status on a specified port.

port flowctrl set <*port_id*> <*enable|disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable|disable*>	Enables or disables the flow control.

Examples

The following example is enabling the flow control based on port 1.

```
dev0@qca>port flowctrl set 1 enable
operation done.
```

2.19.11   port flowCtrl get

Get the flow control status on a specified port.

port flowctrl get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the flow control status based on port 1.

```
dev0@qca>port flowctrl get 1
[Flow control]:ENABLE
operation done.
```

2.19.12   port powersave set

Set the power saving mode on a specified port.

port powersave set <*port_id*> <*enable*|*disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable*|*disable*>	Enables or disables the power saving mode.

Examples

The following example is enabling the power saving mode based on port 1.

```
dev0@qca>port powersave set 1 enable
operation done.
```

2.19.13   port powersave get

Get the power saving mode of a port.

port powersave get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the power saving mode of port 1.

```
dev0@qca>port powersave get 1
[Powersave Status]:ENABLE
operation done.
```

2.19.14   port hibernate set

Set the hibernation mode on a specified port.

port hibernate set <*port_id*> <*enable*|*disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable*|*disable*>	Enables or disables the hibernation mode.

Examples

The following example is enabling the hibernation mode based on port 1.

```
dev0@qca>port hibernate set 1 enable
operation done.
```

2.19.15   port hibernate get

Get the hibernation mode on a specified port.

port hibernate get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the hibernation mode status based on port 1.

```
dev0@qca>port hibernate get 1
[Hibernate Status]:ENABLE
operation done.
```

2.19.16   port cdt run

Diagnose the cable on a specified port.

port cdt run <*port_id*> <*mdi_pair*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<mdi_pair>	Specifies the MDI pair. The range is 0-3.

Examples

The following example is diagnosing the cable of the second MDI pair based on port 1.

```
dev0@qca>port cdt run 1 1
[cable status]:OPENED[cable len]:1
operation done.
```

2.19.17   port txmacstatus set

Set the Tx status of mac on a specified port.

port txmacstatus set <*port_id*> <*enable*|*disable*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the Tx of MAC.

Examples

The following example is enabling the Tx of MAC based on port 1.

```
dev0@qca>port txmacstatus set 1 enable
operation done.
```

2.19.18   port txmacstatus get

Get the Tx status of MAC on a specified port.

port txmacstatus get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the Tx status of MAC based on port 1.

```
dev0@qca>port txmacstatus get 1
[Value]:ENABLE
operation done.
```

2.19.19   port rxmacstatus set

Set the Rx of MAC on a specified port.

port rxmacstatus set *<port_id>* *<enable\|disable>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the Rx status of MAC.

Examples

The following example is enabling the Rx of MAC based on port 1.

```
dev0@qca>port rxmacstatus set 1 enable
operation done.
```

2.19.20 port rxmacstatus get

Get the Rx status of MAC on a specified port.

port rxmacstatus get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the Rx status of MAC based on port 1.

```
dev0@qca>port rxmacstatus get 1
[Value]:ENABLE
operation done.
```

2.19.21 port txfcstatus set

Set the flow control of Tx on a specified port.

port txfcstatus set <*port_id*> <*enable|disable*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the flow control of Tx.

Examples

The following example is enabling the flow control of Tx based on port 1.

```
dev0@qca>port txfcstatus set 1 enable
operation done.
```

2.19.22 port txfcstatus get

Get the flow control status of Tx on a specified port.

port txfcstatus get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the flow control status of Tx based on port 1.

```
dev0@qca>port txfcstatus get 1
[Value]:ENABLE
operation done.
```

2.19.23   port rxfcstatus set

Set the flow control status of Rx on a specified port.

port rxfcstatus set <*port_id*> <*enable|disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable|disable*>	Enables or disables the flow control of Rx.

Examples

The following example is enabling the flow control of Rx based on port 1.

```
dev0@qca>port rxfcstatus set 1 enable
operation done.
```

2.19.24   port rxfcstatus get

Get the flow control status of Rx on a specified port.

port rxfcstatus get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the flow control status of Rx based on port 1.

```
dev0@qca>port rxfcstatus get 1
[Value]:ENABLE
operation done.
```

2.19.25   port linkstatus get

Get the link status on a specified port.

port linkstatus get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the link status based on port 1.

```
dev0@qca>port linkstatus get 1
[Status]:ENABLE
operation done
```

2.19.26   port macLoopback set

Set the loopback of MAC on a specified port.

port macloopback set *<port_id>* *<enable|disable>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the loopback of MAC.

Examples

The following example is enabling the loopback of MAC based on port 1.

```
dev0@qca>port macloopback set 1 enable
operation done.
```

2.19.27   port macLoopback get

Get the loopback status of MAC on a specified port.

port macloopback get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the loopback status of MAC based on port 1.

```
dev0@qca>port macloopback get 1
[Enable]:ENABLE
operation done.
```

2.19.28   port ieee8023az set

Set the EEE (Energy Efficient Ethernet) ability on a specified port.

port ieee8023az set <*port_id*> <*enable*|*disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable*|*disable*>	Enables or disables the EEE ability.

Examples

The following example is enabling the EEE ability based on port 1.

```
dev0@qca>port ieee8023az set 1 enable
operation done.
```

2.19.29   port ieee8023az get

Get the EEE ability on a specified port.

port ieee8023az get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the EEE ability status based on port 1.

```
dev0@qca>port ieee8023az get 1
[Enable]:ENABLE
operation done.
```

2.19.30   port crossover set

Set the crossover on a specified port.

port crossover set <*port_id*> <*auto*|*mdi*|*mdix*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*auto*|*mdi*|*mdix*>	Specifies the crossover mode.

Examples

The following example is setting the crossover mode as auto based on port 1.

```
dev0@qca>port crossover set 1 auto
operation done.
```

2.19.31   port crossover get

Get the crossover mode on a specified port.

port crossover get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the crossover mode based on port 1.

```
dev0@qca>port crossover get 1
[Crossover Mode]:AUTO
operation done.
```

2.19.32   port crossover status

Get the crossover mode currently on a specified port.

port crossover status <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the crossover mode currently based on port 1.

```
dev0@qca>port crossover status 1
[Crossover Status]:MDI
operation done.
```

2.19.33   port preferMedium set

Set the preferred medium on a specified port.

port preferMedium set <*port_id*> <*copper|fiber*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<copper|fiber>	Specifies the medium mode.

Examples

The following example is setting the preferred medium as copper based on port 5.

```
dev0@qca>port preferMedium set 5 copper
operation done.
```

2.19.34   port preferMedium get

Get the preferred medium on a specified port.

port mediumType get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the preferred medium based on port 5.

```
dev0@qca>port preferMedium get 5
[Prefer Medium]:FIBER
operation done.
```

2.19.35   port fiberMode set

Set the fiber mode on a specified port.

port fiberMode set *<port_id>* *<100fx\|1000bx\|10G-R>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<100fx|1000bx|10G-R>	Specifies the fiber mode.

Examples

The following example is setting the fiber mode as 100fx based on port 5.

```
dev0@qca>port fiberMode set 5 100fx
operation done
```

2.19.36   port fiberMode get

Get the fiber mode on a specified port.

port fiberMode get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the fiber mode based on port 5.

```
dev0@qca>port fibermode get 5
[Fiber Mode]:100FX
operation done
```

2.19.37   port localLoopback set

Set the local loopback on a specified port.

port localLoopback set <*port_id*> <*enable|disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable|disable*>	Enables or disables the local loopback.

Examples

The following example is enabling the local loopback based on port 1.

```
dev0@qca>port localLoopback set 1 enable
operation done.
```

2.19.38   port localLoopback get

Get the local loopback status on a specified port.

port localLoopback get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the local loopback status based on port 1.

```
dev0@qca>port localLoopback get 1
[Local Loopback Status]:ENABLE
operation done.
```

2.19.39   port remoteLoopback set

Set the remote loopback on a specified port.

port remoteLoopback set <*port_id*> <*enable*|*disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable*|*disable*>	Enables or disables the remote loopback.

Examples

The following example is enabling the remote loopback based on port 1.

```
dev0@qca>port remoteLoopback set 1 enable
operation done.
```

2.19.40   port remoteLoopback get

Get the remote loopback status on a specified port.

port remoteLoopback get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the remote loopback status based on port 1.

```
dev0@qca>port remoteLoopback get 1
[Remote Loopback Status]:ENABLE
operation done.
```

2.19.41   port reset set

Reset a specified port.

port reset set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is resetting port 1.

```
dev0@qca>port reset set 1
operation done.
```

2.19.42   port poweroff set

Power off a specified port.

port poweroff set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is powering off port 1.

```
dev0@qca>port poweroff set 1
operation done.
```

2.19.43   port poweron set

Power on a specified port.

port poweron set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is powering on port 1.

```
dev0@qca>port poweron set 1
operation done.
```

2.19.44   port magicFrameMac set

Set the MAC address of the WOL frame on a specified port.

port magicFrameMac set *<port_id>* *<mac_address>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<mac_address>	Specifies the MAC address of the WOL frame.

Examples

The following example is setting the MAC address of the WOL frame as aa-aa-bb-bb-cc-cc based on port 1.

```
dev0@qca>port magicFrameMac set 1 aa-aa-bb-bb-cc-cc
operation done.
```

2.19.45   port magicFrameMac get

Get the MAC address of the WOL frame on a specified port.

port magicFrameMac get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the MAC address of the WOL frame based on port 1.

```
dev0@qca>port magicFrameMac get 1
[Magic mac]aa-aa-bb-bb-cc-cc
operation done.
```

2.19.46   port phyid get

Get the PHY ID on a specified port.

port phyid get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the PHY ID based on port 1.

```
dev0@qca>port phyid get 1
[Org ID]:0x004d[Rev ID]:0xd0b1
operation done.
```

2.19.47   port wolstatus set

Set the WOL mode on a specified port.

port wolstatus set <*port_id*> <*enable|disable*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 1-6.
<*enable|disable*>	Enables or disables the WOL mode.

Examples

The following example is enabling the WOL mode based on port 1.

```
dev0@qca>port wolstatus set 1 ENABLE
operation done.
```

2.19.48   port wolstatus get

Get the WOL status on a specified port.

port wolstatus get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID, the range is 1-6.

Examples

The following example is getting the WOL status based on port 1.

```
dev0@qca>port wolstatus get  1
[Wol Status]:ENABLE
operation done.
```

2.19.49   port interfaceMode set

Set the interface mode on a specifies port.

port interfaceMode set <*port_id*> <*psgmii_baset|psgmii_bx1000|psgmii_fx100|psgmii_amdet| sgmii_baset|qsgmii|usxgmii|sgmii_plus|10gbase_r|sgmii_fiber|psgmii_fiber| interfacemode_max*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<psgmii_baset|psgmii_bx1000| psgmii_fx100|psgmii_amdet|sgmii_baset|qsgmii| usxgmii|sgmii_plus|10gbase_r|sgmii_fiber|psgmii_fiber| interfacemode_max>	Specifies the interface mode.

Examples

The following example is setting the interface mode as psgmii_baset based on port 5.

```
dev0@qca>port interfaceMode set 5 psgmii_baset
operation done.
```

2.19.50   port interfaceMode get

Get the interface mode on a specified port.

port interfaceMode get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the interface mode based on the port 5.

```
dev0@qca>port interfaceMode get 5
[Interface Mode]:PSGMII_BASET
operation done.
```

2.19.51   port interfaceMode apply

Set the interface mode on a specified device.

port interfaceMode apply

Syntax description

Parameter	Description
None	–

Examples

The following example is setting the interface mode based on device 0.

dev0@qca>port interfaceMode apply

operation done.

2.19.52   port mtu set

Set the MTU on a specified port.

port mtu set <*port_id*> <*mtu_size*> <*mtu_action*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
[mtu_size]	Specifies the MTU size.
[mtu_action]	Specifies the MTU action: ■ forward ■ drop ■ cpycpu ■ rdtcpu

Examples

The following example is setting the MTU size as 1518 and the MTU action as forwarding based on port 1.

```
dev0@qca>port mtu set 1
mtu_size(1514): 1518
mtu_action(forward): forward
operation done.
```

2.19.53   port mtu get

Get the MTU size and the MTU action on a specified port.

port mtu get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the MTU size and the MTU action based on port 1.

```
dev0@qca>port mtu get 1
[Port MTU]
mtu_size:0x5ee
mtu_action:forward
operation done.
```

2.19.54   port mru set

Set the MRU size and the MRU action on a specified port.

port mru set <*port_id*> <*mru_size*> <*mru_action*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
[mtu_size]	Specifies the MRU size.
[mtu_action]	Specifies the MRU action: ■ forward ■ drop ■ cpycpu ■ rdtcpu

Examples

The following example is setting the MRU size as 1518 and the MRU action as forwarding based on port 1.

```
dev0@qca>port mru set 1
mru_size(1514): 1518
mru_action(forward): forward
operation done.
```

2.19.55   port mru get

Get the MRU size and the MRU action on a specified port.

port mru get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the MRU size and the MRU action base on port 1.

```
dev0@qca>port mru get 1
[Port MRU]
mru_size:0x5ee
mru_action:foward
operation done.
```

2.19.56   port framemaxsize set

Set the maximum size of the frame on a specified port.

port framemaxsize set *<port_id> <frame_max_size>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<frame_max_size>	Specifies the maximum size of the frame.

Examples

The following example is setting the maximum size as 1518 based on port 1.

```
dev0@qca>port framemaxsize set 1 1518
operation done.
```

2.19.57   port framemaxsize get

Get the maximum size of the frame on a specified port.

port framemaxsize set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID, the range is 1-6.

Examples

The following example is getting the maximum size of the frame based on port 1.

```
port framemaxsize get 1
[frameMaxSize]:0x5ee
operation done.
```

2.19.58   port srcfilter set

Set the source filtering on a specified port.

port srcfilter set *<port_id> <enable|disable>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the source filtering.

Examples

The following example is enabling the source filtering based on port 1.

```
dev0@qca>port srcfilter set 1 enable
operation done.
```

2.19.59   port srcfilter get

Get the source filtering status on a specified port.

port srcfilter get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the source filtering status based on port 1.

```
dev0@qca>port srcfilter get 1
[Enable]:ENABLE
operation done.
```

2.19.60   port interface3az set

Set the EEE (Energy Efficient Ethernet) ability on a specified port interface (both mac and phy).

port interface3az set <*port_id*> <*enable|disable*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the EEE ability.

Examples

The following example is enabling the EEE ability based on port 1.

```
dev0@qca>port interface3az set 1 enable
operation done.
```

2.19.61   port interface3az get

Get the EEE ability on a specified port interface (bot mac and phy).

port interface3az get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the EEE ability status based on port 1.

```
dev0@qca>port interface3az get 1
[Enable]:ENABLE
operation done.
```

2.19.62   port flowCtrlforcemode set

Set the flow control force status on a specified port.

port flowctrlforcemode set *<port_id>* *<enable|disable>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the flow control.

Examples

The following example is enabling the flow control force status based on port 1.

```
dev0@qca>port flowctrlforcemode set 1 enable
operation done.
```

2.19.63   port flowCtrlforcemode get

Get the flow control force status on a specified port.

port flowctrlforcemode get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the flow control force status based on port 1.

```
dev0@qca>port flowctrlforcemode get 1
[Flow control]:ENABLE
operation done.
```

2.19.64   port promiscmode set

Set the promisc mode on a specified port.

port promiscmode set *<port_id> <enable|disable>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<enable|disable>	Enables or disables the promisc mode.

Examples

The following example is enabling the promisc mode based on port 1.

```
dev0@qca>port promiscmode set 1 enable
operation done.
```

2.19.65   port promiscmode get

Get the promisc mode on a specified port.

port promiscmode get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the promisc mode based on port 1.

```
dev0@qca>port promiscmode get 1
[Enable]:ENABLE
operation done.
```

2.19.66   port eeecfg set

Set the eee configuration property on a specified port.

port eeecfg set *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.
<eee_enable>	Enables or disables
<eee_capability>	eee capability

Parameter	Description
<lpi_sleep_timer>	lpi sleep timer
<advertisement>	eee advertisement
<lpi_tx_enable>	lpi tx enable or disable
<eee_status>	Resolution status
<lpi_wakeup_timer>	lpi wakeup timer
<link_partner_advertisement>	Link partner advertisement

Examples

The following example is setting eee configuration property based on port 2.

```
dev0@qca>port eeecfg set 2
eee_enable(yes): yes
eee_capability(0-0xffff): 0xffff
lpi_sleep_timer(0-0xffff): 0xda
advertisement(0-0xffff): 0xffff
lpi_tx_enable(0x1): 0x1
eee_status(0-0xffff): 0xffff
lpi_wakeup_timer(0-0xffff): 0x1b
link_partner_advertisement(0-0xffff): 0xffff

operation done.
```

2.19.67   port eeecfg get

Get the eee configuration property on a specified port.

port eeecfg get *<port_id>*

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The range is 1-6.

Examples

The following example is getting the eee configuration property based on port 2.

```
dev0@qca>port eeecfg get 2

[eee_enable]:yes
[eee_capability]:0x6
[eee_lpi_sleep_timer]:0xda
[eee_advertisement]:0x6
[eee_lpi_tx_enable]:0x1
[eee_status]:0x0
[eee_lpi_wakeup_timer]:0x1b
```

```
[eee_link_partner_advertisement]:0x0
operation done.
```

2.19.68   port switchportloopback set

Set the switchport loopback property on a specified port.

port switchportloopback set <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The port ID is 6.
<loopback_enable>	Enables or disables
<crc_stripped_enable>	Enables or disables
<loopback_rate>	Loopback port rate

Examples

The following example is setting switchloopback port configuration property based on port 6.

```
dev0@qca>port switchportloopback set 6
loopback_enable:yes
crc_strpped_enable:yes
loopback_rate(1-0x12c): 14
operation done.
```

2.19.69   port switchportloopback get

Get the switchport loopback property on a specified port.

port switchportloopback get <*port_id*>

Syntax description

Parameter	Description
<port_id>	Specifies the port ID. The port id is 6.

Examples

The following example is getting the switchportloopback configuration property based on port 6.

```
dev0@qca>port switchportloopback get 6

[loopback_enable]:yes
[crc_stripped_enable]:yes
[loopback_rate]:14[Mbps]

operation done.
```

2.19.70 port srcfiltercfg set

Set the source filter configuration on a specified port.

port srcfiltercfg set <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-255.

Examples

The following example is setting the source filter configuration based on a port.

```
dev0@qca>port srcfiltercfg set 1
srcfilter_enable(enable): enable
srcfilter_mode(virtual port): svirtual_port
operation done.
```

2.19.71 port srcfiltercfg get

Get the source filter configuration on a specified port.

port srcfiltercfg get <*port_id*>

Syntax description

Parameter	Description
<*port_id*>	Specifies the port ID. The range is 0-255.

Examples

The following example is getting the source filter configuration based on a port.

```
dev0@qca>port srcfiltercfg get 1
[srcfilter config]
src_filter_enable:ENABLE
src_filter_mode:virtual_port mode
operation done.
```

2.20 RSS HASH

The RSS hash commands configure RSS hash mask, fragment mode, seed and packet some options related mix values. Then each packet sent to EDMA will also have a RSS hash value.

2.20.1 rsshash config set

Set RSS hash related configurations.

For hash_sip_mix and hash_dip_mix values:

- When the packet is IPv4, it is 32-bit value, so the mix values are all 0-0x1f.

- When the packet is IPv6, it is 128-bit value, so the mix values are all combination of 4*1f.

rsshash config set <*ipv4v6|ipv4|ipv6*>

Syntax description

Parameter	Description
<*ipv4v6|ipv4|ipv6*>	Specifies setting configurations: ■ IPv4 ■ IPv6 ■ IPv4 and IPv6 at the same time
[hash_mask]	Specifies the mask of returned hash value.
[hash_fragment_mode]	Specifies the fragment mode status.
[hash_seed]	Specifies the hash seed value.
[hash_sip_mix]	Specifies the source IP mix value.
[hash_dip_mix]	Specifies the dest IP mix value.
[hash_protocol_mix]	Specifies the IP protocol mix value.
[hash_sport_mix]	Specifies the L4 source port mix value.
[hash_dport_mix]	Specifies the L4 dest port mix value.
[hash_fin_inner]	Specifies the final inner mix value.
[hash_fin_outer]	Specifies the final outer mix value.

Examples

The following example is setting IPv4 RSS hash related configurations.

```
dev0@qca>rsshash config set  ipv4
hash_mask(0): 0x1f
hash_fragment_mode(no): yes
hash_seed(0): 1
hash_sip_mix(0): 2
hash_dip_mix(0): 3
hash_protocol_mix(0): 4
hash_sport_mix(0): 5
hash_dport_mix(0): 6
hash_fin_inner(0): 7
hash_fin_outer(0): 8
```

2.20.2   rsshash config get

Get RSS hash related configurations.

rsshash config get <*ipv4v6|ipv4|ipv6*>

Syntax description

Parameter	Description
<ipv4v6|ipv4|ipv6>	Specifies getting configurations: ■ IPv4 ■ IPv6 ■ IPv4 and IPv6 at the same time

Examples

The following example is getting IPv4 RSS hash related configurations.

```
dev0@qca>rsshash config get  ipv4
hash_mask:0x1f  hash_fragment_mode:ENABLE
hash_seed:0x1  hash_sip_mix:0x2
hash_dip_mix:0x3  hash_protocol_mix:0x4
hash_sport_mix:0x5  hash_dport_mix:0x6
hash_fin_inner:0x7  hash_fin_outer:0x8
operation done.
```

2.21 SEC

The SEC commands are designed for packet exception checking configurartion. The SEC commands include setting/getting small TTL value and TCP exception flags and mask value, and enable/disable exception check based on the packet forward path.

2.21.1 sec expctrl set

Set exception control information, including enable/disable exception check, exception action, and enable/disable de-acceleration.

sec expctrl set <*excp_type*>

Syntax description

Parameter	Description
<excep_type>	Specifies the exception type. The range is 1-70.
[excep_cmd]	Specifies the action for this exception.
[deacclr_en]	Enables or disables de-acceleration.
[l3route_only_en]	Enables or disables exception check for L3 route only.
[l2fwd_only_en]	Enables or disables exception check for L2 forward only.
[l2flow_en]	Enables or disables exception check for L2 flow.
[l3flow_en]	Enables or disables exception check for L3 flow.
[multicast_en]	Enables or disables exception check for multicast.

Examples

The following example is setting multicast enable for exception 1.

```
dev0@qca>sec expctrl set 1
excep_cmd(forward):
deacclr_en(0):
l3route_only_en(0):
l2fwd_onl_ en(0):
l2flow_en(0):
l3flow_en(0):
multicast_en(0): 1
operation done.
```

2.21.2   sec expctrl get

Get exception control information, including enable/disable exception check, exception action, and enable/disable de-acceleration.

sec expctrl get <*excp_type*>

Syntax description

Parameter	Description
<excep_type>	Specifies the exception type. The range is 1-70.

Examples

The following example is getting exception 1 control information.

```
dev0@qca>sec expctrl get 1
[except_cmd]:0x0 [deacclr_en]:0x0 [l3route_only_en]:0x0 [l2fwd_only_en]:0x0
[l3flow_en]:0x0 [l2flow_en]:0x0 [multicast_en]:0x1
operation done.
```

2.21.3   sec l3parser set

Set the small TTL and hoplimit value for exception check.

sec l3parser set

Syntax description

Parameter	Description
[small_ip4ttl]	Specifies the small TTL value.
[small_ip6hoplimit]	Specifies the small hoplimit value.

Examples

The following example is setting small TTL and small hoplimit to 1.

```
dev0@qca>sec l3parser set
small_ip4ttl(0): 1
small_ip6hoplimit(0): 1
operation done.
```

2.21.4   sec l3parser get

Get the small TTL and hoplimit value for exception check.

sec l3parser get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the small TTL and small hoplimit value.

```
dev0@qca>sec l3parser get
[small_ip4ttl]:0x1 [small_ip6hoplimit]:0x1
operation done.
```

2.21.5   sec l4parser set

Set the TCP flag and mask value for exception check.

sec l4parser set

Syntax description

Parameter	Description
[tcp_flags0]	Specifies the first TCP flag value.
[tcp_flags_mask0]	Specifies the first TCP flag mask value.
[tcp_flags1]	Specifies the second TCP flag value.
[tcp_flags_mask1]	Specifies the second TCP flag mask value.
[tcp_flags2]	Specifies the third TCP flag value.
[tcp_flags_mask2]	Specifies the third TCP flag mask value.
[tcp_flags3]	Specifies the fourth TCP flag value.
[tcp_flags_mask3]	Specifies the fourth TCP flag mask value.
[tcp_flags4]	Specifies the fifth TCP flag value.
[tcp_flags_mask4]	Specifies the fifth TCP flag mask value.
[tcp_flags5]	Specifies the sixth TCP flag value.
[tcp_flags_mask5]	Specifies the sixth TCP flag mask value.

Parameter	Description
[tcp_flags6]	Specifies the seventh TCP flag value.
[tcp_flags_mask6]	Specifies the seventh TCP flag mask value.
[tcp_flags7]	Specifies the eighth TCP flag value.
[tcp_flags_mask7]	Specifies the eighth TCP flag mask value.

Examples

The following example is setting the first TCP flag with mask.

```
dev0@qca>sec l4parser set
tcp_flags0(0): 1
tcp_flags_mask0(0): 0x1
tcp_flags1(0):
tcp_flags_mask1(0):
tcp_flags2(0):
tcp_flags_mask2(0):
tcp_flags3(0):
tcp_flags_mask3(0):
tcp_flags4(0):
tcp_flags_mask4(0):
tcp_flags5(0):
tcp_flags_mask5(0):
tcp_flags6(0):
tcp_flags_mask6(0):
tcp_flags7(0):
tcp_flags_mask7(0):
operation done.
```

2.21.6   sec l4parser get

Get the TCP flag and mask value for exception check.

sec l4parser get

Syntax description

Parameter	Description
None	–

Examples

The following example is getting the TCP flag with mask.

```
dev0@qca>sec l4parser get
[tcp_flags0]:0x1 [tcp_flags_mask0]:0x1
[tcp_flags1]:0x0 [tcp_flags_mask1]:0x0
[tcp_flags2]:0x0 [tcp_flags_mask2]:0x0
[tcp_flags3]:0x0 [tcp_flags_mask3]:0x0
```

```
[tcp_flags4]:0x0 [tcp_flags_mask4]:0x0
[tcp_flags5]:0x0 [tcp_flags_mask5]:0x0
[tcp_flags6]:0x0 [tcp_flags_mask6]:0x0
[tcp_flags7]:0x0 [tcp_flags_mask7]:0x0
operation done.
```

A Appendix

The section describes the available APIs in MINI SSDK. By default SSDK is built as MINI version in QSDK 256 profile and 512 profile. SSDK can be built as MINI version by selecting the specified "CHIP_TYPE" as CPPE and setting "MINI_SSDK=enable".

The following table lists the shell command list available in MINI SSDK, where IP and PPPoE commands are not available.

Module	Command
VSI	vsi vsiid alloc
	vsi vsiid free
	vsi portbasedvsi set
	vsi vlanbasedvsi set
	vsi vlanbasedvsi get
	vsi member set
	vsi member get
	vsi learnctrl set
	vsi stationmove set
VLAN	portvlan globalqinqmode set
	portvlan globalqinqmode get
	portvlan ptqinqmode set
	portvlan ptqinqmode get
	portvlan intpid set
	portvlan intpid get
	portvlan egtpid set
	portvlan egtpid get
	portvlan ingressfilter set
	portvlan ingressfilter get
	portvlan defaultvlantag set
	portvlan defaultvlantag get
	portvlan tagpropagation set
	portvlan tagpropagation get
	portvlan egmode set
	portvlan egmode get

Module	Command
	portvlan translationmissaction set
	portvlan translationmissaction get
	portvlan vsiegmode set
	portvlan vsiegmode get
	portvlan vsiegmodeen set
	portvlan vsiegmodeen get
	portvlan translationadv add
	portvlan translationadv del
	portvlan translationadv getfirst
	portvlan translationadv getnext
	portvlan counter flush
	portvlan counter get
FLOW	flow mgmt set
	flow mgmt get
ACL	acl list create
	acl list destroy
	acl rule add
	acl rule del
	acl rule query
	acl list bind
	acl list unbind
	acl udf set
	acl udf get
SEC	sec expctrl set
	sec expctrl get
	sec l3parser set
	sec l3parser get
	sec l4parser set
	sec l4parser get
FDB	fdb entry show
Port control	port duplex set
	port speed set
	port autoAdv set
	port autoNeg enable
	port autoNeg restart
	port poweroff set
	port poweron set
	port rxfcstatus set

Module	Command
	port txfcstatus set
	port rxmacstatus set
	port txmacstatus set
	port switchportloopback set
	port switchportloopback get
	port eeecfg set
	port eeecfg get
	port cdt run
Management control packet	ctrlpkt ethernettype set
	ctrlpkt ethernettype get
	ctrlpkt rfdb set
	ctrlpkt rfdb get
	ctrlpkt appprofile add
	ctrlpkt appprofile del
	ctrlpkt appprofile getfirst
	ctrlpkt appprofile getnext
	ctrlpkt appprofile show
STP	stp portstate get
	stp portstate set
TRUNK	trunk group set
	trunk group get
	trunk hashmode set
	trunk hashmode get
	trunk failover set
	trunk failover get
MIRROR	mirror analypt set
	mirror analypt get
	mirror ptingress set
	mirror ptingress get
	mirror ptegress set
	mirror ptegress get
	mirror analycfg set
	mirror analycfg get
MIB	mib statistics get
	mib status set
	mib status get
	mib counters flush
	mib counter get

Module	Command
	mib cpuKeep set
	mib cpuKeep get
	mib xgstatistics get
Shaper	shaper porttimeslot set
	shaper flowtimeslot set
	shaper queuetimeslot set
	shaper portshaper set
	shaper flowshaper set
	shaper queueshaper set
	shaper queueshaper get
	shaper porttoken set
	shaper flowtoken set
	shaper queuetoken set
	shaper ipgcompensation set
Policer	policer timeslot set
	policer fcscompensation set
QOS	qos ptgroup set
	qos ptgroup get
	qos ptpriprece set
	qos ptpriprece get
	qos pcpmap set
	qos pcpmap get
	qos flowmap set
	qos flowmap get
	qos dscpmap set
	qos dscpmap get
	qos qscheduler set
	qos qscheduler get
	qos ringqueue set
	qos ringqueue get
	qos portqueues get
	qos dequeue set
	qos dequeue get
	qos portscheduler reset
	qos schedulerresource get
Queue management	qm queue flush
	qm acctrl set
	qm acprebuffer set

Module	Command
	qm acqgroup set
	qm acstaticthresh set
	qm acdynamicthresh set
	qm acgroupbuff set
	qm enqueue set
	qm ucastqbase set
Buffer management	bm ctrl set
	bm portgroupmap set
	bm groupbuff set
	bm portrsvbuff set
	bm portdthresh set

LEGAL INFORMATION

Your access to and use of this material, along with any documents, software, specifications, reference board files, drawings, diagnostics and other information contained herein (collectively this "Material"), is subject to your (including the corporation or other legal entity you represent, collectively "You" or "Your") acceptance of the terms and conditions ("Terms of Use") set forth below. If You do not agree to these Terms of Use, you may not use this Material and shall immediately destroy any copy thereof.

1) Legal Notice.

This Material is being made available to You solely for Your internal use with those products and service offerings of Qualcomm Technologies, Inc. ("**Qualcomm Technologies**"), its affiliates and/or licensors described in this Material, and shall not be used for any other purposes. If this Material is marked as "**Qualcomm Internal Use Only**", no license is granted to You herein, and You must immediately (a) destroy or return this Material to Qualcomm Technologies, and (b) report Your receipt of this Material to qualcomm.support@qti.qualcomm.com. This Material may not be altered, edited, or modified in any way without Qualcomm Technologies' prior written approval. Unauthorized use or disclosure of this Material or the information contained herein is strictly prohibited, and You agree to indemnify Qualcomm Technologies, its affiliates and licensors for any damages or losses suffered by Qualcomm Technologies, its affiliates and/or licensors for any such unauthorized uses or disclosures of this Material, in whole or part.

Qualcomm Technologies, its affiliates and/or licensors retain all rights and ownership in and to this Material. No license to any trademark, patent, copyright, mask work protection right or any other intellectual property right is either granted or implied by this Material or any information disclosed herein, including, but not limited to, any license to make, use, import or sell any product, service or technology offering embodying any of the information in this Material.

THIS MATERIAL IS BEING PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE. TO THE MAXIMUM EXTENT PERMITTED BY LAW, QUALCOMM TECHNOLOGIES, ITS AFFILIATES AND/OR LICENSORS SPECIFICALLY DISCLAIM ALL WARRANTIES OF TITLE, MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, COMPLETENESS OR ACCURACY, AND ALL WARRANTIES ARISING OUT OF TRADE USAGE OR OUT OF A COURSE OF DEALING OR COURSE OF PERFORMANCE. MOREOVER, NEITHER QUALCOMM TECHNOLOGIES, NOR ANY OF ITS AFFILIATES AND/OR LICENSORS, SHALL BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY EXPENSES, LOSSES, USE, OR ACTIONS HOWSOEVER INCURRED OR UNDERTAKEN BY YOU IN RELIANCE ON THIS MATERIAL.

Certain product kits, tools and other items referenced in this Material may require You to accept additional terms and conditions before accessing or using those items.

Technical data specified in this Material may be subject to U.S. and other applicable export control laws. Transmission contrary to U.S. and any other applicable law is strictly prohibited.

Nothing in this Material is an offer to sell any of the components or devices referenced herein.

This Material is subject to change without further notification.

In the event of a conflict between these Terms of Use and the *Website Terms of Use* on www.qualcomm.com or the *Qualcomm Privacy Policy* referenced on www.qualcomm.com, these Terms of Use will control. In the event of a conflict between these Terms of Use and any other agreement (written or click-through, including, without limitation any non-disclosure agreement) executed by You and Qualcomm Technologies or a Qualcomm Technologies affiliate and/or licensor with respect to Your access to and use of this Material, the other agreement will control.

These Terms of Use shall be governed by and construed and enforced in accordance with the laws of the State of California, excluding the U.N. Convention on International Sale of Goods, without regard to conflict of laws principles. Any dispute, claim or controversy arising out of or relating to these Terms of Use, or the breach or validity hereof, shall be adjudicated only by a court of competent jurisdiction in the county of San Diego, State of California, and You hereby consent to the personal jurisdiction of such courts for that purpose.

2) Trademark and Product Attribution Statements.

Qualcomm is a trademark or registered trademark of Qualcomm Incorporated. Arm is a registered trademark of Arm Limited (or its subsidiaries) in the U.S. and/or elsewhere. The Bluetooth® word mark is a registered trademark owned by Bluetooth SIG, Inc. Other product and brand names referenced in this Material may be trademarks or registered trademarks of their respective owners.

Snapdragon and Qualcomm branded products referenced in this Material are products of Qualcomm Technologies, Inc. and/or its subsidiaries. Qualcomm patented technologies are licensed by Qualcomm Incorporated.