PacketMAX™

Advanced Features

Command Line (CLI) Reference Guide

AF1G52AC

Garland Technology: Advanced Features System

Firmware Rev Level: 3.0.9

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<th>Section</th>
<th>Description</th>
</tr>
</thead>
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<tr>
<td>25.12</td>
<td>match nvgre-key</td>
</tr>
<tr>
<td>25.13</td>
<td>match transport tcp flags</td>
</tr>
<tr>
<td>25.14</td>
<td>match packet (drop</td>
</tr>
<tr>
<td>25.15</td>
<td>collect counter</td>
</tr>
<tr>
<td>25.16</td>
<td>collect flow</td>
</tr>
<tr>
<td>25.17</td>
<td>collect ttl</td>
</tr>
<tr>
<td>25.18</td>
<td>collect timestamp</td>
</tr>
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</tr>
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<td>25.20</td>
<td>description</td>
</tr>
<tr>
<td>25.21</td>
<td>destination</td>
</tr>
<tr>
<td>25.22</td>
<td>dscp</td>
</tr>
<tr>
<td>25.23</td>
<td>domain-id</td>
</tr>
<tr>
<td>25.24</td>
<td>template data timeout</td>
</tr>
<tr>
<td>25.25</td>
<td>flow data timeout</td>
</tr>
<tr>
<td>25.26</td>
<td>transport protocol</td>
</tr>
<tr>
<td>25.27</td>
<td>ttl</td>
</tr>
<tr>
<td>25.28</td>
<td>event flow</td>
</tr>
<tr>
<td>25.29</td>
<td>flow data flush threshold length</td>
</tr>
<tr>
<td>25.30</td>
<td>flow data flush threshold timer</td>
</tr>
<tr>
<td>25.31</td>
<td>flow data flush threshold count</td>
</tr>
<tr>
<td>25.32</td>
<td>ipfix sampler</td>
</tr>
<tr>
<td>25.33</td>
<td>description</td>
</tr>
<tr>
<td>25.34</td>
<td>1 out-of</td>
</tr>
<tr>
<td>25.35</td>
<td>mode</td>
</tr>
<tr>
<td>25.36</td>
<td>mode flow</td>
</tr>
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<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/19/20</td>
<td>3.0.6.r2</td>
<td>Update document for product upgrade</td>
</tr>
</tbody>
</table>
1 Preface

1.1 Declaration

This document updates at irregular intervals because of product upgrade or other reason.

This document is for your reference only.

1.2 Suggestion feedback

If you have any questions when using our product and reading this document, please contact us:

garlandtechnology.com/support

1.1 Audience

This document is for the following audiences:

- System maintenance engineers
- Debugging and testing engineers
- Network monitoring engineers
- Field maintenance engineers

1.2 Conventions

Table 1-1 Command syntax convention table

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italic type with capital letters</td>
<td>Use <em>italic type</em> with capital letters for the parameters of the commands. Parameters are the parts which need to replace with the actual value.</td>
</tr>
<tr>
<td>Syntax</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>(x</td>
<td>y</td>
</tr>
<tr>
<td>(x</td>
<td>y</td>
</tr>
<tr>
<td>[x</td>
<td>y</td>
</tr>
<tr>
<td>[x</td>
<td>y</td>
</tr>
<tr>
<td>{x</td>
<td>y</td>
</tr>
<tr>
<td>{x</td>
<td>y</td>
</tr>
<tr>
<td>&lt;x-y&gt;</td>
<td>Select a number between x and y.</td>
</tr>
</tbody>
</table>
2 INTERFACE Commands

2.1 interface range

1 Command Purpose

Use this command to enter interface range mode, include physical port, linkagg interface.

2 Command Syntax

interface range KLINE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLINE</td>
<td>Interface range, with &quot;,&quot; or &quot;-&quot; to distinguish the interface range set.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

None
6 Examples

The following example shows how to enter interface range eth-0-1 to eth-0-24 and shutdown these 24 interfaces:

```plaintext
Switch(config)# interface range eth-0-1 - 24
Switch(config-if-range)# shutdown
```

The following example shows how to enter interface eth-0-8 and eth-0-10, and shutdown these 2 interfaces:

```plaintext
Switch(config)# interface range eth-0-8, eth-0-10
Switch(config-if-range)# shutdown
```

7 Related Commands

interface

2.2 interface

1 Command Purpose

Use this command to enter interface mode.

2 Command Syntax

interface **IF_NAME**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name to enter the mode. e.g. eth-0-1, agg1.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4  Default

None

5  Usage

The interface name can be either a physical port name (i.e. eth-0-1) or link-agg name (i.e. agg1).

6  Examples

This example shows how to enter physical port eth-0-1:

Switch(config)# interface eth-0-1

This example shows how to enter aggregation interface agg10:

Switch(config)# interface agg10

7  Related Commands

interface range

2.3  shutdown

1  Command Purpose

Use this command to disable the interface manually. Use the no form of this command to enable the interface.

2  Command Syntax

shutdown

no shutdown

3  Command Mode

Interface Configuration
4 Default

No shutdown

5 Usage

None

6 Examples

The following example shows how to enter physical port eth-0-1 and disable the interface:

```bash
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# shutdown
```

The following example shows how to enter physical port eth-0-1 and enable the interface:

```bash
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# no shutdown
```

7 Related Commands

show interface status

2.4 description

1 Command Purpose

Use this command to set the description on the interface.

And use the no form of this command to delete the description.

2 Command Syntax

description LINE

no description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINE</td>
<td>Interface description</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Interface Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to set the description on the interface eth-0-1:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# description TenGigabitEthernet
```

The following example shows how to remove the description on the interface eth-0-1:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# no description
```

7 Related Commands

show interface description

2.5 speed

1 Command Purpose

Use this command to set the interface speed. And use the no form of this command to restore the interface to its default speed value.

2 Command Syntax

```
speed ( auto | 10 | 100 | 1000 | 2.5G | 5G | 10G | 25G | 40G | 100G )

no speed
```
### Command Mode

#### Interface Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>auto</td>
<td>Auto negotiation the speed of a port</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>Force the port speed to be 10Mb/s</td>
<td>-</td>
</tr>
<tr>
<td>100</td>
<td>Force the port speed to be 100Mb/s</td>
<td>-</td>
</tr>
<tr>
<td>1000</td>
<td>Force the port speed to be 1000Mb/s</td>
<td>-</td>
</tr>
<tr>
<td>2.5G</td>
<td>Force the port speed to be 2.5Gb/s</td>
<td>-</td>
</tr>
<tr>
<td>5G</td>
<td>Force the port speed to be 5Gb/s</td>
<td>-</td>
</tr>
<tr>
<td>10G</td>
<td>Force the port speed to be 10Gb/s</td>
<td>-</td>
</tr>
<tr>
<td>25G</td>
<td>Force the port speed to be 25Gb/s</td>
<td>-</td>
</tr>
<tr>
<td>40G</td>
<td>Force the port speed to be 40Gb/s</td>
<td>-</td>
</tr>
<tr>
<td>100G</td>
<td>Force the port speed to be 100Gb/s</td>
<td>-</td>
</tr>
</tbody>
</table>
4 Default

Auto

5 Usage

For different interface, some speed value can’t be set.

6 Examples

The following example shows how to set the port speed to 1000Mb/s:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# speed 1000
```

The following example shows how to restore the port speed to default value:

```
Switch(config-if-eth-0-1)# no speed
```

7 Related Commands

show interface status

   show interface

2.6 duplex

1 Command Purpose

Use this command to set the mode of operation for a port. And use the no form of this command set the mode of operation to default value.

2 Command Syntax

duplex ( auto | full | half )

   no duplex

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0.9</td>
<td>27</td>
<td>Garlandtechnology.com</td>
</tr>
</tbody>
</table>
### Interface Configuration

#### Command Mode

**Auto**

#### Usage

Half mode is only supported on 10M/100M link.

#### Examples

The following example shows how to set interface eth-0-1 duplex mode to auto:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# duplex auto
```

The following example shows how to set interface eth-0-1 duplex mode to full:

```
Switch(config-if-eth-0-1)# duplex full
```

The following example shows how to set interface eth-0-1 duplex mode to default:

```
Switch(config-if-eth-0-1)# no duplex
```
7 Related Commands

show interface status

    show interface

2.7 unidirectional

1 Command Purpose

Use this command to set unidirectional function for a port.

2 Command Syntax

unidirectional ( enable | disable | rx-only )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable unidirectional</td>
<td>-</td>
</tr>
<tr>
<td>disable</td>
<td>Disable unidirectional</td>
<td>-</td>
</tr>
<tr>
<td>rx-only</td>
<td>Receive only</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Interface Configuration

4 Default

Disable

5 Usage

None
6 Examples

The following example shows how enable unidirectional on interface eth-0-1:

Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# unidirectional enable

The following example shows how disable unidirectional on interface eth-0-1:

Switch(config-if-eth-0-1)# unidirectional disable

7 Related Commands

show interface status

    show interface

2.8 fec

1 Command Purpose

Use the command to set fec function for a port. And use the no form of this command set fec function to default value.

2 Command Syntax

fec ( enable | disable | none | baser | rs )

    no fec

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable fec</td>
<td>-</td>
</tr>
<tr>
<td>disable</td>
<td>Disable fec</td>
<td>-</td>
</tr>
<tr>
<td>none</td>
<td>Set fec none</td>
<td>-</td>
</tr>
<tr>
<td>baser</td>
<td>Set fec baser</td>
<td>-</td>
</tr>
<tr>
<td>rs</td>
<td>Set fec rs</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Interface Configuration

4 Default

None

5 Usage

“enable” and “disable” mode can’t be configured in V550 and V530.

6 Examples

The following example shows how to set fec none for a port:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# fec none
```

7 Related Commands

show interface status

2.9 static-channel-group

1 Command Purpose

Use this command to add a port to a static channel group. And use the no form of this command to remove this port from this static channel group.

2 Command Syntax

static-channel-group AGG_GID

no static-channel-group

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGG_GID</td>
<td>Channel group ID</td>
<td>range is &lt;1-55&gt;</td>
</tr>
</tbody>
</table>

3.0.9 31 Garlandtechnology.com
3 Command Mode

Interface Configuration

4 Default

None

5 Usage

The valid range of channel group id is limited by hardware and is different for each model.

6 Examples

The following example shows how to add interface eth-0-1 to static channel group 2:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# static-channel-group 2
```

The following example shows how to remove interface eth-0-1 from static channel group 2:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# no static-channel-group
```

7 Related Commands

show interface

2.10 media-type

1 Command Purpose

Use this command to set media type of combo port. And use the no form of this command to set media type to default.

2 Command Syntax

media-type ( auto | rj45 | sfp )

no media-type
### Command Mode

#### Interface Configuration

#### Default

Auto

#### Usage

Different media type of the combo port cannot be active at the same time.

#### Examples

The following example shows how to set media type of combo port:

```
Switch(config-if-eth-0-1) media-type auto
```

The following example shows how to set media type of combo port to default:

```
Switch(config-if-eth-0-1)# no media-type
```

#### Related Commands

show interface
2.11 show management interface

1 Command Purpose

Use this command to display the status and configurations of management interface.

2 Command Syntax

show management interface

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to displays the states, configurations and statistics on management interface:

```
Switch# show management interface
Management Interface current state: UP
Description:
Link encap: Ethernet  HWaddr: 00:1E:08:0B:E6:C1
inet addr: 10.10.39.104  Bcast: 10.10.39.255  Mask: 255.255.254.0
Speed: 1000Mb/s  Duplex: Full
Auto-negotiation: Enable
Received: 1030834 Packets, 79596824 Bytes (75.9 MiB)
Transmitted: 110758 Packets, 16209745 Bytes (15.4 MiB)
```

7 Related Commands

show interface status
2.12 show interface

1 Command Purpose

Use this command to display the configurations and statistics on all interfaces or one interface.

2 Command Syntax

show interface (IF_NAME | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name to show</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

If the parameter “IF_NAME” is not specified, the command indicates that all interfaces on this device should be displayed; otherwise only the specified interface should be displayed.

6 Examples

The following example shows how to display the configurations and statistics of interface eth-0-1:

```
Switch# show interface eth-0-1

Interface eth-0-1
    Interface current state: DOWN
    Hardware is Port, address is 001e.080b.e6c2
    Bandwidth 1000000 kbits
    Index 1, Metric 1
    Speed - auto, Duplex - auto, Metadata - Disable, Media type is UNKNOWN
    Link type is autonegotiation
    Admin input flow-control is off, output flow-control is off
```
Oper input flow-control is off, output flow-control is off
The Maximum Frame Size is 12800 bytes
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes
Received 0 unicast, 0 broadcast, 0 multicast
0 runs, 0 giants, 0 input errors, 0 CRC
0 frame, 0 overrun, 0 pause input
0 packets output, 0 bytes
Transmitted 0 unicast, 0 broadcast, 0 multicast
0 underruns, 0 output errors, 0 pause output

7 Related Commands

show interface status

2.13 show interface summary

1 Command Purpose

Use this command to display the statistics on all interfaces or one interface.

2 Command Syntax

show interface summary ( IF_NAME | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name to show</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

none
5 Usage

If the parameter “IF_NAME” is not specified, the command indicates that all interfaces on this device should be displayed; otherwise only the specified interface should be displayed.

6 Examples

The following example shows how to display the statistic of interface eth-0-1:

```
Switch# show interface summary eth-0-1
RXBS: rx rate (bits/sec)   RXPS: rx rate (pkts/sec)
TXBS: tx rate (bits/sec)   TXPS: tx rate (pkts/sec)
Interface Link  RXBS  RXPS  TXBS  TXPS
eth-0-1        DOWN  0    0    0    0
```

7 Related Commands

show interface

2.14 show interface status

1 Command Purpose

Use this command to display the brief information on all physical and link aggregation interfaces.

2 Command Syntax

show interface status

3 Command Mode

Privileged EXEC

4 Default

None
5  Usage
None

6  Examples

The following example shows how to display the brief information on all physical and link aggregation interfaces:

```
Switch# show interface status

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Duplex</th>
<th>Speed</th>
<th>Mode</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-1</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-2</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-3</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-4</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-5</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-6</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-7</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-8</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-9</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-10</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-11</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-12</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-13</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-14</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-15</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-16</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-17</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-18</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-19</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-20</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-21</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-22</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-23</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-24</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-25</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-26</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-27</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-28</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-29</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-30</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-31</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>eth-0-32</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>UNKNOWN</td>
</tr>
<tr>
<td>FGE0/33</td>
<td>down</td>
<td>full</td>
<td>40000</td>
<td>trunk</td>
<td>UNKNOWN</td>
<td></td>
</tr>
<tr>
<td>FGE0/34</td>
<td>down</td>
<td>full</td>
<td>40000</td>
<td>trunk</td>
<td>UNKNOWN</td>
<td></td>
</tr>
<tr>
<td>agg5</td>
<td>down</td>
<td>auto</td>
<td>auto</td>
<td>auto</td>
<td>trunk</td>
<td>LAG</td>
</tr>
</tbody>
</table>
```

7  Related Commands

show interface
2.15 show interface description

1 Command Purpose

Use this command to display the description information on all interfaces.

2 Command Syntax

show interface description

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the description on all physical and link aggregation interfaces:

```
Switch# show interface description

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-1</td>
<td>down</td>
<td>TenGigabitEthernet</td>
</tr>
<tr>
<td>eth-0-2</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-3</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-4</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-5</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-6</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-7</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-8</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-9</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-10</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-11</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-12</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-13</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-14</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-15</td>
<td>down</td>
<td></td>
</tr>
<tr>
<td>eth-0-16</td>
<td>down</td>
<td></td>
</tr>
</tbody>
</table>
```
7 Related Commands

show interface

2.16 clear counters

1 Command Purpose

Use this command to clear the statistics information on the interfaces.

2 Command Syntax

clear counters ( IF_NAME | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name to clear the statistics counters.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC
4 Default
None

5 Usage
If the parameter “IF_NAME” is not specified, the command indicates that all interfaces’ statistics counters information on this device should be cleared; otherwise only the specified interface should be cleared.

6 Examples
The following example shows how to clear the statistics information on all interfaces:

Switch# clear counters

The following example shows how to clear the statistics information on the interface eth-0-1:

Switch# clear counters eth-0-1

7 Related Commands
show interface

2.17 crc-check

1 Command Purpose
Use this command to set CRC check function for a port.

2 Command Syntax
crc-check enable

no crc-check enable
3 Command Mode

Interface Configuration

4 Default

Disable

5 Usage

None

6 Examples

The following example shows how to enable CRC check function for a port:

```
Switch# configure terminal
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# crc-check enable
```

The following example shows how to disable CRC check function for a port:

```
Switch# configure terminal
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# no crc-check enable
```

7 Related Commands

None

2.18 crc-recalculation

1 Command Purpose

Use this command to set CRC recalculation function for a port.

2 Command Syntax

crc-recalculation enable

    no crc-recalculation enable
3 Command Mode

Interface Configuration

4 Default

enable

5 Usage

None

6 Examples

The following example shows how to enable CRC recalculation function for a port:

```
Switch# configure terminal
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# crc-recalculation enable
```

The following example shows how to disable CRC recalculation function for a port:

```
Switch# configure terminal
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# no crc-recalculation enable
```

7 Related Commands

None

2.19 show this

1 Command Purpose

Use this command to show the interface information
2 Command Syntax

show this

3 Command Mode

Interface Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to show interface information:

```
Switch(config-if-eth-0-1)# show this
interface eth-0-1
```

7 Related Commands

None
3  ErrDisable Commands

3.1 errdisable detect

1  Command Purpose

Use this command to enable link error status detection function for ports. And use the no form of this command to restore to default value.

2  Command Syntax

errdisable detect reason link-flap

no errdisable detect reason link-flap

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>link-flap</td>
<td>Link oscillation detection</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

Default link-flap is enable

5  Usage

None
6 Examples

The following example shows how to enable link error status detection function for port:

```
Switch# configure terminal
Switch(config)# errdisable detect reason link-flap
```

The following example shows how to disable link error status detection function for port:

```
Switch# configure terminal
Switch(config)# no errdisable detect reason link-flap
```

7 Related Commands

show errdisable detect

3.2 errdisable recovery interval

1 Command Purpose

Use this command to set the recovery time of the link from the error state. And use the no form of this command to restore recovery time to default value.

2 Command Syntax

errdisable recovery interval \texttt{ERRDIS\_RECOVER\_TIMER\_PARAM}

no errdisable recovery interval

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERRDIS_RECOVER_TIMER_PARAM</td>
<td>Time interval to recover from error state</td>
<td>range is 30-86400, unit is second</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

300
5 Usage

None

6 Examples

The following example shows how to set the interval for error status recovery to 100 seconds:

Switch# configure terminal
Switch(config)# errdisable recover interval 100

The following example shows how to restore the interval to default value:

Switch# configure terminal
Switch(config)# no errdisable recover interval

7 Related Commands

show errdisable recovery

3.3 errdisable recovery reason

1 Command Purpose

Use this command to enable the error recovery function for the specified reason. And use the no form of this command to disable this function.

2 Command Syntax

erdisable recovery reason link-flap

no errdisable recovery reason link-flap

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>link-flap</td>
<td>Enable or disable the error recovery function for link oscillation</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

Disable

5 Usage

Use this command to enable or disable the error recovery function for the specified reason.

6 Examples

The following example shows how to enable the error recovery function for port:

```
Switch# configure terminal
Switch(config)# errdisable recover reason link-flap
```

The following example shows how to disable the error recovery function for port:

```
Switch# configure terminal
Switch(config)# no errdisable recover reason link-flap
```

7 Related Commands

show errdisable recovery

3.4 errdisable flap

1 Command Purpose

Use this command set link oscillation parameters. And use the no form of this command to restore to default setting.

2 Command Syntax

```
errdisable flap reason link-flap ERRDIS_FLAP_COUNT ERRDIS_FLAP_TIME

no errdisable flap reason link-flap
```
3 Command Mode

Global Configuration

4 Default

10

5 Usage

There are two parameters in link flap error detection, one is flap count, the other is flap time, if the count of flap reach the max flap count in time of flap time specified, the port will enter errdisable state.

6 Examples

The following example shows how to set link oscillation parameters:

Switch# configure terminal
Switch(config)# errdisable flap reason link-flap 30 40

The following example shows how to restore link oscillation parameters to default value:

Switch# configure terminal
Switch(config)# no errdisable flap reason link-flap

7 Related Commands

show errdisable flap
3.5 show errdisable detect

1 Command Purpose

Use this command to display whether error detection is enabled.

2 Command Syntax

show errdisable detect

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display whether error detection is enabled:

```
Switch# show errdisable detect
ErrDisable Reason Detection status
-----------------+------------------
link-flap        Enabled
```

7 Related Commands

errdisable detect reason
3.6 show errdisable recovery

1 Command Purpose

Use this command to display whether error recovery is enabled.

2 Command Syntax

show errdisable recovery

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to get the recovery status of all error reason. If link error is happened, it can get the recovery information.

6 Examples

The following example shows how to display whether error recovery is enabled:

```
Switch# show errdisable recovery
ErrDisable Reason           Timer status
------------------------------------------
link-flap                   Enabled
Timer interval: 300 seconds
```

7 Related Commands

errdisable recovery interval

errdisable recovery reason
3.7 show errdisable flap

1 Command Purpose
This command is used to display parameters for link oscillation error detection.

2 Command Syntax
show errdisable flap

3 Command Mode
Privileged EXEC

4 Default
None

5 Usage
Use this command to display the link oscillation error detection time, unit is second.

6 Examples
The following example shows how to display the link oscillation error detection time:

```
Switch# show errdisable flap
ErrDisable Reason Flaps      Time (sec)
---------------------------------------
link-flap                     10       10
```

7 Related Commands
errdisable flap
4 FLOW Commands

4.1 show interface flow statistics

1 Command Purpose

Use this command to show statistics information which matched the flow on the interface.

2 Command Syntax

show interface flow statistics IF_NAME (FLOW_SEQ_NUM | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify an interface name to show flow statistics. This command supports physical or</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>link aggregation interfaces.</td>
<td></td>
</tr>
<tr>
<td>FLOW_SEQ_NUM</td>
<td>Specify sequence-number to show flow statistics. If the sequence-number is not specified, this command indicates that all rules on this interface should be shown.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC
4 Default
None

5 Usage
Interface name must be specified.

6 Examples
The following example shows how to display the flow statistic on interface eth-0-1:

```
Switch# show interface flow statistics eth-0-1
TAP group name: g1
flow name: f1
sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any ( bytes 100 packets 1 )
sequence-num 20 deny any src-ip any dst-ip any ( bytes 86 packets 1 )
(total bytes 186 total packets 2 )
```

7 Related Commands
show flow
clear interface flow statistics

clear interface flow statistics

4.2 clear interface flow statistics

1 Command Purpose
Use this command to clear statistics information which matched the flow on the interface.

2 Command Syntax
clear interface flow statistics IF_NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify an interface name to clear flow statistics.</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Interface name must be specified.

6 Examples

The following example shows how to clear statistics information which matched the flow on the interface:

```
Switch# clear interface flow statistics eth-0-1
```

The following example shows the result after using the command in the example above:

```
Switch# show interface flow statistics eth-0-1
TAP group name: gl
flow name: fl
sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any ( bytes 0 packets 0 )
sequence-num 20 deny any src-ip any dst-ip any ( bytes 0 packets 0 )
(totals bytes 0 total packets 0 )
```

7 Related Commands

show interface flow statistics
4.3 show flow

1 Command Purpose

Use this command to show the configuration of flow.

2 Command Syntax

show flow (NAME_STRING | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>Flow name, up to 20 characters. If the flow name is not specified, this command indicates that all flows should be shown.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows the configuration of flow:

```
Switch# show flow
flow f1
remark flowlipdeny
```
7 Related Commands

flow

4.4 flow

1 Command Purpose

Use this command to create Flow and then enter Flow configuration mode.

Use the no form of this command to delete the flow.

2 Command Syntax

flow NAME_STRING ( type decap | )

no flow NAME_STRING

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>Flow name</td>
<td>up to 20 characters</td>
</tr>
<tr>
<td>type decap</td>
<td>Set the flow type as tunnel decap.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Flow with “type decap” parameter can use “inner-match” fields.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None
5  Usage

If the system already has a flow with the same name, this command will enter the flow configuration mode.

When the name is not used by any flow, this command is to create the flow and then enter the flow configuration mode. When configured with parameter "type decap" means this flow match tunnel decap, which flow entries can configure “inner-match” fields.

6  Examples

This example shows how to create a flow named f1 and then enter the flow configuration mode:

```
Switch(config)# flow f1
Switch(config-flow-f1)#
```

The following example shows how to delete the flow:

```
Switch(config)# no flow f1
```

7  Related Commands

show flow

4.5  remark

1  Command Purpose

Use this command to add remarks for the flow.

Use the no form of this command to delete the remarks.

2  Command Syntax

remark NAME_STRING

no remark
3 Command Mode

Flow Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to add a remark to describe the flow:

```
Switch(config-flow-f1)# remark flowipdeny
```

This example shows how to delete the remark of the flow:

```
Switch(config-flow-f1)# no remark
```

7 Related Commands

show flow

4.6 no sequence-num

1 Command Purpose

Use this command to delete a filter from flow.
2 Command Syntax

no sequence-num FLOW_SEQ_NUM

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW_SEQ_NUM</td>
<td>Sequence-number</td>
<td>1 - 65535</td>
</tr>
</tbody>
</table>

3 Command Mode

Flow Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to delete a flow filter with sequence number 10 from flow f1:

```
Switch(config-acl-acl1)# no sequence-num 10
```

7 Related Commands

show flow

sequence-num

4.7 sequence-num

1 Command Purpose

Use this command to add a rule in a flow filter.
2 Command Syntax

### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW_SEQ_NUM</td>
<td>Specify a sequence number to create the flow rule. The valid range for sequence number is 1-65535. If the sequence number is not specified, system should automatically assign one number according to the base number and the step length. The base number is the maximum number in the flow (0 for empty flow), the step length is 10.</td>
</tr>
<tr>
<td>permit</td>
<td>Specify the action of the flow rule. Use the parameter “permit” to indicate packets match this rule is allowed to forward.</td>
</tr>
<tr>
<td>deny</td>
<td>Specify the action of the flow rule. Use the parameter “deny” to indicate packets match</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PROTOCOL_NUM</td>
<td>any</td>
</tr>
<tr>
<td>mpls (any</td>
<td>label-num</td>
</tr>
<tr>
<td>pppoe ppp-type (ipv4</td>
<td>ipv6)</td>
</tr>
<tr>
<td>src-port (range</td>
<td>L4_PORT_NUM</td>
</tr>
</tbody>
</table>

The valid range for IP protocol number is 0-255. Well known IP protocols can also be specified by name. e.g. IP protocol 1 = icmp, 2 = igmp, 6 = tcp, 17 = udp, 47 = gre/nvgre (gre protocol 0x0800 = gre, 0x6558 = nvgre).

Specify the IP protocol number of the flow rule.

The mpls label number is 0-9. It can match 3 layers of MPLS label values at most.

The valid range for L4 source port number is 0-65535. This filed is valid only if the IP protocol is TCP or

---

Garlandtechnology.com
| L4_PORT_NUM | lt | L4_PORT_NUM | any | UDP. There are 4 methods to specify the L4 port:
1. eq (equal to)
2. lt (less than)
3. gt (greater than)
4. range
Specify the layer 4 source port of the inner-match rule. |
| dst-port (range L4_PORT_NUM) L4_PORT_NUM | eq | L4_PORT_NUM | gt | L4_PORT_NUM | lt | L4_PORT_NUM | any |
| vxlan-vni (VNI_VALUE VNI_VALUE_WILD | any | Specify the vxlan vni number of the flow rule. This filed is valid only if the IP protocol is UDP and L4 destination port 4789. VNI (VXLAN Network Identifier) is the identifier on the VXLAN network, The valid range for VNI value is 0-16777215. The valid range for VNI wildcard bits is range 0x0-0xFFFFFFFF. VNI value and VNI wildcard bits both have 24bits. If a bit in wildcard... |
| **CLI USER GUIDE** | **PacketMAX Advanced Features | AF1G52AC** |
|-------------------|-------------------------------|

**Which is similar to the traditional VLAN.** Terminals in different VXLANs cannot connect with each other based on L2 network. One tenant uses one VNI (even if several terminals are in same VNI, they are regarding as one tenant). **is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any VNI value can match this rule.**

| **gre-key** (GRE_KEY_VALUE GRE_KEY_WILD | any) | **Specify the gre key of the flow rule.** This filed is valid only if the IP protocol is gre (Generic Routing Encapsulation). The valid range for gre key value is 0-4294967295. The valid range for gre key wildcard bits is range 0x0-0xFFFFFFFF. Gre key value and wildcard bits both have 32bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any gre key value can match this rule. |
|-------------------|-------------------------------|

<p>| <strong>erspan</strong> (ERSPAN_KEY_VALUE ERSpan_KEY_WILD | any) | <strong>Specify the erspan key value of the flow rule.</strong> ERSpan = Enhanced Remote SPAN. **Valid range for ERSPAN key value is 0-1023 Valid range for ERSPAN key wildcard bits is 0x0-0x3FF ERSpan key value and wildcard bits both have 10bits, If a bit in wildcard |</p>
<table>
<thead>
<tr>
<th>CLI USER GUIDE</th>
<th>PacketMAX Advanced Features</th>
<th>AF1G52AC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>nvgre-vs id</strong></td>
<td>Specify the nvgre vsid value of the flow rule. Nvgre = Network Virtualization using Generic Routing Encapsulation.</td>
<td>is 0 means this bit needs to check, otherwise this bit.</td>
</tr>
<tr>
<td><strong>src ip</strong></td>
<td>Specify the source IPv4 address of the flow rule. Use an IPv4 address and an IPv4 address wildcard to specify a network.</td>
<td>Valid range for NVGRE VSID value is 0-16777215. Valid range for NVGRE VSID wildcard bits is 0x0-0xFFFFF. VSID is located in the low 24 bit of GRE head. VSID value and wildcard bits both have 24 bits. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any nvgre vsid value can match this rule.</td>
</tr>
<tr>
<td><strong>ip_addr</strong></td>
<td>Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv4 address to specify an exactly address.</td>
<td></td>
</tr>
</tbody>
</table>

**nvgre-vs id** (NVGRE_VSID_VALUE NVGRE_VSID_WILD | any)  

**src ip** (IP_ADDR IP_ADDR_WILD | any | host IP_ADDR)
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>dst ip</td>
<td>Specify the destination IPv4 address of the flow rule. Use an IPv4 address and an IPv4 address wildcard to specify a network.</td>
<td>Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g., 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.</td>
</tr>
<tr>
<td>src ipv6</td>
<td>Specify the source IPv6 address of the flow rule. Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.</td>
<td>Use the parameter “host” and an IPv6 address to specify an exactly address. Use the parameter “any” to indicate packets with any destination IPv6 address value can match this rule.</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>dst ipv6 ( IPv6_ADDR</td>
<td>Specify the destination IPv6 address of the flow rule.</td>
<td>Use the parameter “host” and an IPv6 address to specify an exactly address.</td>
</tr>
<tr>
<td>IPv6_ADDR_WILD</td>
<td>any</td>
<td>Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “any” to indicate packets with any destination IPv6 address value can match this rule.</td>
</tr>
<tr>
<td>host IPv6_ADDR )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flow-label ( FLOW_LABEL</td>
<td>Specify the IPv6 Flow label of the flow rule.</td>
<td>Valid range for flow label is 0-1048575. Valid range for flow-label wildcard bits is 0x0-0xFFFFF Flow label value and wildcard bits both have 20bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates ipv6 packets with any flow label value can match this rule.</td>
</tr>
<tr>
<td>LABEL_WILD</td>
<td>any )</td>
<td></td>
</tr>
<tr>
<td>dscp DSCP_VALUE</td>
<td>Specify the DSCP in IPv4 packets value of the inner-match rule. DSCP = Differentiated Services Code Point. Specify the DSCP in IPv4 packets value of the inner-match rule.</td>
<td>0-63</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>DSCP</td>
<td>DSCP = Differentiated Services Code Point. Valid range of DSCP value is 0 - 63.</td>
<td></td>
</tr>
<tr>
<td>ip-precedence</td>
<td>Specify the IP precedence in IPv4 packets of the inner-match rule. Valid range of IP precedence value is 0 - 7.</td>
<td></td>
</tr>
<tr>
<td>PRECEDENCE_VALUE</td>
<td>Specify the IP precedence in IPv4 packets of the inner-match rule. Valid range of IP precedence value is 0 - 7. DSCP &amp; ip precedence configurations are exclusive</td>
<td></td>
</tr>
<tr>
<td>first-fragment</td>
<td>Match packets with first fragment</td>
<td></td>
</tr>
<tr>
<td>non-first-fragment</td>
<td>Match packets with non first fragment</td>
<td></td>
</tr>
<tr>
<td>non-fragment</td>
<td>Match packets with non fragment</td>
<td></td>
</tr>
<tr>
<td>non-or-first-fragment</td>
<td>Match packets with non first fragment</td>
<td></td>
</tr>
<tr>
<td>small-fragment</td>
<td>Match packets with small fragment</td>
<td></td>
</tr>
<tr>
<td>any-fragment</td>
<td>Match packets with any fragment</td>
<td></td>
</tr>
<tr>
<td>options</td>
<td>Match packets with IP options</td>
<td>-</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>truncation</td>
<td>Use this parameter to truncate the packets matched this rule. Use this parameter to truncate the packets matched this rule. The length of truncation is configured by the “truncation” command in global configuration mode.</td>
<td>-</td>
</tr>
<tr>
<td>vlan ( VLAN_ID VLAN_WILD</td>
<td>VLAN_WILD</td>
<td>any )</td>
</tr>
<tr>
<td>inner-vlan ( VLAN_ID VLAN_WILD</td>
<td>VLAN_WILD</td>
<td>any )</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>cos COS_ID</td>
<td>Specify the outer CoS value of the inner-match rule.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CoS = Class of Service. Specify the outer CoS value of the inner-match rule.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CoS = Class of Service.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0-7</td>
<td></td>
</tr>
<tr>
<td>inner-cos COS_ID</td>
<td>Specify the inner CoS value of the inner-match rule.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CoS = Class of Service. Specify the inner CoS value of the inner-match rule.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CoS = Class of Service.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0-7</td>
<td></td>
</tr>
<tr>
<td>ether-type (</td>
<td>Specify the ether-type of the flow rule.</td>
<td></td>
</tr>
<tr>
<td>ETHER_TYPE_VALUE</td>
<td>The valid range for ether-type is</td>
<td></td>
</tr>
<tr>
<td>ETHER_TYPE_WILD_VALUE</td>
<td>0x600-0xFFFF. The valid range for wildcard bits is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>any )</td>
<td></td>
</tr>
</tbody>
</table>
| src-mac (FLOW_MAC_ADDR
FLOW_MAC_ADDR_WILD | any | host FLOW_MAC_ADDR ) | Specify the source mac address |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0x600-0xFFFF. Ether-type value and wildcard bits both have 16 bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any ethertype value can match this rule.</td>
</tr>
</tbody>
</table>
| dest-mac (FLOW_MAC_ADDR
FLOW_MAC_ADDR_WILD | | Specify the destination mac address |
|                     | | Specify the destination mac address in HHHH.HHHH.HHHH format. Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any source mac address value can match this rule. |
any | host  
FLOW_MAC_ADDR )

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edit-macda MAC_ADDRESS</td>
<td>Specify the destination mac address of the outgoing packets in HHHH.HHHH.HHHH format.</td>
</tr>
<tr>
<td>edit-macsa MAC_ADDRESS</td>
<td>Specify the source mac address of the outgoing packets in HHHH.HHHH.HHHH format.</td>
</tr>
<tr>
<td>edit-ipsa IP_ADDRESS</td>
<td>Specify the source IP address of the outgoing packets in A.B.C.D format.</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>edit-ipda IP_ADDRESS</td>
<td>Specify the destination IP address of the outgoing packets</td>
</tr>
<tr>
<td>edit-ipv6sa IPv6_ADDRESS</td>
<td>Specify the source IPv6 address of the outgoing packets.</td>
</tr>
<tr>
<td>edit-ipv6da IPv6_ADDRESS</td>
<td>Specify the destination IPv6 address of the outgoing packets.</td>
</tr>
<tr>
<td>edit-vlan VLAN_ID</td>
<td>Specify the vlan id of the outgoing packets.</td>
</tr>
<tr>
<td>un-tag</td>
<td>Remove vlan tags of the packets.</td>
</tr>
<tr>
<td>un-tag-outer-vlan</td>
<td>Remove outer vlan tag of the packets.</td>
</tr>
<tr>
<td>un-tag-inner-vlan</td>
<td>Remove inner vlan tag of the packets.</td>
</tr>
<tr>
<td>mark-source VLAN_ID</td>
<td>Specify the vlan id of the outgoing packets.</td>
</tr>
<tr>
<td>strip-header (</td>
<td>Remove the outer header of the tunnel packets.</td>
</tr>
<tr>
<td>strip-position ( l2</td>
<td>l3</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>strip-inner-vxlan-header</td>
<td>Remove the inner vxlan header in the erspan packets. Remove the inner vxlan header in the erspan packets. This parameter is only valid when the packet is ERSpan + VXLAN.</td>
</tr>
<tr>
<td>udf udf-id UDF_ID ( udf0 UDF_VALUE</td>
<td>UDF_VALUE_WILD</td>
</tr>
<tr>
<td>inner-match MATCH_NAME</td>
<td>Specify the inner match profile of the flow rule.</td>
</tr>
</tbody>
</table>
### Command Mode

**Flow Configuration**

### Default

None

### Usage

Wildcard bits in this command are used as reversed. That means value and wildcard bits have same length. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit

---

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>add-l2gre</code></td>
<td>Use this action to add L2GRE header. Add L2GRE header. L2GRE SRC IP: L2GRE Source IP L2GRE DEST IP: L2GRE Destination IP L2GRE DEST MAC: L2GRE Destination MAC L2GRE KEY NUM: L2GRE Key Number</td>
</tr>
<tr>
<td><code>add-l3gre</code></td>
<td>Use this action to add L3GRE header. Add L3GRE header. L3GRE SRC IP: L3GRE Source IP L3GRE DEST IP: L3GRE Destination IP L3GRE DEST MAC: L3GRE Destination MAC</td>
</tr>
</tbody>
</table>

---
should be ignored. E.g. IP address 10.10.10.0 wildcard 0.0.0.255 means 256 ip addresses from 10.10.10.0 to 10.10.10.255. Layer 4 information (e.g. tcp/udp port) and fragment information are exclusive. The parameters “erspan” and “edit-valn, un-tag” after “stripe-head” are not supported.

6 Examples

This example shows how to add a flow filter with sequence number 10 to flow f1:

```
Switch(config)# flow f1
Switch(config-flow-f1)# sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any
```

7 Related Commands

no sequence-num
5 UDF Commands

5.1 show udf

1 Command Purpose

Use this command to show the configuration of UDF entries.

2 Command Syntax

show udf (UDF_ID |)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDF_ID</td>
<td>Specify a index to show the configuration of a specific UDF entry.</td>
<td>The range is 0-15</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows the configuration of UDF entries:
Switch# show udf

Udf Global Information:
  Offset Unit : 4 Bytes
Udf Index 0
  Udf Type : l2 header
  Udf Match-Field:
    ether-type 0x8100 0x0
  Offset : n/a|8|n/a
Udf Index 1
  Udf Type : l3 header
  Udf Match-Field: any
  Offset : 4|n/a|n/a|n/a

7 Related Commands

udf

5.2 udf

1 Command Purpose

Use this command to create a UDF entry or enter the configuration mode of a specific DUF entry.

2 Command Syntax

udf UDF_ID ( offset-type OFFSET_TYPE | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDF_ID</td>
<td>Specify a index of a UDF entry.</td>
<td>The range is 0-15</td>
</tr>
<tr>
<td>OFFSET_TYPE</td>
<td>The offset type should be configured when a UDF entry was first created.</td>
<td>The offset type can be l2-header, l3-header, l4-header.</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default

None

5 Usage

The UDF-ID also means the priority of UDF entries, smaller id is a higher priority.

6 Examples

This example shows how to create a UDF entry and enter it’s configuration mode:

```
Switch(config)# udf 1 offset-type l3-header
Switch(config-udf-1)#
```

7 Related Commands

show udf

5.3 match

1 Command Purpose

Use this command to configure the match field for an UDF entry.

2 Command Syntax

```
match ( any | ether-type ETHertype VALUE ETHertype WILD VALUE | ip-protocol ( PROTOCOLNUM | any | tcp | udp | gre | icmp | igmp ) | src-port ( L4_PORT_NUM | any ) | dst-port ( L4_PORT_NUM | any ) | vlan-num VLAN_NUM | mpls-label-num MPLS_LABEL_NUM | )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ether-type</td>
<td>Specify the ether-type of the flow rule.</td>
<td>The valid range for ether-type is 0x600-0xFFFF. The valid range for</td>
</tr>
</tbody>
</table>
wildcard bits is 0x600-0xFFFF. Ether-type value and wildcard bits both have 16bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

<table>
<thead>
<tr>
<th>PROTOCOL_NUM</th>
<th>any</th>
<th>tcp</th>
<th>udp</th>
<th>icmp</th>
<th>igmp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify the IP protocol number of the udf match field.</td>
<td>Specify the IP protocol number of the udf match field.</td>
<td>The valid range for IP protocol number is 0-255.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| L4_PORT_NUM |
| Specify the layer 4 source port of the udf match field. | The valid range for L4 source port number is 0 - 65535. |

| VLAN_NUM |
| The vlan number of the packets | range is 0-2. |

| MPLS_LABEL_NUM |
| The mpls label number of the packets | range is 0-9. |

### 3 Command Mode

UDF Configuration

### 4 Default

None

### 5 Usage

None
6  Examples

This example shows how to configure the match field for an UDF entry:

```
Switch(config-udf-1)# match ether-type 0x8100 0x0 ip-protocol tcp
```

7  Related Commands

show udf

5.4  offset

1  Command Purpose

Use this command to configure the detailed offset value for an UDF entry.

2  Command Syntax

match ( offset0 UDF_OFFSET | offset1 UDF_OFFSET | offset2 UDF_OFFSET | offset3 UDF_OFFSET )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDF_OFFSET</td>
<td>Specifies the offset in bytes from the beginning.</td>
<td>The valid range of the offset is 0-60 bytes.</td>
</tr>
</tbody>
</table>

3  Command Mode

UDF Configuration

4  Default

None

5  Usage

The offset number must be multiple of 4 bytes because UDF would extract 4 bytes data from a specific offset in packets.
6  Examples

This example shows how to configure the detailed offset value for an UDF entry:

```
Switch(config-udf-1)# offset offset0 4 offset1 20 offset3 36
```

7  Related Commands

show udf
6 PORT-GROUP Commands

6.1 port-group

1 Command Purpose

Use this command to create a port-group and enter the port-group configuration mode.

Use the no form of this command to delete the port-group.

2 Command Syntax

`port-group NAME_STRING ( PORT_GROUP_ID | )`  
`no port-group NAME_STRING`

3 Command Mode

Global Configuration

4 Default

None
5  Usage

This device supports at most 48 port-groups.

6  Examples

The following example shows how to add a port-group:

```
Switch(config)# port-group portgroup1
Switch(config-port-portgroup1)#
```

The following example shows how to delete a port-group:

```
Switch(config)# no port-group portgroup1
```

7  Related Commands

show port-group

6.2  member interface

1  Command Purpose

Use this command to add a member interface in port-group.

Use the no form of this command to delete the member interface.

2  Command Syntax

member interface IF_NAME_EA

no member interface IF_NAME_EA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME_EA</td>
<td>member interface Name string</td>
<td>Specify the interface name to enter the mode. e.g.eth-0-1, agg1.</td>
</tr>
</tbody>
</table>
3 Command Mode

Port-group Configuration

4 Default

None

5 Usage

This device supports at most 16 member interface.

6 Examples

The following example shows how to add a member interface in port-group:

```
Switch(config-port-portgroup1)# member interface eth-0-1
```

The following example shows how to delete a member interface in port-group:

```
Switch(config-port-portgroup1)# no member interface eth-0-1
```

7 Related Commands

show port-group

6.3 show port-group

1 Command Purpose

Use this command to display the configurations of port-group.

2 Command Syntax

```
show port-group ( NAME_STRING | )
```

| Parameter | Parameter Description | Parameter Value |
### 3 Command Mode

Privileged EXEC

### 4 Default

None

### 5 Usage

If the parameter “NAME_STRING” is not specified, the command indicates that all port-groups on this device should be displayed; otherwise only the specified port-group should be displayed.

### 6 Examples

The following example shows how to display the configurations port-group portgroup1:

```
Switch# show port-group
port-group portgroup1 1
  member interface eth-0-1
  member interface eth-0-2
```

### 7 Related Commands

show port-group flow statistics

#### 6.4 show port-group flow statistics

### 1 Command Purpose

Use this command to display the statistics of port-group.
2 Command Syntax

show port-group flow statistics NAME_STRING (FLOW_SEQ_NUM | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>Specify the port-group name to show</td>
<td>-</td>
</tr>
<tr>
<td>FLOW_SEQ_NUM</td>
<td>Specify sequence-number to show flow statistics. If the sequence-number is not specified, this command indicates that all rules on this interface should be shown.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

The specified port-group statistics should be displayed.

6 Examples

The following example shows how to display the statistics port-group portgroup1:

```
Switch# show port-group flow statistics
portgroup1
TAP group name: tapgroup1
  flow name: flow1
    sequence-num 10 permit gre src-ip any dst-ip any ( bytes 0 packets 0 )
    sequence-num 20 permit mpls any ( bytes 0 packets 0 )
  (total bytes 0 total packets 0 )
```
7  Related Commands

show port-group
## 7 INNER-MATCH Commands

### 7.1 show inner-match

#### 1 Command Purpose

Use this command to show the configuration of inner-match.

#### 2 Command Syntax

```
show inner-match ( INNER_MATCH_NAME | )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INNER_MATCH_NAME</td>
<td>Specify an inner-match name to display.</td>
<td>The inner match name should begin with [a-z/A-Z/0-9], valid characters are [0-9A-Za-z-], and maximum length is 20 characters. If the parameter “INNER_MATCH_NAME” is not specified, the command indicates that all inner-matches on this device should be displayed; otherwise only the specified one should be displayed</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows the configuration of all inner-match:

```
Switch# show inner-match
inner-match im1
  sequence-num 1 match icmp src-ip any dst-ip any vlan any
inner-match im2
  sequence-num 1 match udp dst-port eq 4758 src-ip any dst-ip host 2.2.2.2
```

7 Related Commands

inner-match

7.2 inner-match

1 Command Purpose

Use this command to create inner-match and then enter Inner-match configuration mode.

Use the no form of this command to delete the inner-match.

2 Command Syntax

inner-match INNER_MATCH_NAME

    no inner-match INNER_MATCH_NAME
### Global Configuration

#### 4 Default

None

#### 5 Usage

If the system already has an inner-match with the same name, this command will enter the inner-match configuration mode.

When the name is not used by any inner-match, this command is to create the inner-match firstly and then enter the inner-match configuration mode.

#### 6 Examples

This example shows how to create a inner-match named im1 and then enter the inner-match configuration mode:

```
Switch(config)# inner-match im1
Switch(config-inner-match-im1)#
```

This example shows how to delete a inner-match named im1:

```
Switch(config)# no inner-match im1
```
7 Related Commands

show inner-match

7.3 remark

1 Command Purpose

Use this command to add remarks for the inner-match.

2 Command Syntax

remark NAME_STRING

no remark

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>Remark string for the inner-match</td>
<td>Begin with a-z/A-Z/0-9, valid characters are 0-9A-Za-z.-, maximum length is 100 characters.</td>
</tr>
</tbody>
</table>

3 Command Mode

Inner-match Configuration

4 Default

None

5 Usage

None
6 Examples

This example shows how to add a remark to describe the inner-match:

```
Switch(config-inner-match-im1)# remark inner-match-1
```

This example shows how to delete the remark of the inner-match:

```
Switch(config-inner-match-im1)# no remark
```

7 Related Commands

show inner-match

7.4 no sequence-num

1 Command Purpose

Use this command to delete a filter from inner-match.

2 Command Syntax

no sequence-num MATCH_SEQ_NUM

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATCH_SEQ_NUM</td>
<td>Sequence-number with the valid range 1 - 65535.</td>
<td>1-65535</td>
</tr>
</tbody>
</table>

3 Command Mode

Inner-match Configuration

4 Default

None
5 Usage

None

6 Examples

This example shows how to delete an inner-match filter with sequence number 10 from im1:

```
Switch(config-inner-match-im1)# no sequence-num 10
```

7 Related Commands

show inner-match

match

7.5 sequence-num

1 Command Purpose

Use this command to set matching rules for the inner-match filter.

2 Command Syntax

```
(sequence-num MATCH_SEQ_NUM | ) match ( PROTOCOL_NUM | any | mpls ( any | label-num ( any | MPLS_LABEL_NUMWITHOUT_0 ) | mpls-label1 ( any | FLOW_LABEL_VALUE ) | ) | mpls-label2 ( any | FLOW_LABEL_VALUE ) | ) | mpls-label3 ( any | FLOW_LABEL_VALUE ) | ) | ppoe ppp-type ( ipv4 | ipv6 ) | tcp ( src-port ( range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any ) | dst-port ( range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any ) | tcp-code ( match-all | match-any ) ( ack | fin | psh | rst | syn | urg ) | ) | udp ( src-port ( range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any ) | dst-port ( range L4_PORT_NUM1 L4_PORT_NUM2 | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any ) | ) | icmp | igmp ) ( src-ip ( IP_ADDR IP_ADDR_WILD | any | host IP_ADDR ) | src-ipv6 ( IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR ) ) ( dst-ip ( IP_ADDR IP_ADDR_WILD | any | host IPv6_ADDR ) |)
```
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sequence-num MATCH_SEQ_NUM</td>
<td>Specify a sequence number to create the inner-match rule.</td>
<td>The valid range for sequence number is 1-65535. If the sequence number is not specified, system should automatically assign one number according to the base number and the step length. The base number is the maximum number in the inner-match (0 for empty inner-match), the step length is 10.</td>
</tr>
<tr>
<td>match</td>
<td>Match the packets according to the rule</td>
<td>-</td>
</tr>
<tr>
<td>PROTOCOL_NUM</td>
<td>any</td>
<td>tcp</td>
</tr>
</tbody>
</table>
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<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>e.g. IP protocol</strong></td>
<td>1 = icmp, 2 = igmp, 6 = tcp, 17 = udp. Parameter “any” indicates packets with any IP protocol can match this rule.</td>
<td></td>
</tr>
<tr>
<td>**mpls (any</td>
<td>label-num**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(any</td>
<td>MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(any</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(any</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(any</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Specify the mpls label of the flow rule.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>**pppoe ppp-type (ipv4</td>
<td>ipv6)**</td>
<td></td>
</tr>
<tr>
<td><strong>Specify the pppoe ppp-type of the flow rule.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>src-port ( range L4_PORT_NUM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L4_PORT_NUM</td>
<td>eq</td>
</tr>
<tr>
<td></td>
<td>L4_PORT_NUM</td>
<td>gt</td>
</tr>
<tr>
<td></td>
<td>L4_PORT_NUM</td>
<td>lt</td>
</tr>
</tbody>
</table>
| | L4_PORT_NUM | any |)
<p>| <strong>Specify the layer 4 source port of the inner-match rule.</strong> |   |   |</p>
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dst-port (range)</td>
<td>Specify the layer 4 destination port of the inner-match rule. The valid range for L4 destination port number is 0 - 65535. This field is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than) 3, gt (greater than) 4, range Parameter “any” indicates packets with any L4 port can match this rule.</td>
</tr>
<tr>
<td>L4_PORT_NUM</td>
<td></td>
</tr>
<tr>
<td>eq</td>
<td></td>
</tr>
<tr>
<td>gt</td>
<td></td>
</tr>
<tr>
<td>lt</td>
<td></td>
</tr>
<tr>
<td>any</td>
<td></td>
</tr>
<tr>
<td>src-ip (IP_ADDR</td>
<td>Specify the source IPv4 address of the inner-match rule. Use an IPv4 address and an IPv4 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv4 address to specify an exactly address. Use the parameter “any” to indicate packets with</td>
</tr>
<tr>
<td>IP_ADDR_WILD</td>
<td>any</td>
</tr>
<tr>
<td>dst-ip ( IP_ADDR</td>
<td>IP_ADDR_WILD</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>any source IPv4 address value can match this rule.</td>
</tr>
</tbody>
</table>

| src-ipv6 ( IPv6_ADDR | IPv6_ADDR_WILD | any | host IPv6_ADDR ) | Specify the source IPv6 address of the inner-match rule. |
|---------------------|----------------|-----|----------------|
| Use an IPv6 address and an IPv6 address wildcard to specify a network (e.g. 192.168.1.1 0.0.0.255). If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv6 address to specify an exactly address. Use the parameter “any” to indicate packets with any destination IPv4 address value can match this rule. |

<p>| Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv6 address to specify an exactly address. Use the parameter “any” to indicate packets with |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>dst-ipv6</strong></td>
<td>Specify the destination IPv6 address of the inner-match rule.</td>
<td>Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and an IPv6 address to specify an exactly address. Use the parameter “any” to indicate packets with any destination IPv6 address value can match this rule.</td>
</tr>
<tr>
<td>IPv6_ADDR_WILD</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>any</code></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>host</code> IPv6_ADDR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>|                  | Specify the IPv6 Flow label of the inner-match rule.             | Valid range for flow label is 0-1048575. Valid range for flow-label wildcard bits is 0x0-0xFFFFF Flow label value and wildcard bits both have 20bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates ipv6 packets with any flow label value can match this rule. |
| flow-label       |                                                                 |                                                                 |
| FLOW_LABEL_WILD  |                                                                 |                                                                 |
| <code>any</code>            |                                                                 |                                                                 |</p>
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>dscp DSCP_VALUE</td>
<td>Specify the DSCP in IPv4 packets value of the inner-match rule.</td>
<td>0-63</td>
</tr>
<tr>
<td></td>
<td>DSCP = Differentiated Services Code Point.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specify the DSCP in IPv4 packets value of the inner-match rule.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DSCP = Differentiated Services Code Point.</td>
<td></td>
</tr>
<tr>
<td>ip-precedence PRECEDENCE_VALUE</td>
<td>Specify the IP precedence in IPv4 packets of the inner-match rule.</td>
<td>0-7</td>
</tr>
<tr>
<td></td>
<td>DSCP &amp; ip precedence configurations are exclusive.</td>
<td></td>
</tr>
<tr>
<td>first-fragment</td>
<td>Match packets with first fragment</td>
<td>-</td>
</tr>
<tr>
<td>non-first-fragment</td>
<td>Match packets with non first fragment</td>
<td>-</td>
</tr>
<tr>
<td>non-fragment</td>
<td>Match packets with non fragment</td>
<td>-</td>
</tr>
<tr>
<td>non-or-first-fragment</td>
<td>Match packets with non first fragment</td>
<td>-</td>
</tr>
<tr>
<td>small-fragment</td>
<td>Match packets with small fragment</td>
<td>-</td>
</tr>
<tr>
<td>any-fragment</td>
<td>Match packets with any fragment</td>
<td>-</td>
</tr>
</tbody>
</table>
### PacketMAX Advanced Features

#### Options

<table>
<thead>
<tr>
<th>options</th>
<th>Match packets with IP options</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>**vlan (VLAN_ID VLAN_WILD</td>
<td>any )**</td>
<td>Specify the outer vlan id of the inner-match rule.</td>
</tr>
<tr>
<td>**inner-vlan (VLAN_ID VLAN_WILD</td>
<td>any )**</td>
<td>Specify the inner vlan id of the inner-match rule.</td>
</tr>
<tr>
<td><strong>cos COS_ID</strong></td>
<td>Specify the outer CoS value of the inner-match</td>
<td>0-7</td>
</tr>
<tr>
<td>CLI USER GUIDE</td>
<td>PacketMAX Advanced Features</td>
<td>AF1G52AC</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
| | **Rule.**  
**CoS** = Class of Service.  
Specify the outer CoS value of the inner-match rule.  
**CoS** = Class of Service.  | |
| **inner-cos COS_ID** | Specify the inner CoS value of the inner-match rule.  
**CoS** = Class of Service.  
Specify the inner CoS value of the inner-match rule.  
**CoS** = Class of Service. | **0-7** |
| **ether-type (**  
**ETHER_TYPE_VALUE**  
**ETHER_TYPE_WILD_VALUE**  
| any | **Specify the ether-type of the inner-match rule.**  
**Specify the ether-type of the inner-match rule.**  
**Specify the ether-type of the inner-match rule.** | **The valid range for ether-type is 0x600-0xFFFF.**  
**The valid range for wildcard bits is 0x600-0xFFFF.**  
**Ether-type value and wildcard bits both have 16bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.**  
**Parameter “any” indicates packets with any ethertype value can match this rule.** |
| **src-mac (**  
**MATCH_MAC_ADDR** | **Specify the source mac address in** | **Use a mac address and wildcard bits to specify a** |
### MATCH_MAC_ADDR_WILD | HHHH.HHHH.HHHH format.
- **any** | host MATCH_MAC_ADDR

| dest-mac ( MATCH_MAC_ADDR MATCH_MAC_ADDR_WILD | any | host MATCH_MAC_ADDR ) | Specify the destination mac address in HHHH.HHHH.HHHH format. |
|-----------------|-----------------------------------------------|

| batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any source mac address value can match this rule. |

| Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any destination mac address value can match this rule. |}

### 3  Command Mode

**Inner-match Configuration**
4 Default

None

5 Usage

Wildcard bits in this command are used as reversed. That means value and wildcard bits have same length, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

E.g.: ip address 10.10.10.0 wildcard 0.0.0.255 means 256 ip addresses from 10.10.10.0 to 10.10.10.255.

Layer 4 information (e.g. tcp/udp port) and fragment information are exclusive.

6 Examples

This example shows how to add an inner-match filter with sequence number 10 to im1:

```
Switch(config)# inner-match im1
Switch(config-inner-match-im1)# sequence-num 10 match any src-ip 10.10.10.0 0.0.0.255 dst-ip any
```

7 Related Commands

no sequence-num
8

ACL Commands

8.1  show interface egress ip access-list

1  Command Purpose

Use this command to show egress statistics of ip access-list on an interface.

2  Command Syntax

show interface egress ip access-list statistics IF_NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name to show IP ACL statistics. This command supports physical or link aggregation interfaces.</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Privileged EXEC

4  Default

None

5  Usage

The interface name must be specified.
6  Examples

This example shows the egress ip access-list statistic of interface eth-0-1:

```
Switch# show interface egress ip access-list statistics eth-0-1
  egress flow f2
  sequence-num 10 permit tcp src-port range 10 200 src-ip any dst-ip any ( bytes 124 packets 1 )
  (total bytes 124 total packets 1 )
```

7  Related Commands

clear interface egress ip access-list

8.2  clear interface egress ip access-list

1  Command Purpose

Use this command to clear egress statistics of ip access-list on an interface.

2  Command Syntax

clear interface egress ip access-list statistics IF_NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name to clear IP ACL statistics.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>This command supports physical or link aggregation interfaces.</td>
<td></td>
</tr>
</tbody>
</table>

3  Command Mode

Privileged EXEC
4 Default

None

5 Usage

The interface name must be specified.

6 Examples

This example shows how to clear the egress ip access-list statistic of interface eth-0-1:

```
Switch# clear interface egress ip access-list statistics eth-0-1
```

This example shows the egress ip access-list statistic of interface eth-0-1:

```
Switch# show interface egress ip access-list statistics eth-0-1
egress flow f2
sequence-num 10 permit tcp src-port range 10 200 src-ip any dst-ip any ( bytes 0 packets 0 )
(total bytes 0 total packets 0 )
```

7 Related Commands

show interface egress ip access-list

8.3 show ip access-list

1 Command Purpose

Use this command to show the configuration of ip access-list.

2 Command Syntax

```
show ip access-list ( NAME_STRING | )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>Ip access-list name</td>
<td>up to 20 characters</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows the configuration of ip access-list:

```
Switch# show ip access-list
ip access-list f2
  sequence-num 10 permit tcp src-port range 10 200 src-ip any dst-ip any
```

7 Related Commands

ip access-list

8.4 ip access-list

1 Command Purpose

Use this command to create IP ACL and then enter IP ACL configuration mode.

Use the no form of this command to delete the IP ACL.

2 Command Syntax

ip access-list NAME_STRING

no ip access-list NAME_STRING
3 Command Mode

Global Configuration

4 Default

None

5 Usage

If the system already has an IP ACL with the same name, this command will enter the IP ACL configuration mode.

When the name is not used by any ACL, this command is to create the IP ACL firstly and then enter the IP ACL configuration mode.

6 Examples

This example shows how to create an IP ACL named f1 and then enter the IP ACL configuration mode:

```
Switch(config)# ip access-list f1
Switch(config-acl-f1)#
```

7 Related Commands

show ip access-list

8.5 remark

1 Command Purpose

Use this command to add remarks for the flow or ip access-list.
2  Command Syntax

remark NAME_STRING

no remark

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>Remark string for the IP ACL</td>
<td>Begin with a-z/A-Z/0-9, valid characters are 0-9A-Za-z.-, maximum length is 100 characters.</td>
</tr>
</tbody>
</table>

3  Command Mode

ACL Configuration

4  Default

None

5  Usage

None

6  Examples

This example shows how to add a remark to describe the IP ACL:

```
Switch(config-acl-acl1)# remark acl1ipdeny
```

This example shows how to remove the remark:

```
Switch(config-acl-acl1)# no remark
```

7  Related Commands

show ip access-list
8.6 no sequence-num

1 Command Purpose

Use this command to delete a filter from ip access-list.

2 Command Syntax

no sequence-num ACL_SEQ_NUM

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACL_SEQ_NUM</td>
<td>Sequence-number with the valid range 1-65535.</td>
<td>1-65535</td>
</tr>
</tbody>
</table>

3 Command Mode

ACL Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to delete a flow filter with sequence number 10 from ip acl acl1:

```
Switch(config-acl-acl1)# no sequence-num 10
```

7 Related Commands

show ip access-list

sequence-num
8.7 sequence-num

1 Command Purpose

Use this command to permit or deny packets matching the ip access-list filter.

2 Command Syntax

```
(sequence-num ACL_SEQ_NUM | ) ( permit | deny ) ( PROTOCOL_NUM | any | mpls ( any | label-num
( any | MPLS_LABEL_NUM_WITHOUT_0 ) ( mpls-label1 ( any | FLOW_LABEL_VALUE
| ) ) ( mpls-label2 ( any | FLOW_LABEL_VALUE ) | ) ) ) pppoe ppp-type ( ipv4 | ipv6 )
tcp ( src-port ( range
L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any ) )
dst-port ( range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any )
tcp-code ( match-all | match-any ) ( ack | fin | psh | rst | syn | urg ) ) ) | udp ( src-port ( range
L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any )
dst-port ( range L4_PORT_NUM L4_PORT_NUM | eq L4_PORT_NUM | gt L4_PORT_NUM | lt L4_PORT_NUM | any )
src-ip ( IP_ADDR IP_ADDR_WILD | any ) | host IP_ADDR ) | src-ipv6 ( IPv6_ADDR
IPv6_ADDR_WILD | any | host IPv6_ADDR ) ) | dst-ip ( IP_ADDR IP_ADDR_WILD | any
| host IP_ADDR ) | dst-ipv6 ( IPv6_ADDR IPv6_ADDR_WILD | any | host IPv6_ADDR ) )
( flow-label ( *FLOW_LABEL LABEL _WILD* | any ) | ) ( dscp DSCP_VALUE | ip-precedence
PRECEDENCE_VALUE | ) ) ( first-fragment | non-first-fragment | non-fragment | non-or-first-fragment | small-fragment | any-fragment | ) ( options
| ) ( vlan ( VLAN_ID VLAN_WILD | any ) | ) ( inner-vlan ( VLAN_ID VLAN_WILD | any
| ) | ) | cos COS_ID | ) | inner-cos COS_ID | ) | ether-type ( ETHER_TYPE_VALUE
ETHER_TYPE_WILD_VALUE | any ) | ) | src-mac ( ACL_MAC_ADDR
ACL_MAC_ADDR_WILD | any | host ACL_MAC_ADDR ) | ) ( dest-mac ( ACL_MAC_ADDR ACL_MAC_ADDR_WILD | any | host ACL_MAC_ADDR ) | ) ( ( ipv4-head | l4-head ) UDF_VALUE UDF_VALUE_WILD UDF_OFFSET | )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>sequence-num</th>
<th>ACL_SEQ_NUM</th>
<th>Specify a sequence number to create the acl rule.</th>
<th>The valid range for sequence number is 1-65535. If the sequence number is not specified, system should automatically assign one number according to the base number and the step length. The base number is the maximum number in the flow (0 for empty flow), the step length is 10.</th>
</tr>
</thead>
<tbody>
<tr>
<td>permit</td>
<td></td>
<td>Specify the action of the acl rule. Use the parameter “permit” to indicate packets match this rule is allowed to forward.</td>
<td>-</td>
</tr>
<tr>
<td>deny</td>
<td></td>
<td>Specify the action of the acl rule. Use the parameter “deny” to indicate packets match this rule is not allowed to forward.</td>
<td>-</td>
</tr>
<tr>
<td>PROTOCOL_NUM</td>
<td>any</td>
<td>tcp</td>
<td>udp</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mpls (any</td>
<td>label-num (any</td>
<td>MPLS_LABEL_NUM_WITHOUT_0) (mpls-label1 (any</td>
<td>FLOW_LABEL_VALUE)</td>
</tr>
<tr>
<td>pppoe ppp-type (ipv4</td>
<td>ipv6)</td>
<td>Specify the pppoe ppp-type of the flow rule.</td>
<td></td>
</tr>
<tr>
<td>src-port ( range L4_PORT_NUM L4_PORT_NUM</td>
<td>eq L4_PORT_NUM</td>
<td>gt L4_PORT_NUM</td>
<td>lt L4_PORT_NUM</td>
</tr>
</tbody>
</table>

Parameter “any” indicates packets with any IP protocol can match this rule.

The mpls label number is 0-9. It can match 3 layers of MPLS label values at most.

The ppp-type is ipv4 or ipv6.

The valid range for L4 source port number is 0 - 65535. This field is valid only if the IP protocol is TCP or UDP.

There are 4 methods to specify the L4 port:
1. eq (equal to)
2. lt (less than)
3. gt (greater than)
4. range
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dst-port (range L4_PORT_NUM)</td>
<td>Specify the layer 4 destination port of the acl rule. The valid range for L4 destination port number is 0 - 65535. This field is valid only if the IP protocol is TCP or UDP. There are 4 methods to specify the L4 port: 1, eq (equal to) 2, lt (less than) 3, gt (greater than) 4, range Parameter “any” indicates packets with any L4 port can match this rule.</td>
</tr>
<tr>
<td>src-ip (IP_ADDR IP_ADDR_WILD</td>
<td>any</td>
</tr>
<tr>
<td>dst-ip ( IP_ADDR</td>
<td>IP_ADDR_WILD</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>src-ipv6 ( IPv6_ADDR</td>
<td>IPv6_ADDR_WILD</td>
</tr>
<tr>
<td>CLI Command</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>`dst-ipv6 (IPv6_ADDR</td>
<td>Specify the destination IPv6 address of the acl rule.</td>
</tr>
<tr>
<td>IPv6_ADDR_WILD</td>
<td>any)</td>
</tr>
<tr>
<td>host IPv6_ADDR</td>
<td></td>
</tr>
</tbody>
</table>

Use an IPv6 address and an IPv6 address wildcard to specify a network. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

Use the parameter “host” and an IPv6 address to specify an exactly address.

Use the parameter “any” to indicate packets with any destination IPv6 address value can match this rule.

<table>
<thead>
<tr>
<th>CLI Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>`flow-label (FLOW_LABEL</td>
<td>Specify the IPv6 Flow label of the acl rule.</td>
</tr>
<tr>
<td>LABEL_WILD</td>
<td>any)</td>
</tr>
</tbody>
</table>

Valid range for flow label is 0-1048575. Valid range for flow-label wildcard bits is 0x0-0xFFFFF

Flow label value and wildcard bits both have 20bits, if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

Parameter “any” indicates ipv6 packets with any flow label value can match this rule.
<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>dscp DSCP_VALUE</td>
<td>Specify the DSCP in IPv4 packets value of the acl rule. DSCP = Differentiated Services Code Point. Specify the DSCP in IPv4 packets value of the acl rule.</td>
<td>DSCP = Differentiated Services Code Point.</td>
</tr>
<tr>
<td>ip-precedence PRECEDENCE_VALUE</td>
<td>Specify the IP precedence in IPv4 packets of the acl rule. DSCP &amp; ip precedence configurations are exclusive</td>
<td>Valid range of IP precedence value is 0 - 7.</td>
</tr>
<tr>
<td>first-fragment</td>
<td>Match packets with first fragment</td>
<td>-</td>
</tr>
<tr>
<td>non-first-fragment</td>
<td>Match packets with non first fragment</td>
<td>-</td>
</tr>
<tr>
<td>non-fragment</td>
<td>Match packets with non fragment</td>
<td>-</td>
</tr>
<tr>
<td>non-or-first-fragment</td>
<td>Match packets with non first fragment</td>
<td>-</td>
</tr>
<tr>
<td>small-fragment</td>
<td>Match packets with small fragment</td>
<td>-</td>
</tr>
<tr>
<td>any-fragment</td>
<td>Match packets with any fragment</td>
<td>-</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>options</td>
<td>Match packets with IP options</td>
<td>-</td>
</tr>
<tr>
<td>vlan ( VLAN_ID VLAN_WILD</td>
<td>any )</td>
<td>Specify the outer vlan id of the acl rule.</td>
</tr>
<tr>
<td>inner-vlan ( VLAN_ID VLAN_WILD</td>
<td>any )</td>
<td>Specify the inner vlan id of the acl rule.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Valid Range</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>cos COS_ID</td>
<td>Specify the outer CoS value of the acl rule. CoS = Class of Service.</td>
<td>The valid range of Cos is 0 to 7.</td>
</tr>
<tr>
<td>inner-cos COS_ID</td>
<td>Specify the inner CoS value of the acl rule. CoS = Class of Service.</td>
<td>The valid range of Cos is 0 to 7.</td>
</tr>
<tr>
<td>ether-type (\text{ETHER_TYPE_VALUE} \mid \text{ETHER_TYPE_WILD_VALUE} \mid \text{any})</td>
<td>Specify the ether-type of the acl rule.</td>
<td>The valid range for wildcard bits is 0x600-0xFFFF. Ether-type value and wildcard bits both have 16bits; if a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Parameter “any” indicates packets with any ethertype value can match this rule.</td>
</tr>
<tr>
<td>src-mac (\text{ACL_MAC_ADDR} \mid \text{ACL_MAC_ADDR_WILD} \mid \text{any} \mid \text{host ACL_MAC_ADDR})</td>
<td>Specify the source mac address in HHHH.HHHH.HHHH format.</td>
<td>Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to</td>
</tr>
<tr>
<td>dest-mac (</td>
<td>Specify the destination mac address in HHHH.HHHH.HHHH format.</td>
<td></td>
</tr>
<tr>
<td>ACL_MAC_ADDR</td>
<td>Use a mac address and wildcard bits to specify a batch of mac addresses. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. Use the parameter “host” and a mac address to specify an exactly mac address. Use the parameter “any” to indicate packets with any destination mac address value can match this rule.</td>
<td></td>
</tr>
<tr>
<td>ACL_MAC_ADDR_WILD</td>
<td>UDF = User Define Format. The parameter “ipv4-head” indicates the packet is parsed at the beginning with the IPv4 header. The parameter “l4-head”</td>
<td></td>
</tr>
<tr>
<td>any</td>
<td>host ACL_MAC_ADDR</td>
<td>Udf value and wildcard bits both have 32 bits, If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored. The parameter</td>
</tr>
</tbody>
</table>
3 Command Mode

ACL Configuration

4 Default

None

5 Usage

Wildcard bits in this command are used as reversed. That means value and wildcard bits have same length. If a bit in wildcard is 0 means this bit needs to check, otherwise this bit should be ignored.

E.g.: ip address 10.10.10.0 wildcard 0.0.0.255 means 256 ip addresses from 10.10.10.0 to 10.10.10.255.

Layer 4 information (e.g. tcp/udp port) and fragment information are exclusive.

6 Examples

Create a rule with sequence number 10:

Switch(config)# ip access-list acl1
Switch(config-acl-acl1)# sequence-num 10 permit any src-ip 10.10.10.0 0.0.0.255 dst-ip any

7 Related Commands

no sequence-num

    show ip access-list
9 TAP Commands

9.1 tap-group

1 Command Purpose

Use this command to create a TAP group and enter the tap configuration mode.

Use the no form of this command to delete the TAP group.

2 Command Syntax

```
tap-group TAPNAME (NUM | )
no tap-group TAPNAME
```

3 Command Mode

Global Configuration

4 Default

None
5 Usage

This device supports at most 512 TAP groups.

6 Examples

The following example shows how to add an egress-interface agg1:

```
Switch(config)# tap-group tap1
Switch(config-tap-tap1)#
```

The following example shows how to delete a tap-group:

```
Switch(config)# no tap-group tap1
```

7 Related Commands

show tap-group

9.2 description

1 Command Purpose

Use this command to set the description of the TAP group.

Use the no form of this command to delete the description.

2 Command Syntax

description LINE

```
no description
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINE</td>
<td>TAP group description string</td>
<td>Begin with a-z/A-Z, valid characters are 0-9A-Za-z., maximum length is 80 characters</td>
</tr>
</tbody>
</table>
3 **Command Mode**

tap-group Configuration

4 **Default**

None

5 **Usage**

None

6 **Examples**

The following example shows how to config description:

```
Switch(config)# tap-group test001
Switch(config-tap-test001)# description test
Switch(config-tap-test001)#
```

7 **Related Commands**

tap-group

    show tap-group

9.3 **ingress**

1 **Command Purpose**

Use this command to add a physical, link aggregation interface or port-group to the ingress direction of the TAP group.

This command can specify Vlan id and edit actions to the packets.

Use the no form of this command to remove the interface.
2 Command Syntax


no ingress IF\_NAME

ingress ( IF\_NAME | PORTGROUP\_NAME ) flow FLOW\_NAME ( un-tag | un-tag-outer-vlan | un-tag-inner-vlan | mark-source VLAN\_ID | )

no ingress IF\_NAME flow FLOW\_NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>This command supports physical or link aggregation interfaces.</td>
<td></td>
</tr>
<tr>
<td>un-tag</td>
<td>Remove vlan tags of the packets.</td>
<td>-</td>
</tr>
<tr>
<td>un-tag-outer-vlan</td>
<td>Remove outer vlan tag of the packets.</td>
<td>-</td>
</tr>
<tr>
<td>un-tag-inner-vlan</td>
<td>Remove inner vlan tag of the packets.</td>
<td>-</td>
</tr>
<tr>
<td>mark-source</td>
<td>Specify additional outer vlan id of the outgoing packets.</td>
<td></td>
</tr>
<tr>
<td>VLAN_ID</td>
<td>Specify additional outer vlan id of the outgoing packets.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The valid range for vlan id is 1 - 4094.</td>
<td></td>
</tr>
<tr>
<td>truncation</td>
<td>To truncate the packet.</td>
<td>-</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
<td>Format</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>edit-macda MAC_ADDRESS</td>
<td>Specify the destination MAC address of the outgoing packets.</td>
<td>HHHH.HHHH.HHHH format.</td>
</tr>
<tr>
<td>edit-macsa MAC_ADDRESS</td>
<td>Specify the source MAC address of the outgoing packets.</td>
<td>HHHH.HHHH.HHHH format.</td>
</tr>
<tr>
<td>edit-ipsa IP_ADDRESS</td>
<td>Specify the source IP address of the outgoing packets.</td>
<td>A.B.C.D format.</td>
</tr>
<tr>
<td>edit-ipda IP_ADDRESS</td>
<td>Specify the destination IP address of the outgoing packets.</td>
<td>A.B.C.D format.</td>
</tr>
<tr>
<td>edit-vlan VLAN_ID</td>
<td>Specify the VLAN ID of the outgoing packets.</td>
<td>The valid range for VLAN ID is 1 - 4094.</td>
</tr>
<tr>
<td>edit-ipv6sa IPv6_ADDRESS</td>
<td>Specify the source IPv6 address of the outgoing packets.</td>
<td>::-ffff:ffff:ffff:ffff:ffff:ffff::</td>
</tr>
<tr>
<td>edit-ipv6da IPv6_ADDRESS</td>
<td>Specify the destination IPv6 address of the outgoing packets.</td>
<td>::-ffff:ffff:ffff:ffff:ffff:ffff::</td>
</tr>
<tr>
<td>PORTGROUP_NAME</td>
<td>Specify the name of port-group.</td>
<td>The first character should be a-z or A-Z, character</td>
</tr>
</tbody>
</table>
### 3 Command Mode

tap-group Configuration

### 4 Default

None

### 5 Usage

One interface without configuring a flow can only add to one TAP group.

Same interface with and without configuring a flow cannot exist in one TAP group.

### 6 Examples

The following example shows how to add an ingress-interface with mark-source 100:

```
Switch(config)# tap-group test001
Switch(config-tap-test001)# ingress eth-0-1 mark-source 100
Switch(config-tap-test001)#
```

The following example shows how to add an ingress-interface with un-tag:

```
Switch(config)# tap-group test001
Switch(config-tap-test001)# ingress eth-0-1 un-tag
Switch(config-tap-test001)#
```

The following example shows how to add an ingress-interface with flow flow001:

```
Switch(config)# tap-group test001
Switch(config-tap-test001)# ingress eth-0-1 flow flow001
Switch(config-tap-test001)#
```

The following example shows how to add an ingress interface eth-0-1:

```
Switch(config)# tap-group tap1
Switch(config-tap-tap1)# ingress eth-0-1
```

The following example shows how to add an ingress interface agg1:
Switch(config)# interface eth-0-2
Switch(config-if-eth-0-2)# static-channel-group 1
Switch(config-if-eth-0-2)# exit
Switch(config)# tap-group tap1
Switch(config-tap-tap1)# ingress aggl

The following example shows how to add an ingress interface eth-0-1 and remark source vlan id as 300:

Switch(config)# tap-group tap1
Switch(config-tap-tap1)# ingress eth-0-1 mark-source 300

7 Related Commands

tap-group

egress

9.4 egress

1 Command Purpose

2 Command Syntax

egress IF_NAME (timestamp | )

no egress IF_NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name. This command supports physical or link aggregation interfaces.</td>
<td>-</td>
</tr>
<tr>
<td>timestamp</td>
<td>Add timestamp for packets on egress interfaces.</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

tap-group Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to add an egress-interface eth-0-9:

```
Switch(config)# tap-group tap1
Switch(config-tap-tap1)# egress eth-0-9
```

The following example shows how to add an egress-interface agg1:

```
Switch(config)# interface eth-0-10
Switch(config-if-eth-0-10)# static-channel-group 1
Switch(config)# interface eth-0-11
Switch(config-if-eth-0-11)# static-channel-group 1
Switch(config)# tap-group tap1
Switch(config-tap-tap1)# egress agg1
```

7 Related Commands

tap-group

9.5 show tap-group

1 Command Purpose

This command displays the TAP group configurations.

2 Command Syntax

show tap-group (TAPNAME | )
### Parameter  | Parameter Description  | Parameter Value
---|---|---
TAPNAME  | Specify a TAP group name to display. If the parameter “TAPNAME” is not specified, the command indicates that all TAP groups on this device should be displayed.  | -

### 3 Command Mode

Privileged EXEC

### 4 Default

None

### 5 Usage

None

### 6 Examples

The following example shows the configuration of tap-group:

```bash
Switch# show tap-group
truncation : 144
timestamp-over-ether: 0000.0000.0000 0000.0000.0000 0x0000
TAP-group tap1
  ID: 1
  Ingress: eth-0-1     flow f1
  Egress: eth-0-9
  TAP-group tap2
  ID: 2
  Ingress: eth-0-21
  Egress: eth-0-22
```
7 Related Commands

tap-group

ingress
10 TIMESTAMP Commands

10.1 timestamp-over-ether

1 Command Purpose

Use this command to configure the TAP timestamp outer header information.

Use the no form of this command to remove the TAP timestamp configuration.

2 Command Syntax

timestamp-over-ether \text{MAC\_ADDR\_DA} \text{MAC\_ADDR\_SA} \text{ETHTYPE\_ID}

no timestamp-over-ether

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC_ADDR_DA</td>
<td>Ethernet destination MAC address</td>
<td>MAC address in HHHH.HHHH.HHHH format, valid range is 0.0.0-FFFF.FFFF</td>
</tr>
<tr>
<td>MAC_ADDR_SA</td>
<td>Ethernet source MAC address</td>
<td>MAC address in HHHH.HHHH.HHHH format, valid range is 0.0.0-FFFF.FFFF</td>
</tr>
<tr>
<td>ETHTYPE_ID</td>
<td>Ethertype in hexadecimal</td>
<td>range is ([0x0-0xffff])</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default

None

5 Usage

TAP timestamp is global configuration. TAP timestamp MUST be configured before using the TAP groups.

6 Examples

The following example shows how to configure timestamp-over-ether:

```sh
Switch# configure terminal
Switch(config)# timestamp-over-ether 1.1.1 2.2.2 0xff12
```

The following example shows how add timestamp for packets going out from tap1/interface eth-0-10:

```sh
Switch(config)# tap-group tap1
Switch(config-tap-tap1)# ingress eth-0-1
Switch(config-tap-tap1)# egress eth-0-10 timestamp
Switch(config-tap-tap1)# exit
```

7 Related Commands

tap-group
egress

10.2 show timestamp sync

1 Command Purpose

Use this command configure to display timestamp sync information.

2 Command Syntax

show timestamp sync

3 Command Mode

Privileged EXEC
4 Default
None

5 Usage
None

6 Examples
The following example shows how to display timestamp information:

```
Switch# show timestamp sync
Sync Type : Disabled
Sync Count : 0
Last Sync Time : Tue Sep 12 07:57:08 2017
```

7 Related Commands
timestamp sync

10.3 timestamp sync

1 Command Purpose
Use this command configure to timestamp sync.

Use the no form of this command to restore the default value.

2 Command Syntax
timestamp sync ( systime | none )

no timestamp sync

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>systime</td>
<td>Use the system time as</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>time source.</td>
<td></td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

The default value is “none”

5 Usage

None

6 Examples

The following example shows how to config timestamp sync:

```plaintext
Switch(config)# timestamp sync systime
```

7 Related Commands

show timestamp sync
11 TRUNCATION Commands

11.1 truncation

1 Command Purpose

Use this command to configure the truncation length information.

Use the no form of this command to restore the default value.

2 Command Syntax

truncation TRUNCATION_LEN

no truncation

3 Command Mode

Global Configuration

4 Default

144

5 Usage

CRC should be re-calculating after packet is truncated. The truncation length include CRC field.
### 6 Examples

The following example shows how to set truncation length as 64:

```
Switch(config)# truncation 64
```

The following example shows how to use truncation in TAP group:

```
Switch(config)# tap-group tap1
Switch(config-tap-tap1)# ingress eth-0-1 truncation
Switch(config-tap-tap1)# egress eth-0-10
```

### 7 Related Commands

- `tap-group`
- `ingress`
12.1 ssh

1 Command Purpose

In privileged mode, use this command to log in remote ssh server.

2 Command Syntax

```
ssh -l NAME_STRING ( -i RSAKEYNAME | ) ( -p L4_PORT_NUM | ) ( -v ( 1 | 2 ) | ) ( -c ( 3des | des | 3des-cbc | aes128-cbc | aes192-cbc | aes256-cbc ) | ) ( -m ( hmac-md5-128 | hmac-md5-96 | hmac-sha1-160 | hmac-sha1-96 ) | ) ( -o number-of-password-prompts SSHPINPROMPTS | ) ( mgmt-if | ) ( IP_ADDR | STRING )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>Login name</td>
<td>-</td>
</tr>
<tr>
<td>RSAKEYNAME</td>
<td>Specify key name</td>
<td>-</td>
</tr>
<tr>
<td>L4_PORT_NUM</td>
<td>Remote ssh server port</td>
<td>range is &lt;0-65535&gt;</td>
</tr>
<tr>
<td>SSHPINPROMPTS</td>
<td>Number of password prompts</td>
<td>range is &lt;1-7&gt;</td>
</tr>
<tr>
<td>IP_ADDR</td>
<td>STRING</td>
<td>Specify IP address of remote system /Specify hostname of remote system</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

Version default is 2

5 Usage

None

6 Examples

The following example shows how to establish connection by ssh:

```
Switch# ssh -l aaa 1.1.1.1
aaa@1.1.1.1's password:
Switch#
```

7 Related Commands

ip ssh server enable

12.2 ip ssh server enable

1 Command Purpose

In global mode, use this command to start ssh server.

2 Command Syntax

ip ssh server enable

3 Command Mode

Global Configuration
4 Default
Enabled

5 Usage
None

6 Examples
The following example enables the SSH server:

```
Switch(config)# ip ssh server enable
```

7 Related Commands

**ip ssh server disable**

1 Command Purpose
In global mode, use this command to disable ssh server.

2 Command Syntax
```
ip ssh server disable
```

3 Command Mode
Global Configuration

4 Default
Enabled
5 Usage

None

6 Examples

The following example disable the SSH server:

```
Switch(config)# ip ssh server disable
```

7 Related Commands

ip ssh server enable

12.4 ip ssh server version

1 Command Purpose

In global configuration mode, use this command to configure Secure Shell (SSH) version on your switch. And use the no form of this command to restore the default value.

2 Command Syntax

ip ssh server version ( v1 | v2 | all )

```
no ip ssh server version
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>v1</td>
<td>Support SSH version 1</td>
<td>-</td>
</tr>
<tr>
<td>v2</td>
<td>Support SSH version 2</td>
<td>-</td>
</tr>
<tr>
<td>all</td>
<td>Support SSH version 1 and 2</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
5 Usage

SSH server and client will negotiate about the version when connecting. Server and client should select a higher version both supported.

6 Examples

The following example shows how to configure support SSH Version 1:

```
Switch(config)# ip ssh server version v1
```

The following example shows how to restore the default configuration:

```
Switch(config)# no ip ssh server version
```

7 Related Commands

show ip ssh server status

12.5 ip ssh server authentication-retries

1 Command Purpose

Use this command to set retry times when log in remote ssh server failed. Use the command in no format, could rest retry times to default value.

2 Command Syntax

```
ip ssh server authentication-retries SS HAUTHERETRIES
no ip ssh server authentication-retries
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS HAUTHERETRIES</td>
<td>Retry times</td>
<td>Range is &lt;1-6&gt;</td>
</tr>
</tbody>
</table>
3  Command Mode

Global Configuration

4  Default

6

5  Usage

None

6  Examples

The following examples configures SSH authentication retry times on your switch:

```
Switch(config)# ip ssh server authentication-retries 3
```

The following examples restore SSH authentication retry times to the default value:

```
Switch(config)# no ip ssh server authentication-retries
```

7  Related Commands

show ip ssh server status

12.6  ip ssh server authentication-timeout

1  Command Purpose

In global configuration mode, use this command to configure Secure Shell (SSH) authentication timeout on your switch.

Use the no form of this command to restore the default value of Secure Shell (SSH) authentication timeout on your switch

2  Command Syntax

ip ssh server authentication-timeout SSHAUTHTIMEOUT
no ip ssh server authentication-timeout

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSHAUTHTIMEOUT</td>
<td>Timeout seconds</td>
<td>Range is &lt;1-120&gt;, unit is seconds</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

120

5 Usage

None

6 Examples

The following examples configures SSH authentication timeout on your switch:

```
Switch(config)# ip ssh server authentication-timeout 100
```

The following examples restore SSH authentication timeout to default value:

```
Switch(config)# no ip ssh server authentication-timeout
```

7 Related Commands

show ip ssh server status

12.7 ip ssh server authentication-type

1 Command Purpose

In global configuration mode, use this command to configure Secure Shell (SSH) authentication type.
Use the no form of this command to restore the default value of Secure Shell (SSH) authentication type.

2 Command Syntax

ip ssh server authentication-type ( all | ( password | public-key | rsa ) )

no ip ssh server authentication-type

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Enable all authentication type</td>
<td>-</td>
</tr>
<tr>
<td>password</td>
<td>Enable password</td>
<td>-</td>
</tr>
<tr>
<td>public-key</td>
<td>Enable public key</td>
<td>-</td>
</tr>
<tr>
<td>rsa</td>
<td>Enable rsa</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

Public-key and password

5 Usage

When logging in using SSH, the authentication mode will be negotiated at the beginning of establishing connection reply.

6 Examples

The following example configures SSH authentication type to password:

Switch(config)# ip ssh server authentication-type password

The following example restore SSH authentication type to default value:
Switch(config)# no ip ssh server authentication-type

7 Related Commands

show ip ssh server status

12.8 ip ssh server rekey-interval

1 Command Purpose

In global configuration mode, use this command to configure Secure Shell (SSH) rekey interval.

Use the no form of this command to restore the default value of Secure Shell (SSH) rekey interval.

2 Command Syntax

ip ssh server rekey-interval SSHREKEYINTVL

no ip ssh server rekey-interval

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSHREKEYINTVL</td>
<td>Rekey interval in minutes</td>
<td>Range is &lt;1-1440&gt;</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

60

5 Usage

None
6 Examples

The following example configures SSH rekey interval to 30:

```
Switch(config)# ip ssh server rekey-interval 30
```

The following example restore SSH rekey interval to default value:

```
Switch(config)# no ip ssh server rekey-interval
```

7 Related Commands

show ip ssh server status

12.9 ip ssh server host-key

1 Command Purpose

In global configuration mode, use this command to configure Secure Shell (SSH) host-key.

Use the no form of this command to restore the default value of Secure Shell (SSH) host-key.

2 Command Syntax

ip ssh server host-key rsa key RSAKEYNAME

no ip ssh server host-key

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSAKEYNAME</td>
<td>Key Name</td>
<td>=Y27</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None
5  Usage

Host-key is used to generate session when establish connection.

6  Examples

The following example shows how to configure SSH host key:

```
Switch(config)# ip ssh server host-key rsa key KEY1
```

The following example shows how to remove SSH host key:

```
Switch(config)# no ip ssh server host-key
```

7  Related Commands

show ip ssh server status

12.10  ip ssh server port

1  Command Purpose

Use this command to configure ssh service port.

2  Command Syntax

ip ssh server port SERVICE_PORT

no ip ssh server port

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVICE_PORT</td>
<td>port number</td>
<td>Range is 1025-65535</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration
4 Default

5 Usage

When change ssh service port, all users must be forced to disconnect.

6 Examples

The following example configures port number:

```
Switch# configure terminal
Switch(config)# ip ssh server port 2000
```

The following example recovers ssh port to default port:

```
Switch# configure terminal
Switch(config)# no ip ssh server port
```

7 Related Commands

None

12.11 show ip ssh server status

1 Command Purpose

In privileged mode, use this command to show information of SSH.

2 Command Syntax

show ip ssh server status

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

None

6 Examples

The following example shows information of ssh server:

```
Switch# show ip ssh server status
SSH server enabled
Version: v2
Authentication timeout: 33 second(s)
Authentication retries: 6 time(s)
Server key lifetime: 60 minute(s)
Authentication type: password, public-key
```

7 Related Commands

ssh
13.1 port-channel load-balance-mode

1 Command Purpose

Use this command to set port-channel load balance mode from static to round-robin. Use the no form of this command to set port-channel load balance mode to default static mode.

2 Command Syntax

```
port-channel AGG_GID load-balance-mode round-robin
```

```
no port-channel AGG_GID load-balance-mode
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGG_GID</td>
<td>Channel group ID</td>
<td>Range is &lt;1-55&gt;</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

Disabled

5 Usage

None
6 Examples

The following example shows how to set port-channel load balance mode to round-robin:

```
Switch(config)# port-channel 9 load-balance-mode round-robin
```

The following example shows how to set port-channel load balance mode to the default:

```
Switch(config)# no port-channel 9 load-balance-mode
```

7 Related Commands

None

13.2 show channel-group

1 Command Purpose

Use `show channel-group summary` command to display a summary of all of the channel groups, or a specified channel group. Use `show channel-group detail` command to display detailed information of all of the channel groups, or a specified channel group. Use `show channel-group port` command to display port information of all of the channel groups, or a specified channel group.

2 Command Syntax

```
show channel-group ( AGG_GID | ) ( summary | detail | port )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGG_GID</td>
<td>Channel group ID</td>
<td>Range is &lt;1-55&gt;</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

None

6 Examples

The following example shows how to display detailed information of the channel group 10:

```
Switch# show channel-group 10 detail

Group: 10
---------------------
Mode : switch
Ports : 2      Maxports : 16
Bundle Ports : 0
Protocol : static
Port : eth-0-3
---------------------
State     : Down Out-Bundle
Channel group : 10
Protocol  : static
Port index : 3

Port : eth-0-4
---------------------
State     : Down Out-Bundle
Channel group : 10
Protocol  : static
Port index : 4
```

The following example shows how to display information of all channel groups:

```
Switch# show channel-group summary

port-channel load-balance hash-arithmetic: xor
port-channel load-balance tunnel-hash-mode: both
Port-channel load-balance hash-field-select:
       src-ip dst-ip src-port-14 dst-port-14
Flags:  s - suspend  T - standby
       w - wait       B - in bundle
       R - Layer3    S - Layer2
       D - down/admin down  U - in use
Mode:  SLB - static load balance
      DLB - dynamic load balance
      RR - round robin load balance
Aggregator Mode Protocol Ports
-----------------------------------------------
agg5(SD)  SLB Static  eth-0-5(D)
agg10(SD)  SLB Static  eth-0-3(D)  eth-0-4(D)
```

This example shows how to display summary information of the channel group 10:

```
Switch# show channel-group 10 summary

port-channel load-balance hash-arithmetic: xor
port-channel load-balance tunnel-hash-mode: both
Port-channel load-balance hash-field-select:
       src-ip dst-ip src-port-14 dst-port-14
Flags:  s - suspend  T - standby
       w - wait       B - in bundle
       R - Layer3    S - Layer2
       D - down/admin down  U - in use
Mode:  SLB - static load balance
      DLB - dynamic load balance
```
The following example shows how to display information of the channel group 10:

```
Switch# show channel-group 10 summary

port-channel load-balance hash-arithmetic: xor
port-channel load-balance tunnel-hash-mode: both
Port-channel load-balance hash-field-select:
  src-ip dst-ip src-port-14 dst-port-14
Flags:  s - suspend  T - standby
        w - wait  B - in Bundle
        R - Layer3  S - Layer2
        D - down/admin down  U - in use
Mode:  SLB - static load balance
       DLB - dynamic load balance
       RR - round robin load balance
Aggregator Mode Protocol Ports
aggl0(SD)  SLB  Static  eth-0-3(D)  eth-0-4(D)
```

7 Related Commands

static-channel-group

13.3 show channel-group interface

1 Command Purpose

Use this command to display link aggregation information for the port.

2 Command Syntax

```
show channel-group interface IF_NAME
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME</td>
<td>Specify the interface name to show</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC
4 Default

None

5 Usage

None

6 Examples

The following example shows how to display link aggregation information for the specified port:

```
Switch# show channel-group interface eth-0-3
Port     : eth-0-3
----------
State    : Down Out-Bundle
Channel group : 10
Protocol  : static
Port index : 3
```

7 Related Commands

static-channel-group
14.1 ntp minimum-distance

1 Command Purpose

In global configuration mode, use this command to configure the minimum distance between the switch and the NTP server.

Use the no form of this command to restore default ntp minimum distance configures.

2 Command Syntax

ntp minimum-distance NTP_MIN_DISP

no ntp minimum-distance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP_MIN_DISP</td>
<td>Distance value time interval in milliseconds</td>
<td>Range is &lt;1-1000&gt;</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

1ms

5 Usage

None
6 Examples

The following example shows how to configure minimum distance to 1000ms:

Switch(config)# ntp minimum-distance 1000

The following example shows how to configure minimum distance to default:

Switch(config)# no ntp minimum-distance

7 Related Commands

show ntp status

14.2 ntp server

1 Command Purpose

Use this command to allow the software clock to be synchronized by a Network Time Protocol (NTP) time server.

Use the no form of this command to delete the NTP server

2 Command Syntax

ntp server mgmt-if IP_ADDR ( key NTP_KEYID | ) ( version NTP_VERSION | ) ( prefer | )

no ntp server IP_ADDR

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP_ADDR</td>
<td>IP address of the time server or peer</td>
<td>-</td>
</tr>
<tr>
<td>NTP_KEYID</td>
<td>Authentication key to use when sending packets to this peer</td>
<td>Range is &lt;1-64000&gt;</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

Not synchronized with any NTP server

5 Usage

None

6 Examples

The following example shows how to configure ntp server ip as 172.16.22.44, the version of NTP as 2:

Switch(config)# ntp server mgmt-if 172.16.22.44 version 2

The following example shows how to remove ntp server:

Switch(config)# no ntp server 172.16.22.44

7 Related Commands

show ntp status
14.3 ntp authentication

1 Command Purpose

To enable NTP authentication, use the ntp authentication enable command. To disable the NTP authentication, use the ntp authentication disable command.

2 Command Syntax

ntp authentication (enable | disable)

3 Command Mode

Global Configuration

4 Default

Disabled

5 Usage

When NTP authentication is enabled, the switch will synchronize the time with NTP servers with trusted key only.

For more information about trusted key, please see the “ntp trustedkey” command.

6 Examples

The following example shows how to enables NTP authentication:

Switch(config)# ntp authentication enable

7 Related Commands

show ntp
14.4  ntp key

1  Command Purpose

In global mode, use this command to create a value for a NTP key. And remove the value of the NTP key by the no form of the command.

2  Command Syntax

ntp key NTP_KEYID KEY_STRING

no ntp key NTP_KEYID

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP_KEYID</td>
<td>Authentication key ID</td>
<td>Range is &lt;1-64000&gt;</td>
</tr>
<tr>
<td>KEY_STRING</td>
<td>The value of the key</td>
<td>*</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

None

5  Usage

None

6  Examples

The following example shows how to create a ntp key:

```
Switch(config)# ntp key 123 key123
```

The following example shows how to remove a ntp key:

```
Switch(config)# no ntp key 123
```
7  Related Commands

show ntp key

14.5  ntp trustedkey

1  Command Purpose

Use this command to authenticate the identity of a system to which Network Time Protocol (NTP) will synchronize.

Use the no form of this command to disable authentication of the identity of the system.

2  Command Syntax

ntp trustedkey NTP_KEYID

no ntp trustedkey NTP_KEYID

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP_KEYID</td>
<td>Authentication key to use when sending packets to this peer</td>
<td>Range is &lt;1-64000&gt;</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

None

5  Usage

If authentication is enabled, use this command to define one or more key numbers (corresponding to the keys defined with the ntp key command) that a peer NTP system must provide
in its NTP packets, in order for this system to synchronize to it. This function provides protection against accidentally synchronizing the system to a system that is not trusted, because the other system must know the correct authentication key.

6 Examples

The following example shows how to configure the system to synchronize only to systems providing authentication key 123:

```
Switch(config)# ntp trustedkey 123
```

The following example shows how to disable authentication of the identity of the system:

```
Switch(config)# no ntp trustedkey 123
```

7 Related Commands

ntp key

14.6 show ntp

1 Command Purpose

In privileged mode, use this command to display NTP configuration.

2 Command Syntax

show ntp

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

None

6 Examples

The following example shows how to display the NTP configurations:

```
Switch# show ntp
Unicast peer or server:
1.1.1.1 server
10.1.1.23 key 43 version 2 prefer server
10.10.25.8 server
172.16.22.44 version 2 server
192.16.22.44 version 2 server
Authentication: enabled
Local reference clock:
```

7 Related Commands

ntp server

14.7 show ntp status

1 Command Purpose

In privileged mode, use this command to display current NTP status.

2 Command Syntax

show ntp status

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

None

6 Examples

The following example shows how to display ntp status:

```
Switch# show ntp status

system peer : 10.10.25.8
system peer mode : client
leap indicator : 00
stratum : 5
precision : -19
root distance : 0.30511 s
minimum distance : 0.00099 s
selection threshold : 1.50000 s
root dispersion : 0.28767 s
reference ID : (10.10.25.8)
reference time : dd6e331f.6a9c7b92 Thu, Sep 21 2017 20:46:23.416
system flags : auth monitor ntp kernel stats
jitter : 0.000000 s
stability : 18.062 ppm
broadcastdelay : 3.000000 s
authdelay : 0.000000 s
```

7 Related Commands

ntp minimum-distance

14.8 show ntp statistics

1 Command Purpose

In privileged mode, use this command to display ntp statistics.

2 Command Syntax

```
show ntp statistics
```

3 Command Mode

Privileged EXEC
4  Default
None

5  Usage
None

6  Examples
The following example shows how to display ntp statistics:

```
Switch# show ntp statistics
      time since reset :18748
    receive buffers :10
  free receive buffers :9
  used receive buffers :0
      low water refills :1
      dropped packets :0
    ignored packets :0
      received packets :333
    packets sent :545
  packets not sent :0
   interrupts handled :19081
    received by int :333
```

7  Related Commands
ntp server

    clear ntp statistics

14.9  show ntp associations

1  Command Purpose
In privileged mode, use this command to display neighbor state of NTP.

2  Command Syntax
show ntp associations
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows the status of NTP associations:

```
Switch# show ntp associations
* synced, + symmetric active mode, - symmetric passive mode,
= client mode, ^ broadcast mode, ~ broadcast client mode
remote local st poll reach delay offset disp
============================================================================
=172.16.22.44  169.254.2.1  16 1024  0 0.00000  0.000000 3.99217
=10.1.1.23     169.254.2.1  16 1024  0 0.00000  0.000000 3.99217
=192.168.22.44 169.254.2.1  16 1024  0 0.00000  0.000000 3.99217
*10.10.25.8    169.254.2.1  4 128  377 0.00031  0.067999  0.09810
=1.1.1.1       169.254.2.1  16 1024  0 0.00000  0.000000 3.99217
```

7 Related Commands

ntp server

14.10 show ntp key

1 Command Purpose

In privileged mode, use this command to display NTP key.

2 Command Syntax

```
show ntp key
```
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows the keys of NTP:

```
Switch# show ntp key
Current NTP key configuration:
- + - - - - - + - - - - - - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
  43 key43
  123 key123
```

7 Related Commands

ntp key

14.11 clear ntp statistics

1 Command Purpose

In privileged mode, use this command to clear NTP statistics.

2 Command Syntax

clear ntp statistics

3 Command Mode

Privileged EXEC
4 Default

None

5 Usage

None

6 Examples

The following example shows how to clear ntp statistics:

```
Switch# clear ntp statistics
```

7 Related Commands

show ntp statistics
15 NETWORK DIAGNOSIS

15.1 ping

1 Command Purpose

Use this command to check whether a specific IPv4 address is available through management interface.

2 Command Syntax

ping mgmt-if ( -b | ) WORD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt-if</td>
<td>Send packet from management interface</td>
<td>-</td>
</tr>
<tr>
<td>-b</td>
<td>To check a broadcast address</td>
<td>-</td>
</tr>
<tr>
<td>WORD</td>
<td>Ping destination address</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None
5  Usage

None

6  Examples

The following example shows how to check whether 10.10.38.160 is available:

```
Switch# ping mgmt-if 10.10.38.160
PING 10.10.38.160 (10.10.38.160) 56(84) bytes of data.
64 bytes from 10.10.38.160: icmp_seq=1 ttl=64 time=0.513 ms
64 bytes from 10.10.38.160: icmp_seq=2 ttl=64 time=0.229 ms
64 bytes from 10.10.38.160: icmp_seq=3 ttl=64 time=0.261 ms
64 bytes from 10.10.38.160: icmp_seq=4 ttl=64 time=0.265 ms
64 bytes from 10.10.38.160: icmp_seq=5 ttl=64 time=0.387 ms
--- 10.10.38.160 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3999ms
rtt min/avg/max/mdev = 0.229/0.331/0.513/0.105 ms
```

7  Related Commands

traceroute

15.2  traceroute

1  Command Purpose

Use this command to show the path from the current device to the destination device.

2  Command Syntax

traceroute mgmt-if WORD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt-if</td>
<td>Send packet from management interface</td>
<td>-</td>
</tr>
<tr>
<td>WORD</td>
<td>Traceroute destination address</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to show the path from current device to 10.108.1.29:

```
Switch# traceroute mgmt-if 10.108.1.29
traceroute to 10.108.1.29 (10.108.1.29), 30 hops max, 38 byte packets
 1 10.108.1.27 (10.108.1.27) 2998.076 ms !H 3000.361 ms !H 3007.748 ms !H
```

7 Related Commands

ping
16 SYSLOG Commands

16.1 logging sync

1 Command Purpose

In privileged mode, use this command to write the log in the memory buffer to the syslog file in flash.

2 Command Syntax

logging sync

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following shows how to enable logging sync function:

```
Switch# logging sync
```

7 Related Commands

show logging buffer
16.2 logging buffer

1 Command Purpose

In global configuration mode, the command is used to set the number of logs saved by the system temporary buffer, and the default value is restored in the form of no of the command.

2 Command Syntax

logging buffer CFGLOGLINES

no logging buffer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFGLOGLINES</td>
<td>Log quantity</td>
<td>Range is &lt;10-1000&gt;</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

500

5 Usage

None

6 Examples

The following shows how to set logging buffer line number to 10:

```
Switch(config)# logging buffer 10
```

The following shows how to set logging buffer line number to default value:

```
Switch(config)# no logging buffer
```
7 Related Commands

show logging buffer

16.3 logging file

1 Command Purpose

In global configuration mode, use this command to set whether to write logs into log files.

2 Command Syntax

logging file ( enable | disable )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Write log information into log files</td>
<td></td>
</tr>
<tr>
<td>disable</td>
<td>Cancel writing log information to log file</td>
<td></td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

Enabled

5 Usage

Once enabled, the log writes the currently generated log to the flash:/syslogfile file every 10 minutes.
6  Examples

The following example shows how to enable logging file function:

```
Switch(config)# logging file enable
```

7  Related Commands

show logging

16.4  logging level file

1  Command Purpose

In global configuration mode, using this command to set the level of log information, logs above or equal to this level will be counted into log files. And use the no form of this command to restore the default value.

2  Command Syntax

logging level file ( LOGSEVERITY | emergency | alert | critical | error | warning | notice | information | debug )

no logging level file

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>emergency</td>
<td>System is unusable</td>
</tr>
<tr>
<td>1</td>
<td>alert</td>
<td>Immediate action needed</td>
</tr>
<tr>
<td>2</td>
<td>critical</td>
<td>Critical conditions</td>
</tr>
<tr>
<td>3</td>
<td>error</td>
<td>Error conditions</td>
</tr>
<tr>
<td>4</td>
<td>warning</td>
<td>Warning conditions</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

Warning

5 Usage

Use this command to set the level of log information. Log information above or equal to this level will be logged to the log file, while log information below this level will not be logged to the file. If debug is specified, all log messages will be logged to the log file.

6 Examples

The following example shows how to configure the log message level to error:

```
Switch(config)# logging level file error
```

The following example shows how to restore the default value of log message level:

```
Switch(config)# no logging level file
```

7 Related Commands

logging level module
16.5 logging level module

1 Command Purpose

In global configuration mode, use this command to set the level of log information sent to the terminal and entered into the buffer. Logs higher than or equal to this level will be displayed on the terminal. And use the no form of this command to restore the default value.

2 Command Syntax

`logging level module ( LOGSEVERITY | emergency | alert | critical | error | warning | notice | information | debug )`

no logging level module

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>emergency</td>
<td>System is unusable</td>
</tr>
<tr>
<td>1</td>
<td>alert</td>
<td>Immediate action needed</td>
</tr>
<tr>
<td>2</td>
<td>critical</td>
<td>Critical conditions</td>
</tr>
<tr>
<td>3</td>
<td>error</td>
<td>Error conditions</td>
</tr>
<tr>
<td>4</td>
<td>warning</td>
<td>Warning conditions</td>
</tr>
<tr>
<td>5</td>
<td>notice</td>
<td>Normal but significant conditions</td>
</tr>
<tr>
<td>6</td>
<td>information</td>
<td>Informational messages</td>
</tr>
<tr>
<td>7</td>
<td>debug</td>
<td>Debugging messages</td>
</tr>
<tr>
<td>LOGSEVERITY</td>
<td>Severity level.</td>
<td>Range is &lt;0-7&gt;</td>
</tr>
</tbody>
</table>
3  **Command Mode**

Global Configuration

4  **Default**

Debug

5  **Usage**

With this, the command sets the level of log information sent to the terminal and recorded to the buffer. Log messages above or equal to this level will be displayed to the terminal and written to the log buffer, while those below this level will not be displayed at the terminal, nor will they be written to the log buffer.

6  **Examples**

The following example shows how to set logging level module to error:

```
Switch(config)# logging level module error
```

The following example shows how to restore the default value of logging level module:

```
Switch(config)# no logging level module
```

7  **Related Commands**

logging level file

16.6  **logging timestamp**

1  **Command Purpose**

In global configuration mode, the command is used to set the timestamp format of log information. And use the no form of this command to restore the default value.

2  **Command Syntax**

logging timestamp ( date | bsd | iso | rfc3164 | rfc3339 | none )
The following example shows how to set the log message timestamp format to RFC3164:

```bash
Switch(config)# logging timestamp rfc3164
```

The following example shows how to recovery log message timestamp format to default:

```bash
Switch(config)# no logging timestamp
```
Related Commands

show logging

16.7 logging server

Command Purpose

In global configuration mode, use this command to set whether to use a remote log server.

Command Syntax

logging server (enable | disable)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable logging server</td>
<td>-</td>
</tr>
<tr>
<td>disable</td>
<td>Disable logging server</td>
<td>-</td>
</tr>
</tbody>
</table>

Command Mode

Global Configuration

Default

Disabled

Usage

None

Examples

The following example shows how to enable log server:

```
Switch(config)# logging server enable
```
7 Related Commands

show logging

16.8 logging server severity

1 Command Purpose

In global configuration mode, this command is used to set the log level sent to the remote log server. Logs above or equal to this level will be sent to the log server. And use the no form of this command to restore the default value.

2 Command Syntax

logging server severity (LOGSEVERITY | emergency | alert | critical | error | warning | notice | information | debug)

no logging server severity

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>emergency</td>
<td>System is unusable</td>
</tr>
<tr>
<td>1</td>
<td>alert</td>
<td>Immediate action needed</td>
</tr>
<tr>
<td>2</td>
<td>critical</td>
<td>Critical conditions</td>
</tr>
<tr>
<td>3</td>
<td>error</td>
<td>Error conditions</td>
</tr>
<tr>
<td>4</td>
<td>warning</td>
<td>Warning conditions</td>
</tr>
<tr>
<td>5</td>
<td>notice</td>
<td>Normal but significant conditions</td>
</tr>
<tr>
<td>6</td>
<td>information</td>
<td>Informational messages</td>
</tr>
<tr>
<td>7</td>
<td>debug</td>
<td>Debugging messages</td>
</tr>
<tr>
<td>LOGSEVERITY</td>
<td>Severity level.</td>
<td>Range is &lt;0-7&gt;</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

Warning

5 Usage

This command is used to set the level of log information sent to the remote log server. Logs higher than or equal to this level will be sent to the log server. If the threshold value is debug, all log messages will be sent to the log server.

6 Examples

The following example shows how to set the level of log messages sent to remote log servers to be error, and information above or equal to the level of error will be sent to remote servers:

```
Switch(config)# logging server severity error
```

The following example shows how to recovery the level of log messages sent to remote log servers by default:

```
Switch(config)# no logging server severity
```

7 Related Commands

show logging

16.9 logging server facility

1 Command Purpose

In global configuration mode, use this command to configure the log daemon on the server.

And use the no form of this command to restore the default value.
2 Command Syntax

logging server facility (LOGFAC | auth | authpriv | cron | daemon | ftp | kern | local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7 | lpr | mail | news | syslog | user | uucp )

no logging server facility

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGFAC</td>
<td>Log facility-type</td>
<td>Range is &lt;0-11&gt; and &lt;16-23&gt;</td>
</tr>
<tr>
<td>4</td>
<td>auth</td>
<td>Authorization system</td>
</tr>
<tr>
<td>10</td>
<td>authpriv</td>
<td>Authorization private system</td>
</tr>
<tr>
<td>9</td>
<td>cron</td>
<td>Cron facility</td>
</tr>
<tr>
<td>3</td>
<td>daemon</td>
<td>System daemon</td>
</tr>
<tr>
<td>11</td>
<td>ftp</td>
<td>FTP system</td>
</tr>
<tr>
<td>0</td>
<td>kern</td>
<td>Kernel</td>
</tr>
<tr>
<td>local0-7</td>
<td>Reserved for locally defined messages</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>lpr</td>
<td>Line printer system</td>
</tr>
<tr>
<td>2</td>
<td>mail</td>
<td>Mail system</td>
</tr>
<tr>
<td>7</td>
<td>news</td>
<td>USENET news</td>
</tr>
<tr>
<td>5</td>
<td>syslog</td>
<td>System log</td>
</tr>
<tr>
<td>1</td>
<td>user</td>
<td>User</td>
</tr>
<tr>
<td>8</td>
<td>uucp</td>
<td>UNIX-to-UNIX</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

Local4

5 Usage

None

6 Examples

The following example shows how to set logging server facility to local3:

```
Switch(config)# logging server facility local3
```

The following example shows how to set logging server facility to default:

```
Switch(config)# no logging server facility
```

7 Related Commands

show logging

16.10 logging server address

1 Command Purpose

In the global configuration mode, use this command to set the IP address of the log server. The switch can send the log information to this server. And use the no form of this command to delete the address.

2 Command Syntax

logging server address mgmt-if IPADDR

no logging server address mgmt-if IPADDR
3 Command Mode

Global Configuration

4 Default

None

5 Usage

In order for the switch to send the system log information to the log server correctly, make sure that the server is in its normal functional state.

6 Examples

The following example shows how to set the IP address of log server to 10.10.38.236:

```
Switch(config)# logging server address mgmt-if 10.10.38.236
```

The following example shows how to delete log server:

```
Switch(config)# no logging server address mgmt-if 10.10.38.236
```

7 Related Commands

logging server

16.11 logging merge

1 Command Purpose

When this function is enabled, the switch merges the same logs that appear in a specified period of time into one. During this period, the switch places the received logs in a temporary buffer of a specified size in the background. The size of this period can

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP_ADDR</td>
<td>Remote server IP address</td>
<td>-</td>
</tr>
</tbody>
</table>
be specified by using the timeout parameter, and the size of the backstage temporary buffer can be specified by using fifo-size parameter.

## 2 Command Syntax

logging merge ( enable | disable | timeout MERGETIMEOUT | fifo-size MERGEFSIZE )

no logging merge ( timeout | fifo-size )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable logging merge</td>
<td>-</td>
</tr>
<tr>
<td>disable</td>
<td>Disable logging merge</td>
<td>-</td>
</tr>
<tr>
<td>MERGEFSIZE</td>
<td>Set the size of the background log merge buffer in terms of entries, default 1024 entries</td>
<td>Range is &lt;100-10240&gt;</td>
</tr>
<tr>
<td>MERGETIMEOUT</td>
<td>For a specified period of time, the same logs that appear during that period are merged into one</td>
<td>Range is &lt;1-300&gt;, uint is seconds</td>
</tr>
</tbody>
</table>

## 3 Command Mode

Global Configuration

## 4 Default

Logging mergence is enabled. Timeout is 10.

Fifo-size is 1024.
5 Usage

The logging merge command merges all the same logs into one during a specified time range. During this time, the switch buffered these same logs. You can use the timeout keyword to set the time range, and use the fifo-size to set the buffer size.

6 Examples

The following example shows how to enable logging merge:

```
Switch(config)# logging merge enable
```

The following example shows how to set logging merge timeout to default value:

```
Switch(config)# no logging merge timeout
```

7 Related Commands

`show logging`

16.12 show logging

1 Command Purpose

In privileged mode, use this command to display the configuration of logging.

2 Command Syntax

`show logging`

3 Command Mode

Privileged EXEC

4 Default

None
5  Usage

None

6  Examples

The following example shows how to display the configuration of logging:

Switch# show logging

Current logging configuration:
===================================================================
logging buffer 500
logging timestamp bsd
logging file enable
logging level file warning
logging level module debug
logging server disable
logging server severity warning
logging server facility local4
logging merge disable
logging merge fifo-size 1024
logging merge timeout 10

7  Related Commands

logging buffer

logging timestamp

logging file

logging level file

logging level module

logging server

logging server severity

logging server facility

logging merge
16.13 show logging buffer

1 Command Purpose

In privileged mode, use this command to show logging buffer messages.

2 Command Syntax

show logging buffer (SYSLOGLINES | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSLOGLINES</td>
<td>Specify the number of message(s)</td>
<td>(-1000..+1000)</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

By default, syslog lines are sorted in reverse chronological order, which means the newest syslog is on top.

6 Examples

The following example shows how to display logging buffer:

```
Switch# show logging buffer
Sep 14 08:59:16 Switch init-6: starting pid 27391, tty '/dev/ttyS0': '/usr/sbin/klish'
Sep 14 08:59:16 Switch init-6: process '/usr/sbin/klish' (pid 27327) exited.
Scheduling for restart.
Sep 14 08:49:40 Switch APP-1: logout, vty 1, location 169.254.1.2, by telnet
Sep 14 08:49:16 Switch init-6: starting pid 27327, tty '/dev/ttyS0': '/usr/sbin/klish'
Sep 14 08:49:16 Switch init-6: process '/usr/sbin/klish' (pid 27259) exited.
```
### Related Commands

**clear logging buffer**

### 16.14 show logging buffer statistics

#### 1 Command Purpose

In privileged mode, use this command to display the amount of information stored in the log buffer.

#### 2 Command Syntax

show logging buffer statistics

#### 3 Command Mode

Privileged EXEC

#### 4 Default

None

#### 5 Usage

None

#### 6 Examples

The following example shows how to display the statistics of logging buffer:

```shell
Switch# show logging buffer statistics

Logging buffer statistics:
-----------------------------------------------
Total processed 314 entries
Total dropped 0 entries
Current have 50 entries
```
7 Related Commands

clear logging buffer

16.15 show logging levels

1 Command Purpose

In privileged mode, use this command to show the severity level information of logging.

2 Command Syntax

show logging levels

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the severity level information of logging:

 Switch# show logging levels

<table>
<thead>
<tr>
<th>Severity</th>
<th>Name</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>emergency</td>
<td>system is unusable</td>
</tr>
<tr>
<td>1</td>
<td>alert</td>
<td>action must be taken immediately</td>
</tr>
<tr>
<td>2</td>
<td>critical</td>
<td>critical conditions</td>
</tr>
<tr>
<td>3</td>
<td>error</td>
<td>error conditions</td>
</tr>
<tr>
<td>4</td>
<td>warning</td>
<td>warning conditions</td>
</tr>
<tr>
<td>5</td>
<td>notice</td>
<td>normal but significant condition</td>
</tr>
<tr>
<td>6</td>
<td>information</td>
<td>informational</td>
</tr>
<tr>
<td>7</td>
<td>debug</td>
<td>debug-level messages</td>
</tr>
</tbody>
</table>
7 Related Commands

logging level file

16.16 show logging facilities

1 Command Purpose

In privileged mode, use this command to display log daemon tool information.

2 Command Syntax

show logging facilities

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the facility information of logging:

```
Switch# show logging facilities

Logging facility information:
Facility  Name           Note
======================================
0         kern           kernel messages
1         user           random user-level messages
2         mail           mail system
3         daemon         system daemons
4         auth           security/authorization messages
5         syslog         messages generated internally by syslogd
6         lpr            line printer subsystem
7         news           network news subsystem
8         uucp           UUCP subsystem
```

7 Related Commands

logging server facility

16.17 clear logging buffer

1 Command Purpose

In privileged mode, use this command to clear records in the log buffer.

2 Command Syntax

clear logging buffer

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to clear logging buffer:

Switch# clear logging buffer
7 Related Commands

show logging buffer
17 SNMP Commands

17.1 show snmp

1 Command Purpose

To display the services information of SNMP, use the show snmp command in privileged EXEC mode.

2 Command Syntax

show snmp

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the information of SNMP:

Switch# show snmp
Switch# show snmp
SNMP services: enable
7 Related Commands

snmp server enable

17.2 show snmp-server version

1 Command Purpose

To display the supported version of SNMP, use the show snmp-server version command in privileged EXEC mode.

2 Command Syntax

show snmp-server version

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the information of snmp-server version:

Switch# show snmp-server version
SNMP services: SNMPv1/SNMPv2c

7 Related Commands

snmp-server version
17.3 **show snmp-server community**

1 **Command Purpose**

To display the SNMP community information, use the `show snmp-server community` command in privileged EXEC mode.

2 **Command Syntax**

```
show snmp-server community
```

3 **Command Mode**

Privileged EXEC

4 **Default**

None

5 **Usage**

None

6 **Examples**

The following example shows how to display the information of snmp-server community:

```
Switch # show snmp-server community

Community-Access  Community-String  Security-name
=================================================================================
read-write          sysname          comm1
```

7 **Related Commands**

`snmp-server community`
17.4 show snmp-server engineID

1 Command Purpose

To display the identification of the local Simple Network Management Protocol (SNMP) engine and all remote engines that have been configured on the router, use the show snmp-server engineID command in EXEC mode.

2 Command Syntax

show snmp-server engineID

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

An SNMP engine is a copy of SNMP that can reside on a local or remote device.

6 Examples

The following example shows how to display the information of engineID:

```
Switch# show snmp-server engineID
Engine ID : 0000000902000000c025808
```

7 Related Commands

snmp-server engineID
17.5 show snmp-server sys-info

1 Command Purpose

To display the system information of SNMP, use the show snmp-server sys-info command in privileged EXEC mode.

2 Command Syntax

show snmp-server sys-info

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the information of snmp-server sys-info:

```
Switch# show snmp-server sys-info
Contact: admin@exampledomain.com
Location: Sample Place
```

7 Related Commands

snmp-server system-contact

snmp-server system-location
17.6 show snmp-server trap-receiver

1 Command Purpose

To display the SNMP traps receiver, use the show snmp-server trap-receiver command in privileged EXEC mode.

2 Command Syntax

show snmp-server trap-receiver

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the information of snmp-server trap-receiver:

```
Switch# show snmp-server trap-receiver
Target-ipaddress  mgmt-if  udpport  version  pdu-type  community
=========================================================================
10.10.27.232  yes  162  v1  trap  sysname
10.10.27.232  yes  162  v2c  trap  sysname
```

7 Related Commands

snmp-server trap target-address
17.7 show snmp-server inform-receiver

1 Command Purpose

To display the SNMP informs receiver, use the show snmp-server inform-receiver command in privileged EXEC mode.

2 Command Syntax

show snmp-server inform-receiver

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the information of snmp-server inform-receiver:

```
Switch# show snmp-server inform-receiver
Target-ipaddress mgmt-if udpPort version pdu-type community
============================================================================
10.10.27.233 yes 162 v2c inform sysname
```

7 Related Commands

snmp-server inform target-address
17.8  show snmp-server view

1  Command Purpose

To display the family name, storage types, and status of a Simple Network Management Protocol (SNMP) configuration and associated MIB, use the show snmp-server view command in privileged EXEC mode.

2  Command Syntax

show snmp-server view (USERNAME | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>USERNAME</td>
<td>Specify a view name that want to show, WORD</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Privileged EXEC

4  Default

None

5  Usage

None

6  Examples

The following example shows how to display the information of snmp-server view:

```
Switch# show snmp-server view
View-name       View-type Subtree
------------------------------------
a               excluded   .1
a2              included   .1.2
abc             excluded   .1.3.6.2
_all_           included   .0
```

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Related Commands

snmp-server view

17.9 snmp-server enable

1 Command Purpose

To enable the SNMP function, use the snmp-server enable command in global configuration mode.

Use the no form of this command to disable the SNMP-server.

2 Command Syntax

snmp-server enable

no snmp-server enable

3 Command Mode

Global Configuration

4 Default

Disabled

5 Usage

None

6 Examples

The following example shows how to set the snmp-server enable:

Switch(config)# snmp-server enable
The following example shows how to set the snmp-server disable:

```
Switch(config)# no snmp-server enable
```

### 7 Related Commands

show snmp

### 17.10 snmp-server engineID

#### 1 Command Purpose

To specify the Simple Network Management Protocol (SNMP) engine ID on the local device, use the `snmp-server engineID` command in global configuration mode.

Use the `no` form of this command to restore the default value.

#### 2 Command Syntax

```
snmp-server engineID ENGINEID
```

```
no snmp-server engineID
```

#### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINEID</td>
<td>octet string of hexadecimal characters</td>
<td>10-64 hexadecimal characters</td>
</tr>
</tbody>
</table>

#### 3 Command Mode

Global Configuration

#### 4 Default

An SNMP engine ID is generated automatically but is not displayed or stored in the running configuration. Default engine ID is 30383038303830383038. You can display the default or configured engine ID by using the `show snmp-server engineID` command.
5 Usage

The SNMP engine ID is a unique string used to identify the device for administration purposes. You do not need to specify an engine ID for the device. For further details on the SNMP engine ID, see RFC 2571.

6 Examples

The following example shows how to set the snmp-server engineID:

```
Switch(config)# snmp-server engineID 1234567890
```

The following example shows how to delete the snmp-server engineID:

```
Switch(config)# no snmp-server engineID
```

7 Related Commands

show snmp-server engineID

17.11 snmp-server system-contact

1 Command Purpose

To set the system contact string, use the snmp-server system-contact command in global configuration mode.

Use the no form of this command to delete the contact string.

2 Command Syntax

snmp-server system-contact KLINE

no snmp-server system-contact

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLINE</td>
<td>Specify SNMP system contact parameter</td>
<td>Up to 255 characters, valid character is among “0-9A-Za-z.-_@*”</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to set the system contact string:

```
Switch(config)# snmp-server system-contact admin@example.com
```

The following example shows how to delete the system contact string:

```
Switch(config)# no snmp-server system-contact
```

7 Related Commands

show snmp-server sys-info

17.12 snmp-server system-location

1 Command Purpose

To set the system location string, use the snmp-server system-location command in global configuration mode.

Use the no form of this command to delete the location string.

2 Command Syntax

```
snmp-server system-location KLINE
```

```
no snmp-server system-location
```
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLINE</td>
<td>Specify SNMP system location parameter</td>
<td>Up to 255 characters, valid character is among “0-9A-Za-z.-@*”</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

This command is used to set the system location of the SNMP agent so that these descriptions can be accessed through the configuration file.

6 Examples

The following example shows how to set the system location string:

```
Switch(config)# snmp-server system-location Sample.Place
```

The following example shows how to remove the system location string:

```
Switch(config)# no snmp-server system-location
```

7 Related Commands

show snmp-server sys-info

17.13 snmp-server version

1 Command Purpose

To specify the support of SNMP version, use the snmp-server version command in global configuration mode.
Use the no form of this command to restore the default value.

2 Command Syntax

```
snmp-server version ( all | v1 | v2c )
```

```
no snmp-server version
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Support all versions (v1, v2c, and v3)</td>
<td>-</td>
</tr>
<tr>
<td>v1</td>
<td>Support only v1 version</td>
<td>-</td>
</tr>
<tr>
<td>v2c</td>
<td>Support only v2c version</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

Support v1 and v2c SNMP versions.

5 Usage

None

6 Examples

The following example shows how to set SNMP -server to support all versions:

```
Switch(config)# snmp-server version all
```

The following example shows how to restore the SNMP -server to support default versions:

```
Switch(config)# no snmp-server version
```
7 Related Commands

show snmp-server version

17.14 snmp-server view

1 Command Purpose

To create or update a view entry, use the snmp-server view command in global configuration mode.

Use the no form of this command to delete the view.

2 Command Syntax

snmp-server view SNMPNAME ( excluded | included ) SNMPSUBTREE ( mask SNMPMASK )

no snmp-server view SNMPNAME ( excluded | included ) SNMPSUBTREE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNMPSUBTREE</td>
<td>Configures the OID (and subtree OIDs) specified in sub-tree argument to be included in the SNMP view</td>
<td>-</td>
</tr>
<tr>
<td>excluded</td>
<td>Configures the OID (and subtree OIDs) specified in sub-tree argument to be explicitly excluded from the SNMP view</td>
<td>-</td>
</tr>
<tr>
<td>included</td>
<td>Configures the OID (and subtree OIDs) specified in sub-tree argument to be included in the SNMP view</td>
<td>-</td>
</tr>
<tr>
<td>SNMPNAME</td>
<td>Label for the view record that you are updating or creating. The name is used to reference the record</td>
<td>-</td>
</tr>
</tbody>
</table>
### Command Mode

**Global Configuration**

### Default

None

### Usage

Other SNMP commands require an SNMP view as an argument. You use this command to create a view to be used as arguments for other commands.

### Examples

The following example shows how to create a snmp-server view:

```
Switch(config)# snmp-server view abc excluded 1.3.6.2
```

The following example shows how to delete a snmp-server view:

```
Switch(config)# no snmp-server view abc excluded 1.3.6.2
```

### Related Commands

* show snmp-server view
17.15 snmp-server community

1 Command Purpose

To set up the community access string to permit access to the Simple Network Management Protocol (SNMP), use the snmp-server community command in global configuration mode.

Use the no form of this command to delete the community.

2 Command Syntax

```plaintext
snmp-server community CONM_NAME (read-only | read-write) (view VIEW_NAME | )

no snmp-server community CONM_NAME
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONM_NAME</td>
<td>Specify a SNMP community name</td>
<td>A string with 1-256 characters. A blank means deny access.</td>
</tr>
<tr>
<td>read-only</td>
<td>Specifies read-only access. Authorized management stations can retrieve only MIB objects</td>
<td>-</td>
</tr>
<tr>
<td>read-write</td>
<td>Specifies read-write access. Authorized management stations can both retrieve and modify MIB objects</td>
<td>-</td>
</tr>
<tr>
<td>view VIEW_NAME</td>
<td>MIB view to which this community has access</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4   Default

None

5   Usage

None

6   Examples

The following example shows how to create a community named test:

```
Switch(config)# snmp-server community test read-write
```

The following example shows how to delete the community:

```
Switch(config)# no snmp-server community test
```

7   Related Commands

show snmp-server community

17.16   snmp-server trap enable

1   Command Purpose

To enable all Simple Network Management Protocol (SNMP) notification types that are available on your system, use the snmp-server trap enable command in global configuration mode.

Use the no form of this command to disable the trap.

2   Command Syntax

```
snmp-server trap enable ( all | coldstart | warmstart | linkdown | linkup )

no snmp-server trap enable ( all | coldstart | warmstart | linkdown | linkup )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0.9</td>
<td>214</td>
<td>Garlandtechnology.com</td>
</tr>
</tbody>
</table>
### 3 Command Mode

Global Configuration

### 4 Default

Disabled

### 5 Usage

The `snmp-server trap enable` command is used in conjunction with the `snmp-server trap target-address` command. Use the `snmp-server trap target-address` command to specify which host or hosts receive SNMP notifications. To send notifications, you must configure at least one `snmp-server trap target-address` command.

### 6 Examples

The following example shows how to set all traps enable:

```
Switch(config)# snmp-server trap enable all
```

The following example shows how to set all traps disable:

```
Switch(config)# no snmp-server trap enable all
```

### 7 Related Commands

`snmp-server trap target-address`
17.17  snmp-server trap target-address

1  Command Purpose

To configure a remote trap management IP address, use the snmp-server target-address command in global configuration mode.

Use the no form of this command to delete the target address.

2  Command Syntax

snmp-server trap target-address mgmt-if IP_ADDR community COMNAME (udpport UDP_PROT)

no snmp-server trap target-address IP_ADDR community COMNAME (udpport UDP_PROT)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP_ADDR</td>
<td>Specify a SNMP IPV4 address</td>
<td>-</td>
</tr>
<tr>
<td>COMNAME</td>
<td>Specify a SNMP community name</td>
<td>-</td>
</tr>
<tr>
<td>UDP_PORT</td>
<td>The port number which area is 0 to 65535, the default is 162</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

None
5 Usage

None

6 Examples

The following example shows how to set the trap target address to 169.254.2.2 and set the udp port to 13:

```
Switch(config)# snmp-server trap target-address mgmt-if 169.254.2.2 community test udp port 13
```

The following example shows how to delete the trap target address:

```
Switch(config)# no snmp-server trap target-address mgmt-if 169.254.2.2 community test udp 13
```

7 Related Commands

show snmp-server trap-receiver

17.18 snmp-server trap delay linkup

1 Command Purpose

To configure the trap delay linkup time, use the snmp-server trap delay linkup command in global configuration mode.

Use the no form of this command to restore the default value.

2 Command Syntax

snmp-server trap delay linkup TRAP_DELAY_TIME

```
no snmp-server trap delay linkup
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAP_DELAY_TIME</td>
<td>Linkup trap delay time</td>
<td>1-10 seconds</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

0

5 Usage

None

6 Examples

The following example shows how to set the delay time to 10 seconds:

```
Switch(config)# snmp-server trap delay linkup 10
```

The following example shows how to restore the delay time to default value:

```
Switch(config)# no snmp-server trap delay linkup
```

7 Related Commands

```
snmp-server trap enable
```

17.19 snmp-server trap delay linkdown

1 Command Purpose

To configure the trap delay linkdown time, use the snmp-server trap delay linkdown command in global configuration mode.

Use the no form of this command to restore the default value.

2 Command Syntax

```
snmp-server trap delay linkdown TRAP_DELAY_TIME

no snmp-server trap delay linkdown
```
### Command Mode

**Global Configuration**

### Default

0

### Usage

None

### Examples

The following example shows how to set the delay time to 10 seconds:

```
Switch(config)# snmp-server trap delay linkdown 10
```

The following example shows how to restore the delay time to default value:

```
Switch(config)# no snmp-server trap delay linkdown
```

### Related Commands

snmp-server trap enable

### snmp-server inform target-address

#### Command Purpose

To specify the recipient of a Simple Network Management Protocol (SNMP) inform message, use the `snmp-server inform target-address` command in global configuration mode.

Use the `no` form of this command to delete the configuration.

---

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAP_DELAY_TIME</td>
<td>Linkdown trap delay time</td>
<td>1-10 seconds</td>
</tr>
</tbody>
</table>

---

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2 Command Syntax

snmp-server inform target-address mgmt-if IP_ADDR community COMNAME ( udpport UDP_PROT | )

no snmp-server inform target-address IP_ADDR community COMNAME ( udpport UDP_PROT | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP_ADDR</td>
<td>Specify a SNMP IPV4 address</td>
<td>-</td>
</tr>
<tr>
<td>COMNAME</td>
<td>Specify a SNMP community name</td>
<td>-</td>
</tr>
<tr>
<td>UDP_PROT</td>
<td>The port number</td>
<td>The port number which area is 0 to 65535, the default is 162</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to set the target address for inform messages:

Switch(config)# snmp-server inform target-address 169.254.2.2 community test
udpport 100

The following example shows how to delete the target address for inform messages:
switch(config)# no snmp-server inform target-address 169.254.2.2 community test udpport 100

7 Related Commands

show snmp-server inform-receiver

17.21 snmp-server access-group

1 Command Purpose

Use this command to apply access list on Simple Network Management Protocol(SNMP). Use the no form of this command to remove access list applied to SNMP.

2 Command Syntax

snmp-server access-group NAME_STRING in

no snmp-server access-group

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>IP ACL NAME</td>
<td>The initial character name should be a-z, A-Z, 0-9 or .-, character only can be 0-9A-Za-z.-_ and the max length is 20</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None
5 Usage

ACL applied on SNMP can only matching of source IP, destination IP, behaviour as WhiteList by default.

6 Examples

The following example shows how to apply acl to SNMP:

```
Switch(config)# ip access-list a5
Switch(config-ip-acl-a5)# exit
Switch(config)# snmp-server access-group a5 in
Notice: ACL applied on SNMP can only matching of source IP, destination IP, behaviour as WhiteList by default.
```

7 Related Commands

None
### 18.1 show usernames

**1 Command Purpose**

Use this command to show local user account names on the switch.

**2 Command Syntax**

```
show usernames
```

**3 Command Mode**

Privileged EXEC

**4 Default**

None

**5 Usage**

None

**6 Examples**

The following is sample output from the show usernames command:

```
Switch# show usernames
Number| User name| Privilege | Password | Rsa Key
------|----------|-----------|----------|---------
  1    | admin    | 4         | *        |
  2    | test     | 4         | *        |
Switch#
```
Related Commands

username

18.2 show users

Command Purpose

Use this command to display information about terminal lines.

Command Syntax

show users

Command Mode

Privileged EXEC

Default

None

Usage

None

Examples

The following is sample output from the show users command:

```
Switch# show users
  Line  Host(s)   Idle   Location     User
  ------+----------+--------+--------------+-------
    130  vty 0   idle  2d20h16m   Local
    131  vty 1   idle  20:42:32   10.10.25.25
   *132  vty 2   idle  00:00:00   10.10.25.25
```

Related Commands

show usernames
18.3 show web users

1 Command Purpose

Use this command to display information of the web users.

2 Command Syntax

show web users

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is sample to show web users:

Switch# show web users
Session Id Expire Time Client IP User Name
-----------------------------------------------
320570bf7624e99f9c01912e82c4515b 2017-01-05 00:53:15 10.10.22.236 admin

7 Related Commands

username
18.4 show privilege

1 Command Purpose

Use this command to display the current privilege.

2 Command Syntax

show privilege

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display current privilege:

```
Switch# show privilege
Current privilege level is 4
```

7 Related Commands

username

18.5 clear line console 0

1 Command Purpose

Use this command to clear primary console terminal line login.
2 Command Syntax

clear line console 0

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is sample to clear line console 0:

```
Switch# clear line console 0
[OK]
```

7 Related Commands

line console

18.6 clear line vty

1 Command Purpose

Use this command to clear virtual terminal line login. Line number range is 0 to 7.

2 Command Syntax

clear line vty VTYID1 ( VTYID2 | )
3 Command Mode
Privileged EXEC

4 Default
None

5 Usage
None

6 Examples
The following is sample to clear virtual terminal line from 4 to 7:

```
Switch# clear line vty 4 7
[OK]
```

7 Related Commands
show users

18.7 clear web session

1 Command Purpose
Use this command to clear web sessions.

2 Command Syntax
```
clear web session ( all | WEBSESSION )
```
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Clear all sessions</td>
<td>-</td>
</tr>
<tr>
<td>WEBSESSION</td>
<td>Session Name</td>
<td>-</td>
</tr>
</tbody>
</table>

### 3 Command Mode

Privileged EXEC

### 4 Default

None

### 5 Usage

None

### 6 Examples

The following is sample to clear all web sessions:

```
Switch# clear web session all
[OK]
```

### 7 Related Commands

show web users

### 18.8 show console

#### 1 Command Purpose

Use this command to show the current console configuration.

#### 2 Command Syntax

```
show console
```
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is sample output from the show console command:

```
Switch# show console
Current console configuration:
-----------------------------------------------
line console 0
    speed 115200
    parity none
    databits 8
    stopbits 1
    exec-timeout 10 0
    privilege level 4
    no line-password
    no login
```

7 Related Commands

line console

18.9 show vty

1 Command Purpose

Use this command to show the current vty configuration.

2 Command Syntax

```
show vty
```
3  **Command Mode**

Privileged EXEC

4  **Default**

None

5  **Usage**

None

6  **Examples**

The following is sample output from the show vty command:

```
Switch# show vty
line vty maximum 8
line vty 0 7
  exec-timeout 35791 0
  privilege level 4
  no line-password
  no login
```

7  **Related Commands**

line vty

18.10  **show rsa keys**

1  **Command Purpose**

Use this command to show RSA key information.

2  **Command Syntax**

```
show rsa keys
```

3  **Command Mode**

Privileged EXEC
4 Default
None

5 Usage
None

6 Examples
The following is sample to show RSA key:

```
Switch# show rsa keys
Current RSA key configuration:
Name                      Type Usage Modulus
-------------------------------{}-----+---
abc                        private 0 1024
importkey                  public 1 1024
```

7 Related Commands
rsa key

18.11 show rsa key

1 Command Purpose
Use this command to show RSA key information.

2 Command Syntax
```
show rsa key RSAKEYNAME ( der | pem ( 3des RSAPASSWORD | aes128 RSAPASSWORD | aes192 RSAPASSWORD | aes256 RSAPASSWORD | des RSAPASSWORD | ) ) |
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSAKEYNAME</td>
<td>Key name</td>
<td>-</td>
</tr>
<tr>
<td>der</td>
<td>Certificate of der</td>
<td>-</td>
</tr>
<tr>
<td>pem</td>
<td>Certificate of pem</td>
<td>-</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------</td>
<td>----</td>
</tr>
<tr>
<td>3des</td>
<td>Treble encryption standard</td>
<td>-</td>
</tr>
<tr>
<td>des</td>
<td>Data encryption standard</td>
<td>-</td>
</tr>
<tr>
<td>Aes128</td>
<td>Advanced encryption standard 128 bit</td>
<td>-</td>
</tr>
<tr>
<td>Aes192</td>
<td>Advanced encryption standard 192 bit</td>
<td>-</td>
</tr>
<tr>
<td>Aes256</td>
<td>Advanced encryption standard 256 bit</td>
<td>-</td>
</tr>
<tr>
<td>RSAPASSWORD</td>
<td>Passphrase used to protect the private key (length should &gt;= 6)</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is sample to show RSA key:

Switch# show rsa key abc
RSA key information:-----------------------------------

Garlandtechnology.com
Name: abc
Type: private
Modulus: 1024 bit
Usage count: 0
Private key DER code:
3082058
2001
00
D0180
D4E93929 2DC1014D 9D64EF3 A8AB905D FDCF2D08 6DE6AC26 691D3168 E4C2F812
39439DA3 A1DE64BB 50DE534D 718FF6D6 69DDC302 F005FBC6 A3A3E616 4A9EEF47
9093A08B 42FA36A8 71C3CB02 ECF14DD1 EEED33AF 9ED5DF87 B32A072F 5C620463
515753C2 EC610B25 4228B7F0 D9E99DF7 9ADD011B 7BA49B7F 1B838AA9 D92003CB
0203
010001
D28180
2B45DBA0 484FF1FB E8AF2D8C C853565C 4421BFD5 5F1ABF5A 6F32C7CC 11FEEA7C
CS6EDC6 9C25F953 291486C9 CEB2FBCE 01EE589C 583C5F17 D85A8FB1 28597358
2F71C055 E9E4CA9F A1639486 DF19DF70 69246C57 09570697 142C283E 50786669
9483EB8B A3529C01 61552516 859740C7 7D5E0610 460A266B B977F546 96C9D981
F06C6D70 F348C0F8 5A6CFB99 215A04FB 9C9E29FE 5FBF93F3 1EE3C6E8
B552B58C 9B851B66 74B35957 38896051 CCBD6875 A3AF57B7 71BCF6A1 66448303
0240
E2B47BD7 7A5C7D8F 41FB8311 BFE4308D 0DF24D7D 0FDACECF 7921975A A7B2B623
1E19A4B8 57F12487 B284D4EA A2EEC370 06DB370F 0E7289B6 10DF15A1 3852D359
0240
098D5B9B 38EF47B 99BEB2D3 56CB8DE6 C67E524E 7BB8594A B7D7B733 F54A3FA1
079237E9 5DFA7F38 36FD2D95 E9D528B8 94840218 E8A74700 F17F7B58 0B89B985
F040
9D0333F7 CE990420 A19B18E6 F28CB230 A5246CC2 BD5A0923 3E489346 E33135E5
EE2394D1 39E9D9E6 6219C96D 82FB22E7 88BDCEBD 7CB5C300 BB2DCB99 6AC97809
0240
BEF8F899 CDB82A8A BA1E881B 7B189124 B737008B 3F40B23A AAE64BA4 CF07E99E
58261516 C58A1468 5603B90B 24CFD0FC 2609C215 E30375CA 0764FF71 1BF434FF
Public key DER code:
308180
D28180
D4E93929 2DC1014D 9D64EF3 A8AB905D FDCF2D08 6DE6AC26 691D3168 E4C2F812
39439DA3 A1DE64BB 50DE534D 718FF6D6 69DDC302 F005FBC6 A3A3E616 4A9EEF47
9093A08B 42FA36A8 71C3CB02 ECF14DD1 EEED33AF 9ED5DF87 B32A072F 5C620463
515753C2 EC610B25 4228B7F0 D9E99DF7 9ADD011B 7BA49B7F 1B838AA9 D92003CB
0203
010001

7 Related Commands

rsa key

18.12 show key config

1 Command Purpose

Use this command to display the details of the current key configuration.
2 Command Syntax

show key config

3 Command Mode

Rsa Key Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the current key configuration:

```
Switch(config-rsa-key)# show key config
Current key configuration:
  key type: private
  key format: pem
  key password: unspecified
```

7 Related Commands

rsa key

18.13 show key string

1 Command Purpose

Use this command to display the details of the current key string.

2 Command Syntax

show key string
3 Command Mode

Rsa Key Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the current key string:

```
Switch(config)# rsa key a
Modify private key a
Switch(config-rsa-key)# show key string
Current key string:
30820258
  0201
  00
  028180
  AD4F1364 4F46C9F9 25D7BA98 B7F266A4 P3448E83 71D51F84 EF225E90 7D0117F0
  CDB1012F 50944BF3 17A5CA56 7A2DC3D2 6A33CD52 6FD2DBE3 442C6546 DC3DD48A
  D8A4020C 2333F303 53FD390E 01E50388 F1B59E7A 58355FA2 26148F58 48C1D6B9
  36828C61 00A518CD F7EEBFBF 68CD8456 DCDB8F5F 550A1273 28EF8E7C 0469634F
  0203
  010001
  028180
  9321ACDE DE06C4F5 45D14DD2 D5676F08 DE95F73F 546690E9 B472C341 7B3E706A
  B8ACAAAA D687EFAA A30AD72A 6F7366E9 BCDBDA6 01D54B64 37BE51D0 579A074
  1206C3DC 70BA58B2 D22F0049 EAB2CA3 8AAA932 C28D332B 1C7F5E5C 0052751C
  A5BA0D06 B0F9E6D2 9FE9281D FE2976C9 6C1A328B 590EB014 311AE5E2 0514AE41
  0240
  D8101ACD BAA5EA745 A5C52F61 19498B76 C181D0A0 F1CA197B C352024A 09206E1E
  B5217249 B595CA01 EBF82649 B272511C 8AD5138C 553717CD 4120D026 5D8CAE51
  0240
  CC82F390 B66C95FA AE967B81 C343F9E0 2D41B59F 45C41197 28F37B3B 0C90D7B6
  48678580 73876AEF 7692CC6C A7A51A6C 81C62BE6 FF75E209 75D02A51 E2346F9F
  0240
  943B5F52 B80199F1 F0EE70C C5A686F0 C20FD6D9 DB4C6855 34E91BE2 F8317C8C
  B6DCECFA A5BA8FA8 F87F3A4A 28F00B94 2118AE9E B8AB484C 2B302C89 CA6A11C1
  0240
  3F15C828 FF664F7D 5C8D9EB9 90584F4A 0F51DAC4 ABE0A76C 717D696D F4F0B451
  CE53E0A6 9994942F 9F9E9EAF 48D76D27 3E133388 F0E86703 7401CA81 D7BD4511
  0240
  90D784A0 EBF913CE 82A19E91 4A0C5437 120C758F F9C94932 919A36B5 5BB01C76
  746665E5 6A1E2227 1BF592D3 650FC6EA DE22C1CB Fcca9433 A2FA142C D9D75CC9
Switch(config-rsa-key)#
```
7 Related Commands

rsa key

18.14 show tacacs

1 Command Purpose

Use this command to display information about TACACS+ server's configurations.

2 Command Syntax

show tacacs

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is sample output from the show tacacs command:

```
Switch# show tacacs
=================================================================================================
Host  Port  Timeout  Retries  Dead  Secret
=================================================================================================
2.1.1.1  49  5  3  0  mykey
```

7 Related Commands

tacacs-server host
show aaa status

**Command Purpose**

Use this command to show authentication, authorization, accounting (AAA) status.

**Command Syntax**

show aaa status

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

None

**Examples**

The following example shows how to show authentication, authorization, accounting status:

```
Switch# show aaa status
AAA status:
    Authentication enable
```

**Related Commands**

aaa new-model
18.16  show aaa privilege mapping

1  Command Purpose

Use this command to show privilege mapping relationship with server privilege.

2  Command Syntax

show aaa privilege mapping

3  Command Mode

Privileged EXEC

4  Default

None

5  Usage

None

6  Examples

The following example shows how to show privilege mapping relationship:

```
Switch# show aaa privilege mapping

<table>
<thead>
<tr>
<th>Server</th>
<th>Switch</th>
<th>Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2~10</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>11~15</td>
<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>
```

7  Related Commands

aaa privilege mapping
18.17  show aaa method-lists

1  Command Purpose

Use this command to show authentication, authorization, accounting (AAA) authentication method lists.

2  Command Syntax

show aaa method-lists authentication ( accounting | all | authentication | authorization )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>accounting</td>
<td>Accounting information</td>
<td>-</td>
</tr>
<tr>
<td>all</td>
<td>All information</td>
<td>-</td>
</tr>
<tr>
<td>authentication</td>
<td>Authentication information</td>
<td>-</td>
</tr>
<tr>
<td>authorization</td>
<td>Authorization information</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Privileged EXEC

4  Default

None

5  Usage

None

6  Examples

The following example shows how to show authentication method lists:
Switch# show aaa method-lists all

Authenticated queue = AAA_MUX_AUTHEN_LOGIN
  Name = default  state = ALIVE: local radius none
Author queue = AAA_MUX_AUTHOR_SHELL
  Name = default  state = ALIVE: tacplus none
Account queue = AAA_MUX_ACCT_SHELL
  Name = default  state = ALIVE: none
Account queue = AAA_MUX_ACCT_COMMAND
  Name = default  state = ALIVE: none

7 Related Commands

aaa authentication login

    aaa authentication exec

    aaa accounting exec

18.18 line console

1 Command Purpose

Use this command to set console configuration.

2 Command Syntax

   line console 0

3 Command Mode

   Global Configuration

4 Default

   None

5 Usage

   None
6 Examples

The following is an example of configure to line console 0:

```
Switch(config)# line console 0
Switch(config-line)#
```

7 Related Commands

show console

18.19 line vty

1 Command Purpose

Use line vty command to set virtual terminal line configuration.

2 Command Syntax

```
line vty VTYID1 ( VTYID2 | )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTYID1</td>
<td>First Line number</td>
<td>0-7</td>
</tr>
<tr>
<td>VTYID2</td>
<td>Last Line number</td>
<td>0-7</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

None
6  Examples

The following is an example of configure to virtual terminal line 4 to 7:

```
Switch(config)# line vty 4 7
Switch(config-line)#
```

7  Related Commands

show vty

18.20  line vty maximum

1  Command Purpose

Use line vty maximum command to set maximum vty users.

Use the no form of this command to set maximum vty users to its default value.

2  Command Syntax

```
line vty maximum VTYMAX
```

```
no line vty maximum
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTYMAX</td>
<td>Max Line number</td>
<td>0-8. default is 8</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

8

5  Usage

None
6  Examples

The following is an example of configure to three vty users:

```plaintext
Switch(config)# line vty maximum 3
```

The following is an example to reset maximum vty users:

```plaintext
Switch(config)# no line vty maximum
```

7  Related Commands

`show line vty`

18.21  rsa key generate

1  Command Purpose

Use this command to create a key.

Use the no form of this command to delete the key.

2  Command Syntax

`rsa key RSAKEYNAME generate ( RSAKEYBITS | )`

`no rsa key RSAKEYNAME`

---

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSAKEYNAME</td>
<td>Key name</td>
<td>String begin with [a-zA-Z], valid character is among [0-9A-Za-z-__], up to 255 characters.</td>
</tr>
<tr>
<td>RSAKEYBITS</td>
<td>RSA key bits number</td>
<td>768-4096, default is 1024</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration
4 Default

None

5 Usage

None

6 Examples

The following example creates a key named test, length is 768:

```
Switch(config) # rsa key test generate 768
Generating RSA private key, 768 bit long modulus
Please waiting for a moment: done!
Public exponent is 65537 (0x10001)
Generate RSA key successfully
```

The following example deletes the key:

```
Switch(config) # no rsa key test
```

7 Related Commands

use rsa key

```
rsa key
```

18.22 rsa key import

1 Command Purpose

Use this command to import a key.

2 Command Syntax

```
rsa key RSAKEYNAME import mgmt-if url STRING ( private | public ) ( der | der-hex | pem ( PASSPHRASE | ) | ssh1 ( PASSPHRASE | ) | ssh2 ( PASSPHRASE | ) )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
</table>

3.0.9

245

Garlandtechnology.com
3 Command Mode

Global Configuration

4 Default

None

5 Usage

None

6 Examples

The following example imports a key:

```
Switch(config)# rsa key importnewk import mgmt-if url tftp://10.10.38.160/newk.pub
public ssh2

Download from URL to temporary file.
Get file from tftp://10.10.38.160/newk.pub

Received 212 bytes in 0.1 seconds
Copy the temporary file to its destination.

File system synchronization. Please waiting...
212 bytes in 0.1 seconds, 2 kbytes/second
% Import RSA key succeeded
```
7 Related Commands

rsa key generate

rsa key export

18.23 rsa key export

1 Command Purpose

Use this command to export a key.

2 Command Syntax

rsa key RSAKEYNAME export mgmt-if url STRING ( private | public ) ( der | der-hex | pem ( ( 3des | aes128 | aes192 | aes256 | des ) PASSPHRASE | ) | ssh1 ( 3des PASSPHRASE | ) | ssh2 ( 3des PASSPHRASE | ) )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSAKEYNAME</td>
<td>Key name</td>
<td>-</td>
</tr>
<tr>
<td>STRING</td>
<td>The url to save the key file</td>
<td>-</td>
</tr>
<tr>
<td>private</td>
<td>Export to private key</td>
<td>-</td>
</tr>
<tr>
<td>public</td>
<td>Export to public key</td>
<td>-</td>
</tr>
<tr>
<td>der</td>
<td>der-hex</td>
<td>pem</td>
</tr>
<tr>
<td>3des</td>
<td>aes128</td>
<td>aes192</td>
</tr>
<tr>
<td>PASSPHRASE</td>
<td>Encrypt the key string</td>
<td>-</td>
</tr>
</tbody>
</table>
3  Command Mode

Global Configuration

4  Default

None

5  Usage

None

6  Examples

The following example exports a key:

```
Switch(config)# rsa key newk export mgmt-if url tftp://10.10.38.160/newk.pub
public ssh2
Send file to tftp://10.10.38.160/newk.pub
Sent 212 bytes in 0.0 seconds
% Export RSA key success
```

7  Related Commands

rsa key generate

rsa key import

18.24  rsa key

1  Command Purpose

Use this command to create a key and enter key configuration mode.

Use the no form of this command to delete the key.

2  Command Syntax

rsa key RSAKEYNAME
no rsa key RSAKEYNAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSAKEYNAME</td>
<td>Key name</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

None

6 Examples

The following example creates a key named test:

```
Switch(config)# rsa key test
Switch(config-rsa-key)#
```

The following example deletes a key named test:

```
Switch(config)# no rsa key test
```

7 Related Commands

rsa key generate

18.25 reset

1 Command Purpose

To clear all key configurations, use the reset command in RSA key configuration mode.
2 Command Syntax

reset

3 Command Mode

Rsa Key Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows to clear all configurations for the key KEY1:

```bash
Switch(config)# rsa key KEY1
Switch(config-rsa-key)# reset
```

7 Related Commands

rsa key

18.26 key type

1 Command Purpose

To specify the key type, use the key type command in RSA key configuration mode.

2 Command Syntax

key type ( private | public )
### Command Mode

**Rsa Key Configuration**

### Default

**Public**

### Usage

**None**

### Examples

The following example specifies the key type of KEY1 as public key:

```
Switch(config)# rsa key KEY1
Switch(config-rsa-key)# key type public
```

### Related Commands

- rsa key

#### 18.27 key format

**Command Purpose**

To specify the key format, use the key format command in RSA key configuration mode.

**Command Syntax**

`key format (der | pem )`
3 Command Mode

Rsa Key Configuration

4 Default

DER

5 Usage

None

6 Examples

The following example specifies the key format of KEY1 as pem:

```
Switch(config)# rsa key KEY1
Switch(config-rsa-key)# key format pem
```

7 Related Commands

rsa key

18.28 key string end

1 Command Purpose

Use this command to exit the rsa key configuration mode and apply all rsa key configurations. After using this command, the current command mode should be global configuration mode.
2 Command Syntax

key string end

3 Command Mode

Rsa Key Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows exit the rsa key configuration mode:

```
Switch(config)# rsa key KEY1
Switch(config-rsa-key)# key string end
Switch(config)#
```

7 Related Commands

rsa key

18.29 validate

1 Command Purpose

To check the validation of the key strings, use the validate command in RSA key configuration mode.

2 Command Syntax

validate
3 Command Mode

Rsa Key Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows to validate key strings of the key KEY1:

```
Switch(config)# rsa key a
Modify private key a
Switch(config-rsa-key)# 00302017 4A7D385B 1234EF29 335FC973
Switch(config-rsa-key)# 2DD50A37 C4F4B0FD 9EAD748 429618D5
Switch(config-rsa-key)# validate
% Validated Ok
```

7 Related Commands

rsa key

18.30 KEYLINE

1 Command Purpose

To add key strings from the screen directly, type any strings in RSA key configuration mode except the keywords in this mode.

2 Command Syntax

KEYLINE
3  Command Mode

Rsa Key Configuration

4  Default

None

5  Usage

None

6  Examples

The following example shows to type a key string of the key KEY1:

Switch(config)# rsa key KEY1
Switch(config-rsa-key)# 00302017 4A7D385B 1234EF29 335FC973
Switch(config-rsa-key)# 2DD50A37 C4F4B0FD 9DAD3E748

7  Related Commands

rsa key

validate

18.31  re-activate radius-server

1  Command Purpose

Use this command to re-activate the specified radius servers.

2  Command Syntax

re-activate radius-server ( all | host IP_ADDR ( auth-port AUTHDPORT | ) | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to re-activate the radius server. It’s unnecessary for users to wait for the radius-server dead time with this command.

6 Examples

This example shows how to re-activate radius-server:

```
Switch# re-activate radius-server all
```

7 Related Commands

radius-server host
18.32  

**show radius-server**

1  **Command Purpose**

Use this command to display radius server states of each IEEE 802.1 x sessions.

2  **Command Syntax**

```
show radius-server
```

3  **Command Mode**

Privileged EXEC

4  **Default**

None

5  **Usage**

Use this command to display the current radius-server and dead radius-servers of each IEEE 802.1x sessions.

6  **Examples**

This example shows how to show radius-server:

```
Switch# show radius-server

+----------------------------------+
| radius servers in dead list:     |
| server address : 10.0.0.1:1812    |
| dead timer : 4                    |
+----------------------------------+
```

7  **Related Commands**

radius-server host
18.33 radius-server host

1 Command Purpose

Use this command to specify a RADIUS server host.

Use the no form of this command to delete the host.

2 Command Syntax

radius-server host mgmt-if IP_ADDR ( auth-port AUTHDPOR T | ) ( key ( 8 | AUTHDKEY | ) ( retransmit AUTHDRETRIES | ) ( timeout AUTHDTIMEOUT | )

no radius-server host mgmt-if IP_ADDR ( auth-port AUTHDPOR T | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt-if</td>
<td>Use management interface</td>
<td>-</td>
</tr>
<tr>
<td>IP_ADDR</td>
<td>IP address of radius server</td>
<td>-</td>
</tr>
<tr>
<td>auth-port AUTHDPOR T</td>
<td>RADIUS server port number (default 1812)</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
<tr>
<td>key ( 8</td>
<td>AUTHDKEY</td>
<td>)</td>
</tr>
<tr>
<td>retransmit AUTHDRETRIES</td>
<td>RADIUS server retries (default 3)</td>
<td>-</td>
</tr>
<tr>
<td>timeout AUTHDTIMEOUT</td>
<td>RADIUS server timeout in seconds (default 5)</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default
None

5 Usage
You can use multiple radius-server host commands to specify multiple hosts. The software searches for hosts in the order in which you specify them. If no host-specific timeout, retransmit, or key values are specified, the global values apply to each host.

6 Examples
This example shows how to set the radius-server key:

```
Switch(config)# radius-server host mgmt-if 10.0.0.1
```

This example shows how to delete radius-server key:

```
Switch(config)# no radius-server host mgmt-if 10.0.0.1
```

7 Related Commands
show radius-server

18.34 radius-server deadtime

1 Command Purpose
Use this command to improve RADIUS response times when some servers might be unavailable and cause the unavailable servers to be skipped immediately.

Use the no form of this command to restore the default value.

2 Command Syntax
radius-server deadtime \textit{DEADTIME}

```
no radius-server deadtime
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0.9</td>
<td>259</td>
<td>Garlandtechnology.com</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

5

5 Usage

Use this command to cause the switch to mark as “dead” any RADIUS servers that fail to respond to authentication requests, thus avoiding the wait for the request to time out before trying the next configured server. A RADIUS server marked as “dead” is skipped by additional requests for the duration of minutes, unless there are no servers not marked “dead”.

6 Examples

This example shows how to set radius-server dead time:

```
Switch(config)# radius-server deadtime 10
```

This example shows how to restore the default radius-server dead time:

```
Switch(config)# no radius-server deadtime
```

7 Related Commands

show radius-server
18.35 radius-server retransmit

1 Command Purpose

Use this command to specify the number of times the switch searches the list of RADIUS server hosts before giving up.

Use the no form of this command to restore the default value.

2 Command Syntax

radius-server retransmit \texttt{RETRANSMIT}

\texttt{no radius-server retransmit}

3 Command Mode

Global Configuration

4 Default

3

5 Usage

The switch tries all servers, allowing each one to time out before increasing the retransmit count. If the RADIUS server is only a few hops from the switch, we recommend that you configure the RADIUS server retransmit rate to 5.

6 Examples

This example shows how to set radius-server retransmit:

\texttt{Switch(config)# radius-server retransmit 10}

This example shows how to set default radius-server retransmit:
Related Commands

show radius-server

18.36 radius-server timeout

Command Purpose

Use this command to set the interval for which a switch waits for a server host to reply.

Use the no form of this command to restore the default value.

Command Syntax

radius-server timeout \textit{TIMEOUT}

\textbf{no radius-server timeout}

Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMEOUT</td>
<td>RADIUS server timeout in seconds</td>
<td>1-1000 seconds. default is 5 seconds</td>
</tr>
</tbody>
</table>

Command Mode

Global Configuration

Default

Usage

Use this command to set the number of seconds a switch waits for a server host to reply before timing out. If the RADIUS server is only a few hops from the switch, we recommend that you configure the RADIUS server timeout to 15 seconds.
6 Examples

This example shows how to set radius-server timeout:

```
Switch(config)# radius-server timeout 10
```

This example shows how to set default radius-server timeout:

```
Switch(config)# no radius-server timeout
```

7 Related Commands

show radius-server

18.37 radius-server key

1 Command Purpose

Use this command to set the shared encryption key of RADIUS server.

Use the no form of this command to delete the configuration.

2 Command Syntax

radius-server key (8 | ) STRING

no radius-server timeout

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
<tr>
<td>STRING</td>
<td>RADIUS server key-string</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4  **Default**

None

5  **Usage**

Use this command to set the shared encryption key in a switch. Shared encryption key is the foundation of communicate between switch and server. You need set a same shared encryption string in authentication server and switch.

6  **Examples**

This example shows how to set the radius-server key:

```
Switch(config)# radius-server key 123456
```

This example shows how to unset radius-server key:

```
Switch(config)# no radius-server key
```

7  **Related Commands**

`show radius-server`

18.38  **re-activate tacacs-server**

1  **Command Purpose**

Use this command to re-activate the specified tacacs servers.

2  **Command Syntax**

```
re-activate tacacs-server ( all | host IP_ADDR ( auth-port AUTHDPORT | ) )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Re-active all tacacs-servers</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to re-activate the tacacs server. It’s unnecessary for users to wait for the tacacs-server dead time with this command.

6 Examples

This example shows how to re-activate tacacs-server:

```
Switch# re-activate tacacs-server host 10.0.0.1 auth-port 49
```

7 Related Commands

tacacs-server host

18.39 tacacs-server host

1 Command Purpose

Use this command to set tacacs-server parameters.

Use the no form of this command to delete the tacacs server.
2 Command Syntax

tacacs-server host mgmt-if IP_ADDR ( auth-port AUTHDPORT | ) ( key (8 | ) AUTHDKEY | ) ( retransmit AUTHDRETRIES | ) ( timeout AUTHDTIMEOUT | )

no tacacs-server host mgmt-if IP_ADDR ( auth-port AUTHDPORT | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt-if</td>
<td>Use management interface</td>
<td>-</td>
</tr>
<tr>
<td>IP_ADDR</td>
<td>IP address of TACACS server</td>
<td>-</td>
</tr>
<tr>
<td>auth-port AUTHDPORT</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
<tr>
<td>key (8</td>
<td>) AUTHDKEY</td>
<td></td>
</tr>
<tr>
<td>retransmit AUTHDRETRIES</td>
<td>TACACS server retries (default 3)</td>
<td>-</td>
</tr>
<tr>
<td>timeout AUTHDTIMEOUT</td>
<td>TACACS server timeout in seconds (default 5)</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

Use this command to set tacacs-server parameters.
Use the no form of this command to delete the tacacs server.

6 Examples

The following example set tacacs-server 2.1.1.1:

```
Switch(config)# tacacs-server host 2.1.1.1 key mykey
```

The following example deletes tacacs-server 2.1.1.1:

```
Switch(config)# no tacacs-server host 2.1.1.1
```

7 Related Commands

show tacacs

18.40 username

1 Command Purpose

Use this command to create a local user account on the switch.

Use the no form of this command to delete the account.

2 Command Syntax

username \textit{NAME\_STRING}

no username \textit{NAME\_STRING}

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{NAME_STRING}</td>
<td>User name</td>
<td>String begin with {a-zA-Z}, valid character is among {0-9A-Za-z.-}, up to 31 characters.</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default

None

5 Usage

Use this command to create a local user account on the switch.

Use the no form of this command to delete the account.

6 Examples

This is a sample output from this command displaying how to add a user named testName:

```
Switch(config)# username testName
```

This is a sample output from this command displaying how to delete a user named testName:

```
Switch(config)# no username testName
```

7 Related Commands

show usernames

18.41 username password

1 Command Purpose

Use this command to add username and password.

2 Command Syntax

username NAME_STRING password ( 8 | ) PASSWORD ( privilege PRIVILEGE | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>User name</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

None

5 Usage

Use this command to add username and password.

6 Examples

This is a sample output from this command displaying how to add a user named testName and with the password of 123456.:

```
Switch(config)# username testName password 123456
```

7 Related Commands

show usernames

18.42 username assign

1 Command Purpose

Use this command to assign a public key to a user.

Use the no form of this command to remove the configuration.

2 Command Syntax

username NAME_STRING assign rsa key RSAKEYNAME
no username \texttt{USERNAME} assign rsa key

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>User name</td>
<td>String begin with [a-zA-Z], valid character is among [0-9A-Za-z.-_], up to 31 characters.</td>
</tr>
<tr>
<td>RSAKEYNAME</td>
<td>Key Name</td>
<td>-</td>
</tr>
</tbody>
</table>

3 \hspace{1cm} \textbf{Command Mode}

Global Configuration

4 \hspace{1cm} \textbf{Default}

None

5 \hspace{1cm} \textbf{Usage}

Use this command to assign a public key to a user.

Use the no form of this command to remove the configuration.

6 \hspace{1cm} \textbf{Examples}

This is a sample output from this command displaying how to assign a key:

\begin{verbatim}
Switch(config)# username abc assign rsa key importkey
\end{verbatim}

This is a sample output from this command displaying how to delete the assigned key:

\begin{verbatim}
Switch(config)# no username abc assign rsa key
\end{verbatim}

7 \hspace{1cm} \textbf{Related Commands}

username

rsa key
18.43  username privilege

1  Command Purpose

Use this command to set user privilege level.

2  Command Syntax

username $NAME_STRING$ privilege $PRIVILEGE$ ( password ( 8 | ) $PASSWORD$ | secret $PASSWORD$ | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>User name</td>
<td>String begin with [a-zA-Z], valid character is among [0-9A-Za-z.-_], up to 31 characters.</td>
</tr>
<tr>
<td>PRIVILEGE</td>
<td>Set user privilege level</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
<tr>
<td>$PASSWORD$</td>
<td>User password string</td>
<td>-</td>
</tr>
<tr>
<td>secret $PASSWORD$</td>
<td>User secret string</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

None

5  Usage

Use this command to set user privilege level.
6   Examples

This is a sample output from this command displaying how to add a user named testName and with the privilege 3 and password of 12345:

    Switch(config)# username u1 privilege 3 secret 12345

7   Related Commands

show usernames

18.44   username secret

1   Command Purpose

Use username command to create a local user account with secret password.

2   Command Syntax

username NAME_STRING secret PASSWORD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>User name</td>
<td>String begin with [a-zA-Z], valid character is among [0-9A-Za-z.-_], up to 31 characters.</td>
</tr>
<tr>
<td>secret PASSWORD</td>
<td>User secret string</td>
<td>-</td>
</tr>
</tbody>
</table>

3   Command Mode

Global Configuration

4   Default

None
5  Usage

Use username command to create a local user account with secret password.

6  Examples

This is a sample output from this command displaying how to add a user named u2 and with the secret 23.:

```
Switch(config)# username u2 secret 23
```

7  Related Commands

show usernames

18.45  re-username

1  Command Purpose

Use re-username command to modify local user account on the switch.

2  Command Syntax

```
re-username OLD_NAME NEW_NAME
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLD_NAME</td>
<td>Old user name</td>
<td>String begin with [a-zA-Z], valid character is among [0-9A-Za-z.-_], up to 31 characters.</td>
</tr>
<tr>
<td>NEW_NAME</td>
<td>New user name</td>
<td>String begin with [a-zA-Z], valid character is among [0-9A-Za-z.-_], up to 31 characters.</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

None

5 Usage

Use re-username command to modify local user account on the switch.

6 Examples

The following example shows how to change user account's name:

Switch(config)# re-username oldUser newUser

7 Related Commands

show usernames

18.46 enable password

1 Command Purpose

Use this command to set the password which is needed when user enter Privileged EXEC mode.

2 Command Syntax

enable password ( 8 | ) PASSWORD

no enable password

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

None

5 Usage

If this command is set, user need to provide the password when enter Privileged EXEC mode.

6 Examples

The following example shows how to set the password:

```
Switch(config)# enable password 654321
Switch(config)# exit
Switch# disable
Switch> enable

Password: 
Switch#
```

The following example shows how to unset the password:

```
Switch(config)# no enable password
```

7 Related Commands

```
enable
disable
```

18.47 enable password privilege

1 Command Purpose

Use this command to set the password which is needed when user enter Privileged EXEC mode.
Use the no form of this command to unset the password when user enter Privileged EXEC mode.

2 Command Syntax

enable password privilege PRIVILEGE ( 8 | ) PASSWORD

no enable password privilege PRIVILEGE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIVILEGE</td>
<td>Set user privilege level</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
<tr>
<td>PASSWORD</td>
<td>Enable password string</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

If this command is set, user need to provide the password when enter Privileged EXEC mode.

6 Examples

The following example shows how to set the password:

```
Switch(config)# enable password privilege 2 abc123
Switch(config)# exit
Switch# disable
Switch> enable 2
Password: 
Switch#
```

The following example shows how to unset the password:
Switch(config)# no enable password privilege 2

7 Related Commands

enable

disable

18.48 service password-encryption

1 Command Purpose

Use this command to set up the miscellaneous service encrypt system passwords.

Use the no form of this command to unset service encrypt system passwords.

2 Command Syntax

service password-encryption

no service password-encryption

3 Command Mode

Global Configuration

4 Default

Not encrypt

5 Usage

After use this command, the password in the display result of “show current-configuration” should be encrypted.

After use the no form of this command, the newly added password in the display result of “show current-configuration” should be plain text and the existing password should still be encrypted.
6 Examples

The following example shows how to set service password-encryption:

```
Switch(config)# service password-encryption
```

The following example shows how to unset service password-encryption:

```
Switch(config)# no service password-encryption
```

7 Related Commands

show current-configuration

18.49 aaa new-model

1 Command Purpose

Use this command to enable the authentication, authorization, accounting (AAA) access control model.

Use the no form of this command to disable the authentication, authorization, accounting (AAA) access control model.

2 Command Syntax

aaa new-model

    no aaa new-model

3 Command Mode

Global Configuration

4 Default

Disabled
5 Usage

Use this command to enable the authentication, authorization, accounting (AAA) access control model.

Use the no form of this command to disable the authentication, authorization, accounting (AAA) access control model.

6 Examples

The following example shows how to enable AAA access control model:

```
Switch(config)# aaa new-model
```

The following example shows how to disable AAA access control model:

```
Switch(config)# no aaa new-model
```

7 Related Commands

show aaa status

18.50 aaa authentication login

1 Command Purpose

Use the aaa authentication login configuration command to set authentication, authorization, accounting (AAA) authentication at login.

Use the no form of this command to delete the configuration.

2 Command Syntax

```
aaa authentication login ( default | AUTHLISTNAME ) ( enable | ) ( line | ) ( radius | ) ( tacplus | ) ( local | ) ( none | )
```

```
no aaa authentication login ( default | AUTHLISTNAME )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Command Mode

Global Configuration

### Default

None

### Usage

Use the `aaa authentication login` configuration command to specify one or more AAA methods.

### Examples

The following example shows how to set authentication at login:

```
Switch(config)# aaa authentication login default local radius none
```

The following example shows how to delete authentication:

```
Switch(config)# no aaa authentication login default
```
7 Related Commands

show aaa method-lists authentication

18.51 aaa authorization exec

1 Command Purpose

Use the aaa authorization exec configuration command to set authentication, authorization, accounting (AAA) authorization at login.

2 Command Syntax

aaa authorization exec ( default | AUTHLISTNAME ) ( none | ) ( radius | ) ( local | ) ( tacplus | )

no aaa authorization exec ( default | AUTHLISTNAME )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>Default method list</td>
<td>-</td>
</tr>
<tr>
<td>AUTHLISTNAME</td>
<td>Named authentication list</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(a-zA-Z0-9._-)</td>
<td></td>
</tr>
<tr>
<td>none</td>
<td>No authentication</td>
<td>-</td>
</tr>
<tr>
<td>radius</td>
<td>RADIUS server</td>
<td>-</td>
</tr>
<tr>
<td>local</td>
<td>Local username</td>
<td>-</td>
</tr>
<tr>
<td>tacplus</td>
<td>TACACS+</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None
5 Usage

Use the `aaa authorization exec` configuration command to set authentication, authorization, accounting (AAA) authorization at login.

6 Examples

The following example shows how to set authorization exec:

```
Switch# configure terminal
Switch(config)# aaa authorization exec default tacplus none
```

7 Related Commands

- `show aaa method-lists authorization`

18.52 `aaa accounting exec`

1 Command Purpose

Use this command to set authentication, authorization, accounting (AAA) accounting at login.

Use the no form of this command to delete the configuration.

2 Command Syntax

```
aaa accounting exec ( default | AUTHLISTNAME ) ( start-stop ( radius | tacplus | none ) | stop-only
             ( radius | tacplus | none ) | none )
no aaa accounting exec ( default | AUTHLISTNAME )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>Default method list</td>
<td>-</td>
</tr>
<tr>
<td>AUTHLISTNAME</td>
<td>Named authentication list</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(a-zA-Z0-9._-)</td>
<td></td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

None

5 Usage

Use this command to set authentication, authorization, accounting (AAA) accounting at login.

6 Examples

The following example shows how to set accounting exec:

```
Switch# configure terminal
Switch(config)# aaa accounting exec default start-stop tacplus
```

The following example shows how to delete accounting:

```
Switch# configure terminal
Switch(config)# no aaa accounting exec default
```

7 Related Commands

show aaa method-lists accounting
18.53     aaa accounting commands

1     Command Purpose

Use this command to set authentication, authorization, accounting (AAA) accounting for commands.

Use the no form of this command to delete the configuration.

2     Command Syntax

aaa accounting commands ( default | AUTHLISTNAME ) ( tacplus | none ) *

no aaa accounting commands ( default | AUTHLISTNAME )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>Default method list</td>
<td>-</td>
</tr>
<tr>
<td>AUTHLISTNAME</td>
<td>Named authentication list</td>
<td>(a-zA-Z0-9-_.-)</td>
</tr>
<tr>
<td>tacplus</td>
<td>TACACS+</td>
<td>-</td>
</tr>
<tr>
<td>none</td>
<td>No authentication</td>
<td>-</td>
</tr>
</tbody>
</table>

3     Command Mode

Global Configuration

4     Default

None

5     Usage

Use this command to set authentication, authorization, accounting (AAA) accounting for commands.
6 Examples

The following example shows how to set accounting commands:

```
Switch# configure terminal
Switch(config)# aaa accounting commands default tacplus
```

The following example shows how to delete accounting for commands:

```
Switch# configure terminal
Switch(config)# no aaa accounting commands default
```

7 Related Commands

show aaa method-lists accounting

18.54 aaa privilege mapping

1 Command Purpose

Use this command to set the mapping range in AAA server and switch.

Use the no form of this command to restore the default mapping.

2 Command Syntax

aaa privilege mapping $AAA_PRIVILEGE1$ $AAA_PRIVILEGE2$ $AAA_PRIVILEGE3$

no aaa privilege mapping

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$AAA_PRIVILEGE1$</td>
<td>Max server privilege mapping to switch privilege 1 (default is 0)</td>
<td>-</td>
</tr>
<tr>
<td>$AAA_PRIVILEGE2$</td>
<td>Max server privilege mapping to switch privilege 2 (default is 1)</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

0, 1, 10

5 Usage

0: The server privilege 0 mapping to switch level 1
   1: The server privilege 1 mapping to switch level 2
   9: The server privilege 2-9 mapping to switch level 3

Other: The server privilege 10-15 mapping to switch level 4

6 Examples

The following example shows how to set the mapping range:

Switch(config)# aaa privilege mapping 0 1 14

The following example shows how to set default mapping range:

Switch# configure terminal
Switch(config)# no aaa privilege mapping

7 Related Commands

show aaa privilege mapping
18.55 debug aaa

1 Command Purpose

Use this command to enable debugging aaa.

Use the no form of this command to disable debugging aaa.

2 Command Syntax

depth aaaa ( all | packet | event | protocol | timer )

no debug aaa ( all | packet | event | protocol | timer )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Enable to report all aaa debug messages</td>
<td>-</td>
</tr>
<tr>
<td>packet</td>
<td>Enable to report aaa debug messages for sending and receiving packets</td>
<td>-</td>
</tr>
<tr>
<td>event</td>
<td>Enable to report aaa debug messages for events</td>
<td>-</td>
</tr>
<tr>
<td>protocol</td>
<td>Enable to report aaa debug messages for protocol states</td>
<td>-</td>
</tr>
<tr>
<td>timer</td>
<td>Enable to report aaa debug messages for timer</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC
4 Default

Disabled

5 Usage

None

6 Examples

In the following example shows how to enable debugging aaa all:

```
Switch# debug aaa all
```

In the following example shows how to disable debugging aaa all:

```
Switch# no debug aaa all
```

7 Related Commands

show debugging

18.56 exec-timeout

1 Command Purpose

Use this command to set console timeout value.

Use the no form of this command to restore the default value.

2 Command Syntax

```
exec-timeout ETIMEOUTMIN ( ETIMEOUTSEC | )
```

```
no exec-timeout
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETIMEOUTMIN</td>
<td>Timeout value in minute.</td>
<td>0-35791</td>
</tr>
</tbody>
</table>
### Command Mode

Line Configuration

### Default

10

### Usage

None

### Examples

The following example shows how to set console exec-timeout to 2 minutes 30 seconds:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# exec-timeout 2 30
```

The following example shows how to set console exec-timeout to default value:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# no exec-timeout
```

### Related Commands

show console

### login

1

### Command Purpose

Use this command to enable console password checking, you can choose local password checking.

Use the no form of this command to disable console password checking.
2 Command Syntax

login ( local | )

no login ( local | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>local</td>
<td>Local username</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Line Configuration

4 Default

no password checking

5 Usage

Use this command to enable console password checking, you can choose local password checking.

Use the no form of this command to disable console password checking.

6 Examples

The following example shows how to set console local password checking enable:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# login local
```

The following example shows how to set console local password checking disable:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# no login local
```

7 Related Commands

show console
18.58 privilege level

1 Command Purpose

Use this command to set console privilege level for line.

Use the no form of this command to restore the default value.

2 Command Syntax

privilege level PRIVILEGE

no privilege level

3 Command Mode

Line Configuration

4 Default

1

5 Usage

Use this command to set console privilege level for line.

Use the no form of this command to restore the default value.

6 Examples

The following example shows how to set console privilege level for line to 2:

Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# privilege level 2

Parameter | Parameter Description | Parameter Value
---|---|---
PRIVILEGE | Default privilege level for line | -
The following example shows how to set console privilege level for line to default value:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# no privilege level
```

7 Related Commands

show console

18.59 line-password

1 Command Purpose

Use this command to set console line-password specifies a hidden password will follow or user password string.

Use the no form of this command to unset console line-password.

2 Command Syntax

```
line-password ( 8 | ) NAME_STRING
```

```
no line-password
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Specifies a hidden password will follow</td>
<td>-</td>
</tr>
<tr>
<td>NAME_STRING</td>
<td>User password string</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Line Configuration

4 Default

No console line-password
5 Usage

Use this command to set console line-password specifies a hidden password will follow or user password string.

Use the no form of this command to unset console line-password.

6 Examples

The following example shows how to set console line-password specifies a hidden password will follow:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# line-password 8 test
```

The following example shows how to unset console line-password:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# no line-password
```

7 Related Commands

show console

18.60 stopbits

1 Command Purpose

Use this command to set console sync line stop bits.

Use no form of this command to set console sync line stop bits to default value.

2 Command Syntax

```
stopbits ( 1 | 2 )
```

```
no stopbits
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>stopbits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Command Mode

Line Configuration

4 Default

One-bit stop

5 Usage

None

6 Examples

The following example shows how to set console sync line stop bits one-bit stop:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# stopbits 1
```

The following example shows how to set console sync line stop bits to default value:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# no stopbits
```

7 Related Commands

show console

18.61 databits

1 Command Purpose

Use this command to set console number of data bits.
Use the no form of this command to set console number of data bits per character to default value.

2 Command Syntax

databits (7 | 8)

no databits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>7-bit databits.</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>8-bit databits.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Line Configuration

4 Default

8-bit databits

5 Usage

Use this command to set console number of data bits.

   Use the no form of this command to set console number of data bits per character to default value.

6 Examples

The following example shows how to set console number of data bits per character to 7-bit databits:

switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# databits 7

7 Related Commands

show console
18.62  **parity**

1  **Command Purpose**

Use this command to set console terminal parity.

   Use the no form of this command to restore the default value.

2  **Command Syntax**

    parity ( even | odd | none )

    no parity

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>even</td>
<td>Parity mode even</td>
<td>-</td>
</tr>
<tr>
<td>odd</td>
<td>Parity mode odd</td>
<td>-</td>
</tr>
<tr>
<td>none</td>
<td>No parity</td>
<td>-</td>
</tr>
</tbody>
</table>

3  **Command Mode**

Line Configuration

4  **Default**

No parity

5  **Usage**

Use this command to set console terminal parity.

   Use the no form of this command to restore the default value

6  **Examples**

The following example shows how to set console terminal parity type odd:
The following example shows how to set console terminal parity type to default value:

```
Switch# configure terminal
Switch(config)# line console 0
Switch(config-line)# parity odd
```

7 Related Commands

line console

    show console

18.63 speed

1 Command Purpose

Use this command to set the transmit and receive speeds of console terminal.

Use the no form of this command to restore the default value.

2 Command Syntax

speed ( 115200 | 57600 | 38400 | 19200 | 9600 | 4800 | 2400 | 1200 | 600 )

    no speed

3 Command Mode

Line Configuration

4 Default

115200

5 Usage

None
6  Examples

The following is an example of set console terminal speed to 115200:

```
Switch(config)# line console 0
Switch(config-line)# speed 115200
```

The following is an example of set console terminal speed to default value:

```
Switch(config)# line console 0
Switch(config-line)# no speed
```

7  Related Commands

show console

18.64  authorization exec

1  Command Purpose

Use this command to enable authentication, authorization, accounting (AAA) authorization for logins.

Use the no form of this command to restore the default value.

2  Command Syntax

authorization exec ( default | LISTNAME )

no authorization exec

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>Default authorization list</td>
<td>-</td>
</tr>
<tr>
<td>LISTNAME</td>
<td>An authorization list with this name (a-zA-Z0-9,...)</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Line Configuration
4 Default

None

5 Usage

Use this command to enable authentication, authorization, accounting (AAA) authorization for logins.

Use the no form of this command to restore the default value.

6 Examples

The following example shows how to enable authorization for logins:

```
Switch# configure terminal
Switch(config)# line vty 0 7
Switch(config-line)# authorization exec default
```

The following example shows how to set authorization to default method list:

```
Switch# configure terminal
Switch(config)# line vty 0 7
Switch(config-line)# no authorization exec
```

7 Related Commands

show vty

18.65 accounting exec

1 Command Purpose

Use this command to enable authentication, authorization, accounting (AAA) accounting for logins.

Use the no form of this command to restore the default value.

2 Command Syntax

accounting exec ( default | LISTNAME )

no accounting exec
3 Command Mode

Line Configuration

4 Default

None

5 Usage

Use this command to enable authentication, authorization, accounting (AAA) accounting for logins.

Use the no form of this command to restore the default value.

6 Examples

The following example shows how to enable accounting for logins:

```
Switch# configure terminal
Switch(config)# line vty 0 7
Switch(config-line)# accounting exec default
```

The following example shows how to set accounting exec to default method list:

```
Switch# configure terminal
Switch(config)# line vty 0 7
Switch(config-line)# no accounting exec
```

7 Related Commands

show vty
18.66 accounting commands

1 Command Purpose

Use this command to enable accounting for commands.

2 Command Syntax

accounting commands ( default | LISTNAME )

    no accounting commands

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>Default accounting list</td>
<td>-</td>
</tr>
<tr>
<td>LISTNAME</td>
<td>An accounting list with this name (a-zA-Z0-9._-)</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Line Configuration

4 Default

None

5 Usage

Use this command to enable accounting for commands.

6 Examples

The following example shows how to enable accounting for commands:

```
Switch# configure terminal
Switch(config)# line vty 0 7
Switch(config-line)# accounting commands default
```
7 Related Commands

show vty

18.67 end

1 Command Purpose

To end the current configuration session and return to Privileged EXEC mode, use the end command in global configuration mode.

2 Command Syntax

end

3 Command Mode

All Configuration Mode

4 Default

None

5 Usage

This command will bring you back to Privileged EXEC mode regardless of what configuration mode or configuration sub-mode you are in.

This global configuration command can be used in any configuration mode.

Use this command when you are done configuring the system and you want to return to EXEC mode to perform verification steps.

6 Examples

In the following example, the end command is used to exit from interface configuration mode and return to Privileged EXEC mode:
7 Related Commands

None

18.68 ip access-class

1 Command Purpose

Use this command to set vty IPv4 ACL. Use the no form of this command to remove ACL from vty.

2 Command Syntax

ip access-class NAME_STRING in

no ip access-class in

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>IP ACL NAME</td>
<td>The initial character name should be a-z, A-Z, 0-9 or <em>-, character only can be 0-9A-Za-z</em>- and the max length is 20</td>
</tr>
</tbody>
</table>

3 Command Mode

Line Configuration

4 Default

None

5 Usage

None
6 Examples

The following example shows how to configure IPv4 ACL on vty:

```
Switch# configure terminal
Switch(config)# line vty 1
Switch(config-line)# ip access-class a4 in
```

7 Related Commands

ip access-list
19 SFLOW Commands

19.1 sflow enable

1 Command Purpose

Use this command to enable sFlow globally.

Use the no form of this command to disable sFlow.

2 Command Syntax

sflow enable

no sflow enable

3 Command Mode

Global Configuration

4 Default

Disabled

5 Usage

Before any other sFlow command can be configured, sFlow services must be enabled globally. Use the no parameter with this command to remove all sFlow configurations and disable sFlow globally.

6 Examples

This example shows how to enable sFlow services globally:
Switch(config)# sflow enable

This example shows how to disable sFlow services globally:

Switch(config)# no sflow enable

7 Related Commands

show sflow

19.2 sflow agent

1 Command Purpose

Use this command to configure sFlow agent.

Use the no form of this command to delete the sFlow agent.

2 Command Syntax

sflow agent ip IP_ADDR

no sflow agent ip

Use this command to configure IP address for sflow agent. If not configured, sflow agent IP address will be 0.0.0.0.

Parameter | Parameter Description | Parameter Value
---|---|---
IP_ADDR | IPv4 address | -
6 Examples

This example shows how to configure agent with IP address 10.0.0.254:

```bash
Switch(config)# sflow agent ip 10.0.0.254
```

This example shows how to configure agent with IP address 0.0.0.0:

```bash
Switch(config)# no sflow agent ip
```

7 Related Commands

show sflow

19.3 sflow collector

1 Command Purpose

Use this command to configure sFlow collector.

Use the no form of this command to delete the sFlow collector.

2 Command Syntax

```bash
sflow collector mgmt-if IP_ADDR ( UDP_PORT | )

no sflow collector IP_ADDR
```

3 Command Mode

Global Configuration
4 Default

Default source ip is the ip address of interface which is connected with sflow collector

5 Usage

Use this command to add a collector by specifying the combination of IP address and UDP port and source IP address. Only up to two unique combinations can be allowed to add.

6 Examples

This example shows how to add a collector:

```
Switch(config)# sflow collector mgmt-if 10.0.0.254 3000
```

This example shows how to remove a collector:

```
Switch# configure terminal
Switch(config)# no sflow collector 10.0.0.254 3000
```

7 Related Commands

show sflow

19.4 sflow counter interval

1 Command Purpose

Use this command to configure sFlow polling-interval for counter sample.

Use the no form of this command to restore the default value.

2 Command Syntax

sflow counter interval INTERVAL_VAL

no sflow counter interval

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
</table>

3.0.9
3 Command Mode

Global Configuration

4 Default

20

5 Usage

Use this command to set sFlow polling-interval for counter sample. Use the no parameter with this command to restore to the default value. Default interval value is 20 seconds.

6 Examples

This example shows how to set sFlow polling-interval to 10 second:

```
Switch(config)# sflow counter interval 10
```

This example shows how to set sFlow polling-interval to default value:

```
Switch(config)# no sflow counter interval
```

7 Related Commands

show sflow

19.5 sflow counter-sampling enable

1 Command Purpose

Use this command to enable counter sampling on specified port.

Use the no form of this command to disable counter sampling.
2 Command Syntax

sflow counter-sampling enable

no sflow counter-sampling enable

3 Command Mode

Interface Configuration

4 Default

Disabled

5 Usage

Use this command to enable counter sampling on specified port. This command can only be configured on a port which is not a link-agg group member. The port can be either a physical port or a link-agg port.

6 Examples

This example shows how to set sFlow polling-interval to 10 second:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# sflow counter-sampling enable
```

This example shows how to disable sFlow counter sampling on interface eth-0-1:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# no sflow counter-sampling enable
```

7 Related Commands

show sflow

19.6 sflow flow-sampling rate

1 Command Purpose

Use this command to configure flow sampling rate.
Use the no form of this command to restore the default value.

2 Command Syntax

sflow flow-sampling rate RATE

no sflow flow-sampling rate

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE</td>
<td>Sample rate value,</td>
<td>must be a power of 2. Range is 1-32768, default is 32768.</td>
</tr>
</tbody>
</table>

3 Command Mode

Interface Configuration

4 Default

32768

5 Usage

Use this command to set sFlow packet sampling rate. The rate value is packet number. When the value is 32768, one packet will be sampled when 32768 packets are passed, sFlow uses CPU resources to collect samples and send samples to the collector. If a low sampling rate is set, CPU utilization can become high. To protect CPU from overwhelming, exceeded flow samples would be dropped. If a sampling rate less than default value is configured, a prompt will be given to info the potential of involving a high CPU utilization. This command can only be configured on a port which is not a link-agg group member. The port can be either a physical port or a link-agg port.

6 Examples

This example shows how to enable sFlow counter sampling on interface eth-0-1:
This example shows how to disable sFlow counter sampling on interface eth-0-1:

```
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# no sflow flow-sampling rate
```

7 Related Commands

show sflow

19.7 sflow flow-sampling enable

1 Command Purpose

Use this command to enable packet sampling on individual port.

Use the no form of this command to disable packet sampling.

2 Command Syntax

sflow flow-sampling enable ( input | output | both )

no sflow flow-sampling enable ( input | output | both )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>input</td>
<td>Sampling for input packets</td>
<td>-</td>
</tr>
<tr>
<td>output</td>
<td>Sampling for output packets</td>
<td>-</td>
</tr>
<tr>
<td>both</td>
<td>Sampling for packets on both direction</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Interface Configuration
4 Default

Disabled

5 Usage

Use this command to enable packet sampling on individual port. This command can only be configured on a port which is not a link-agg group member. The port can be either a physical port or a link-agg port.

6 Examples

This example shows how to enable input packet sampling on route port eth-0-1:

```
Switch# configure terminal
Switch(config)# interface eth-0-1
Switch(config-if-eth-0-1)# sflow flow-sampling enable input
```

7 Related Commands

show sflow

19.8 debug sflow

1 Command Purpose

Use this command to turn on the debug switches of sflow module.

Use the no form of this command to turn off the debug switches of sflow module.

2 Command Syntax

ddebug sflow ( all | packet | counter | sample )

no debug sflow ( all | packet | counter | sample )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
</table>

3.0.9 313 Garlandtechnology.com
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>all</strong></td>
<td>Enable to report all debug messages</td>
</tr>
<tr>
<td><strong>counter</strong></td>
<td>Enable to report sflow debug messages for counters</td>
</tr>
<tr>
<td><strong>packet</strong></td>
<td>Enable to report sflow debug messages for sending and receiving packets</td>
</tr>
<tr>
<td><strong>sample</strong></td>
<td>Enable to report sflow debug messages for sampling</td>
</tr>
</tbody>
</table>

### 3 Command Mode

Privileged EXEC

### 4 Default

Disabled

### 5 Usage

Use this command to turn on the debug switches of sflow module.

### 6 Examples

In the following example shows how to enable debugging sflow all:

```
Switch# Switch# debug sflow all
```

### 7 Related Commands

show debugging
19.9  show sflow

1  Command Purpose

Use this command to show the running information of sflow.

2  Command Syntax

show sflow

3  Command Mode

Privileged EXEC

4  Default

None

5  Usage

Use this command to show the running information of sflow.

6  Examples

This example shows how to show the sflow running information:

```
Switch# show sflow
sFlow Version: 4
sFlow Global Information:
  Agent IPv4 address: 10.0.0.254
  Counter Sampling Interval: 10 seconds
Collector 1:
  IPv4 Address: 10.0.0.254
  Port: 3000
sFlow Port Information:

<table>
<thead>
<tr>
<th>Port</th>
<th>Counter</th>
<th>Flow</th>
<th>Flow-Sample</th>
<th>Flow-Sample Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-7</td>
<td>Enable</td>
<td>Enable</td>
<td>Input</td>
<td>2048</td>
</tr>
</tbody>
</table>
```

7  Related Commands

sflow enable
sflow agent
20 GLOBAL Commands

20.1 show debugging

1 Command Purpose

To display the debugging status, use the show debugging command in EXEC mode.

2 Command Syntax

show debugging ( aaa | sflow | ) ( detail | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>aaa</td>
<td>Display the states of aaa debugging</td>
<td>-</td>
</tr>
<tr>
<td>sflow</td>
<td>Display the states of sflow debugging</td>
<td>-</td>
</tr>
<tr>
<td>detail</td>
<td>Display the detailed information of debugging</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

Use this command to display the debugging status.

6 Examples

The following is sample output from the show debugging aaa command:

```
Switch# show debugging aaa detail
+-----------+----------+----------+----------+
| Module    | Feature  | Type     | Status   |
|-----------+----------+----------+----------+
| auth      | aaa      | event    | on       |
| aaa       | packet   | on       |
| aaa       | protocol | off      |
| aaa       | timer    | on       |
```

7 Related Commands

d debug aaa

d debug sflow

20.2 no debug all

1 Command Purpose

Use this command to turn off all debugging switches.

2 Command Syntax

no debug all

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

Use this command to turn off all debugging switches.

6 Examples

In the following example shows how to disable all debugging:

```
Switch# no debug all
```

7 Related Commands

show debugging

20.3 show history

1 Command Purpose

To display the history command lines, use the show history command in EXEC mode.

2 Command Syntax

show history

3 Command Mode

Privileged EXEC

4 Default

none

5 Usage

Use this command to display the history command lines.
6 Examples

This example shows how to display history commands information of device:

```plaintext
Switch# show history
  1 show version
  2 debug sflow all
  3 no debug sflow all
  4 show history 1 show history
```

7 Related Commands

None

20.4 show running-config

1 Command Purpose

To display the current operating configuration, use the show running-config command in EXEC mode.

2 Command Syntax

```plaintext
show running-config
```

3 Command Mode

Privileged EXEC

4 Default

none

5 Usage

Use this command to display the current operating configuration.

6 Examples

This example shows how to display current operating configuration of device:
Switch# show running-config

hostname Switch
timestamp sync systime
username admin privilege 4 password admin
username test privilege 4 password test
!
logging server enable
logging merge disable
logging merge timeout 23
!
ntp authentication enable
!
ntp server mgmt-if 1.1.1.1
ntp server mgmt-if 10.10.25.8
ntp server mgmt-if 192.16.22.44 version 2
!
snmp-server enable
snmp-server system-contact admin@example.com
!
snmp-server view view1 included .1.2.3.4 mask f
!
snmp-server community sysname read-write
!
snmp-server trap target-address mgmt-if 10.10.27.232 community sysname
!
management ip address 10.10.39.104/23
management route add gateway 10.10.39.254
!
port-channel load-balance hash-arithmetic crc
port-channel load-balance set vxlan-vni
port-channel load-balance set inner-dst-mac
!
flow f1
!
flow f2
!
sflow enable
sflow agent ip 10.0.0.254
sflow counter interval 10
!
interface eth-0-1
description TenGigabitEthernet
speed 1000
shutdown
!
interface eth-0-2
shutdown
!
interface eth-0-3
shutdown static-channel-group 10
!
interface eth-0-4
shutdown static-channel-group 10
!
interface eth-0-5
shutdown static-channel-group 5
!
interface eth-0-6
shutdown
!
interface eth-0-7
shutdown
sflow counter-sampling enable
sflow flow-sampling enable input
aflow flow-sampling rate 2048
!
interface eth-0-8
  shutdown
!
interface eth-0-9
  shutdown
!
interface eth-0-10
  shutdown
!
interface eth-0-11
!
interface eth-0-12
!
interface eth-0-13
!
interface eth-0-14
!
interface eth-0-15
!
interface eth-0-16
!
interface eth-0-17
!
interface eth-0-18
!
interface eth-0-19
!
interface eth-0-20
!
interface eth-0-21
!
interface eth-0-22
!
interface eth-0-23
!
interface eth-0-24
!
interface eth-0-25
!
interface eth-0-26
!
interface eth-0-27
!
interface eth-0-28
!
interface eth-0-29
!
interface eth-0-30
!
interface eth-0-31
!
interface eth-0-32
!
interface eth-0-33
!
interface eth-0-34
!
interface agg5
description LinkAgg5
!
interface agg10
!
tap-group tap1 1
  ingress eth-0-1 flow f1
  egress eth-0-9
!
tap-group tap2 2
Related Commands

None

20.5 md5sum

1 Command Purpose

To calculate the md5sum of the file.

2 Command Syntax

md5sum FILENAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILENAME</td>
<td>Specify the file name</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

none
5 Usage

Use this command to calculate the md5sum of the file.

6 Examples

This example shows how to calculate the md5sum of the file:

```
Switch# md5sum flash:/boot/OS-v580-tap-v3.0.8.bin
8771a9cb344cebb70f8baa4715f3f97d flash:/boot/OS-v580-tap-v3.0.8.bin
```

7 Related Commands

None
21 MANAGEMENT Commands

21.1 show diagnostic-information

1 Command Purpose

Use this command to display the diagnostic information of the system.

2 Command Syntax

show diagnostic-information

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Diagnostic information includes “show version” information, “show clock” information, etc.

The result is usually very long and user can print the result into a file on the flash.

6 Examples

The following example shows how to display the diagnostic information:

Switch# show diagnostic-information
7 Related Commands

show version

show clock

21.2 show services

1 Command Purpose

To display the networking services, use the show services command in privileged EXEC mode.

2 Command Syntax

show services

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

This command is used to display networking services of the switch.

6 Examples

In the following example shows how to display networking services of the switch:

```
Switch# show services

Networking services configuration:
Service Name Status Port Protocol
----------------------------------
http enable 80 TCP
 telnet enable 23 TCP
 ssh enable 22 TCP
 snmp disable 161 UDP
```
7 Related Commands

None

21.3 show services rpc-api

1 Command Purpose

2 Command Syntax

show services rpc-api

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

Switch# show services rpc-api

RPC-API service configuration:
Server State : disable
Port : 80
Authentication Mode : none
SSL State : disable

7 Related Commands

service rpc-api
21.4 hostname

1 Command Purpose

To specify or modify the host name for the network server, use the hostname command in global configuration mode.

Use the no form of this command to reset the default value.

2 Command Syntax

hostname NAME_STRING

no hostname

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME_STRING</td>
<td>This system’s network name</td>
<td>Up to 63 characters.</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

Switch

5 Usage

The host name is used in prompts and default configuration filenames.

The name must also follow the rules for ARPANET host names. They must start with a letter, and have as interior characters only letters, digits, hyphens, and underline. Names must be 63 characters or fewer.
6  Examples

The following example changes the host name to DUT1:

```
Switch(config)# hostname DUT1
```

The following example changes the host name to default:

```
DUT1(config)# no hostname
```

7  Related Commands

None

21.5  format

1  Command Purpose

To format file system.

2  Command Syntax

format ( system | boot | udisk: )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>system</td>
<td>The system partition</td>
<td>-</td>
</tr>
<tr>
<td>boot</td>
<td>The boot partition</td>
<td>-</td>
</tr>
<tr>
<td>udisk:</td>
<td>The USB mass storage device (MSDOS file system)</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration
4 Default
None

5 Usage
Format the USB mass storage device (MSDOS file system)

6 Examples
The following shows an example to format USB mass storage device:

```
Switch(config)# format udisk:
WARNING: All data on udisk: will be lost!!!
And format operation may take a while. Are you sure to process with format?
[yes/no]: yes
```

7 Related Commands

umount udisk:

21.6 umount udisk:

1 Command Purpose
To uninstall the USB mass storage device before plug out it from the switch.

2 Command Syntax

umount udisk:

3 Command Mode
Global Configuration

4 Default
None
5 Usage

USB mass storage device must exist in the system. You can use the “umount” command to uninstall the USB mass storage device.

6 Examples

The following example umount USB mass storage device:

```
Switch(config)# umount udisk:
```

7 Related Commands

format udisik:

21.7 reset factory-config

1 Command Purpose

To reset factory configuration

2 Command Syntax

reset factory-config

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

The flash/boot/ .factory-config.conf needs to exist for resetting factory configuration.
6 Examples

The following shows an example to reset factory configuration:

```
Switch# reset factory-config
Startup-config will be overwritten with factory-config. Continue? [yes/no]: y
```

7 Related Commands

None

21.8 management ip address dhcp

1 Command Purpose

Use this command to set the management IP address on the Switch from the dhcp protocol.

To remove the management IP address from the dhcp protocol, use the no form of this command.

2 Command Syntax

management ip address dhcp

    no management ip address dhcp

3 Command Mode

Global Configuration

4 Default

None

5 Usage

User cannot connect to the device via telnet and only console port is available for management after removing the IP address.
6  Examples

The following example sets the management ipv4 address from dhcp protocol:

```
Switch(config)# management ip address dhcp
```

The following example unsets the management ipv4 address from dhcp protocol:

```
Switch(config)# no management ip address dhcp
```

7  Related Commands

management ip address

21.9  management ip address

1  Command Purpose

Use this command to set the management IP address on the Switch.

To remove the management IP address, use the no form of this command.

2  Command Syntax

management ip address IP_ADDR_MASK

    no management ip address

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP_ADDR_MASK</td>
<td>IP address with mask length</td>
<td>In A.B.C.D/M format</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

None
5  Usage

User cannot connect to the device via telnet and only console port is available for management after removing the IP address.

6  Examples

The following example sets the management ipv4 address:

```
Switch(config)# management ip address 10.10.39.104/23
```

The following example unsets the management ipv4 address:

```
Switch(config)# no management ip address
```

7  Related Commands

management route gateway

21.10  management ipv6 address

1  Command Purpose

Use this command to set the management IPv6 address on the Switch.

To remove the management IPv6 address, use the no form of this command.

2  Command Syntax

management ipv6 address IPV6_ADDR_MASK

no management ipv6 address

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPV6_ADDR_MASK</td>
<td>IPv6 address with mask length</td>
<td>In X::X::X::X/M format</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

None

5 Usage

User cannot connect to the device via telnet and only console port is available for management after removing the IP address.

6 Examples

The following example sets the management ipv6 address:

```
Switch(config)# management ipv6 address 2000::1/64
```

The following example unsets the management ipv6 address:

```
Switch(config)# no management ipv6 address
```

7 Related Commands

management ipv6 route gateway

21.11 management route gateway

1 Command Purpose

Use this command to set the gateway on the Switch for management ip.

Use no form of this command to delete the gateway on the Switch for management ip.

2 Command Syntax

management route (add | ) gateway IP_ADDR
no management route gateway

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>add</td>
<td>Add a gateway address</td>
<td>-</td>
</tr>
<tr>
<td>IP_ADDR</td>
<td>IP address</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

Use this command to set the gateway on the Switch for management ip.

Use no form of this command to delete the gateway on the Switch for management ip.

6 Examples

The following example sets the gateway of 192.168.100.254 for the switch:

```
Switch(config)# management route add gateway 192.168.100.254
```

The following example unsets the gateway of 192.168.100.254 for the switch:

```
Switch(config)# no management route gateway
```

7 Related Commands

management ip address
21.12 management ipv6 route gateway

1 Command Purpose

Use this command to set the gateway on the Switch for management ipv6 address.

2 Command Syntax

management ipv6 route ( add | del ) gateway IPV6_ADDR

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>add</td>
<td>Add a gateway ipv6 address</td>
<td></td>
</tr>
<tr>
<td>del</td>
<td>Delete a gateway ipv6 address</td>
<td></td>
</tr>
<tr>
<td>IPV6_ADDR</td>
<td>IPv6 address</td>
<td></td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

Use this command to set the gateway on the Switch for management ipv6 address.

6 Examples

The following example sets the gateway of 2000::64 for the switch:

```
Switch(config)# management ipv6 route add gateway 2000::64
```
7 Related Commands

management ipv6 address

21.13 service telnet enable

1 Command Purpose

Use this command to set service telnet enable.

Use the no form of this command to set service telnet disable.

2 Command Syntax

service telnet enable

no service telnet enable

3 Command Mode

Global Configuration

4 Default

Enabled

5 Usage

Uses this command to enable the telnet service.

6 Examples

The following example set telnet service enable for the switch:

Switch# configure terminal
Switch(config)# service telnet enable

The following example set telnet service disable for the switch:

Switch(config)# no service telnet enable
Connection closed by foreign host.
7  Related Commands

telnet

21.14  service http

1  Command Purpose

Use this command to set service http enable or disable or restart or timeout.

2  Command Syntax

service http ( enable | disable | restart | timeout TIMEOUT_VALUE )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable the http service</td>
<td>-</td>
</tr>
<tr>
<td>disable</td>
<td>Disable the http service</td>
<td>-</td>
</tr>
<tr>
<td>restart</td>
<td>Restart the http service</td>
<td>-</td>
</tr>
<tr>
<td>timeout TIMEOUT</td>
<td>Set http timeout value,</td>
<td>1-60</td>
</tr>
<tr>
<td></td>
<td>unit is minute</td>
<td></td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

Enabled

Timeout default value is 10 minutes

5  Usage

Uses this command to enable or disable or restart http service or set timeout value.
6 Examples

The following example set http service enable for the switch:

```
Switch(config)# service http enable
```

The following example set http service disable for the switch:

```
Switch(config)# service http disable
```

The following example set http service restart for the switch:

```
Switch(config)# service http restart
```

7 Related Commands

show web users

21.15 service http port

1 Command Purpose

Use this command to set set http service L4 port number; use the no command to set the default http service L4 port number.

2 Command Syntax

service http port \texttt{L4\textunderscore NUM\_PORT}

no service http port

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4\textunderscore NUM_PORT</td>
<td>Http service L4 port number</td>
<td>The range is 1025-65535</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default

80

5 Usage

None

6 Examples

The following example set http service L4 port number for the switch:

```
Switch(config)# service http port 2000
```

The following example set the default http service L4 port number for the switch:

```
Switch(config)# no service http port
```

7 Related Commands

show web users

21.16 service https

1 Command Purpose

Use this command to set service https enable or disable or restart or set https service L4 port number.

2 Command Syntax

```
service https ( enable | disable | restart )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Enable the https service</td>
<td>-</td>
</tr>
<tr>
<td>disable</td>
<td>Disable the https service</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

Enabled

5 Usage

Uses this command to enable or disable or restart https service.

6 Examples

The following example set https service enable for the switch:

```
Switch(config)# service https enable
```

The following example set https service disable for the switch:

```
Switch(config)# service https disable
```

The following example set https service restart for the switch:

```
Switch(config)# service https restart
```

7 Related Commands

show web users

21.17 service https port

1 Command Purpose

Use this command to set set https service L4 port number; use the no command to set the default https service L4 port number.
2 Command Syntax

service https port L4_NUM_PORT

    no service https port

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4_NUM_PORT</td>
<td>Https service L4 port number</td>
<td>The range is 1025-65535</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

443

5 Usage

None

6 Examples

The following example set https service L4 port number for the switch:

    Switch(config)# service https port 2000

The following example set the default https service L4 port number for the switch:

    Switch(config)# no service https port

7 Related Commands

show web users
21.18  service rpc-api enable

1  Command Purpose

Use the command to enable rpc-api service. And use disable command to disable rpc-api service.

2  Command Syntax

service rpc-api enable ( port PORT_NUM | ) ( ssl ( ssl-port SSL_PORT_NUM | ) | )

service rpc-api disable

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORT_NUM</td>
<td>port number of https service</td>
<td>Default port number is 80</td>
</tr>
<tr>
<td>SSL_PORT_NUM</td>
<td>port number of SSL service</td>
<td>Default port number is 443</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

Disabled

5  Usage

Use this command to enable RPC-API service. If parameters need to be modified, RPC-API service need to be disable. RPC-API service can not be enable when http has been enable.

6  Examples

The following example enables encrypted RPC-API service:

Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# service rpc-api enable ssl
Switch(config)#

The following example disables encrypted RPC-API service:

Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# service rpc-api disable
Switch(config)#

7 Related Commands

service rpc-api auth-mode

21.19 service rpc-api auth-mode

1 Command Purpose

Use the command to configure the auth mode of RPC-API.

2 Command Syntax

service rpc-api auth-mode ( basic )

no service rpc-api auth-mode

3 Command Mode

Global Configuration

4 Default

Configure the auth mode of RPC-API

5 Usage

Use this command to enable or disable the auth mode of RPC-API. If the auth mode has been enabled.
6  Examples

The following example enables the auth mode of RPC-API:

```
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# service rpc-api auth-mode basic
```

The following example disables the auth mode of RPC-API:

```
Switch(config)# no service rpc-api auth-mode basic
```

7  Related Commands

services rpc-api enable

21.20  certificate load pem-cert

1  Command Purpose

Use the command to import the new certificate file. Use the no command to restore the default certificate file.

2  Command Syntax

```
certificate load pem-cert (FILENAME | GFLASHFILE)
```

```
no certificate load pem-cert
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILENAME</td>
<td>certificate file name, no path but suffix</td>
<td>-</td>
</tr>
<tr>
<td>GFLASHFILE</td>
<td>certificate file name with path</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration
4 Default

Default certificate file

5 Usage

The private key and certificate need to be placed in the same file as the new certificate file. You need to upload the new certificate file to the any directory under the flash/directory on the device before using this command. Ensure that the HTTPS service is turned on at the time of command execution and restart the HTTPS service after execution to take effect.

6 Examples

The following example import new certificate file cert.pem:

```
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# certificate load pem-cert flash:/boot/cert.pem
Switch(config)#
```

The following example restore the default certificate file:

```
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# no certificate load pem-cert
Switch(config)#
```

7 Related Commands

None
22 SYSTEM CONFIGURATION

Commands

22.1 disable

1 Command Purpose

To exit Privileged EXEC mode and return to user EXEC mode, enter the disable command in EXEC mode.

2 Command Syntax

disable

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

To exit Privileged EXEC mode and return to user EXEC mode, enter the disable command in EXEC mode.

The prompt for Privileged EXEC mode is “#”, for EXEC mode is “>”.

6 Examples

In the following example, the user enters Privileged EXEC mode using the enable command, then exits back to user EXEC mode using the disable command:
Related Commands

enable

22.2 enable

1 Command Purpose

To enter Privileged EXEC mod, use the enable command in user EXEC or Privileged EXEC mode.

2 Command Syntax

enable

3 Command Mode

User EXEC

4 Default

None

5 Usage

To enter Privileged EXEC mod, use the enable command in user EXEC or Privileged EXEC mode.

    The prompt for Privileged EXEC mode is “#”, for EXEC mode is “>”.

6 Examples

In the following example, the user enters Privileged EXEC mode using the enable command. The system prompts the user for a password before allowing access to the Privileged EXEC mode. The password is not printed to the screen. The user then exits back to user EXEC mode using the disable command:

Switch# disable
Switch> enable
7 Related Commands

disable

enable password

22.3 logout

1 Command Purpose

To logout of the current CLI session, enter the logout command in EXEC mode.

2 Command Syntax

logout

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

To logout of the current CLI session, enter the logout command in EXEC mode.

6 Examples

In the following example, the user logout of the current CLI session using the logout command:

Switch# logout
Connection closed by foreign host.
7 Related Commands

None

22.4 `reboot`

1 Command Purpose

To reload the operating system, use the `reboot` command in Privileged EXEC mode.

2 Command Syntax

`reboot`

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

The `reboot` command halts the system. Use the `reboot` command after configuration information is entered into a file and saved to the startup configuration.

6 Examples

The following example is sample dialog from the `reboot` command:

```
Switch# reboot
Building configuration...
Reboot system? [confirm]y
Waiting ...
% Connection is closed by administrator!
```
Related Commands
write

22.5 show file system

1 Command Purpose

Use this command to show file system information.

2 Command Syntax

show file system

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to show file system information.

6 Examples

The following example is to show file system information:

```
Switch# show file system

Type       Size   Used   Free   Use%
-----------------------------------------------------
flash:/     887M   56M    827M    7%
flash:/boot 776M   360M   412M   47%
udisk:      0B      0B    0B     100%
```

Related Commands

None
22.6 show management ip address

1 Command Purpose
Use this command to show management interface ip address.

2 Command Syntax
show management ip address

3 Command Mode
Privileged EXEC

4 Default
None

5 Usage
Use this command to show management interface ip address.

6 Examples
The following example is to show management interface ip address:

```
Switch# show management ip address
Management IP address: 10.10.39.131/23
Gateway: 0.0.0.0
```

7 Related Commands
management ip address
management route gateway
22.7 show startup-config

1 Command Purpose

Use this command to show contents of startup configuration.

2 Command Syntax

show startup-config

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to show contents of startup configuration.

6 Examples

The following example is to show contents of startup configuration:

```
Switch# show startup-config

hostname Switch
timestamp sync systime
enable password abc
!
username admin privilege 4 password admin
username test privilege 4 password test
!
logging server enable
!
radius-server host mgmt-if 1.1.1.1
!
tacacs-server host mgmt-if 1.1.1.2
!
tacacs-server host mgmt-if 2.1.1.1 key mykey
!
ntp authentication enable
!
ntp key 43 aNickKey
```
ntp trustedkey 43
ntp key 123 ntpkty123

ntp server mgmt-if 1.1.1.1
ntp server mgmt-if 10.10.25.8
ntp server mgmt-if 192.16.22.44 version 2

snmp-server enable
snmp-server system-contact admin@example.com

snmp-server view view1 included .1.2.3.4 mask f

snmp-server trap target-address mgmt-if 10.10.27.232 community sysname

snmp-server inform target-address mgmt-if 10.10.27.233 community sysname

management ip address 10.10.39.104/23
management route add gateway 10.10.39.254

port-channel load-balance hash-arithmetic crc
port-channel load-balance set vxlan-vni
port-channel load-balance set inner-dst-mac

ip access-list a
ip access-list e1
ip access-list aaaa

flow f1
flow f2

sflow enable
sflow agent ip 10.0.0.254
sflow counter interval 10

interface eth-0-1
description TenGigabitEthernet
speed 1000
shutdown

interface eth-0-2
shutdown

interface eth-0-3
shutdown
static-channel-group 10

interface eth-0-4
shutdown
static-channel-group 10

interface eth-0-5
shutdown
static-channel-group 5

interface eth-0-6
shutdown

interface eth-0-7
shutdown

sflow counter-sampling enable
sflow flow-sampling enable input
sflow flow-sampling rate 2048

interface eth-0-8
shutdown
interface eth-0-9
  shutdown
!
interface eth-0-10
  shutdown
!
interface eth-0-11
!
interface eth-0-12
!
interface eth-0-13
!
interface eth-0-14
!
interface eth-0-15
!
interface eth-0-16
!
interface eth-0-17
!
interface eth-0-18
!
interface eth-0-19
!
interface eth-0-20
!
interface eth-0-21
!
interface eth-0-22
!
interface eth-0-23
!
interface eth-0-24
!
interface eth-0-25
!
interface eth-0-26
!
interface eth-0-27
!
interface eth-0-28
!
interface eth-0-29
!
interface eth-0-30
!
interface eth-0-31
!
interface eth-0-32
!
interface eth-0-33
!
interface eth-0-34
!
interface agg5
  description LinkAgg5
!
interface agg10
!
tap-group tap1 1
  ingress eth-0-1 flow f1
  egress eth-0-9
!
tap-group tap2 2
  ingress eth-0-21
  egress eth-0-22
!
tap-group g1 3
  ingress eth-0-33
Related Commands

write

22.8 write

1 Command Purpose
Use this command to write startup configuration.

2 Command Syntax
write

3 Command Mode
Privileged EXEC

4 Default
None

5 Usage
Use this command to write startup configuration.

6 Examples
The following example is to write startup configuration:

```
Switch# write
[OK]
```
7 Related Commands

show startup-config

22.9 boot system flash

1 Command Purpose

To specify the system image that the switch loads at startup in flash, use the following boot system
commands in Privileged EXEC mode.

2 Command Syntax

boot system flash STRING

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRING</td>
<td>System image file for next booting</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to specify an image to boot system.

This command will take effect after reboot.

6 Examples

The following example is sample dialog from the boot system command:
Switch# boot system flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.01

Are you sure to use flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.01 as the next boot image? [confirm]y
Waiting .......... success

7    Related Commands
reboot

22.10    boot system tftp:

1    Command Purpose
To specify the system image that the switch loads at startup in tftp, use the following boot system commands in Privileged EXEC mode.

2    Command Syntax
boot system tftp: mgmt-if IP_ADDR STRING

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP_ADDR</td>
<td>Server IP</td>
<td>-</td>
</tr>
<tr>
<td>STRING</td>
<td>Image file name</td>
<td>-</td>
</tr>
</tbody>
</table>

3    Command Mode
Privileged EXEC

4    Default
None

5    Usage
Management IP address in startup-config file will be used as source address when system boot via TFTP.
This command will take effect after reboot.

6 Examples

The following example is sample dialog from the boot system via tftp command:

```bash
Switch# boot system tftp: mgmt-if 10.10.38.160 SecPathTAP2000A-1MW110-E6601.BIN.01
Waiting... success
```

7 Related Commands

reboot

22.11 show boot

1 Command Purpose

To display the current image and the image the next startup will load, use the show boot command in Privileged EXEC mode.

2 Command Syntax

`show boot ( image | )`

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>image</td>
<td>Show the detailed information about the boot image.</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

Use this command to display the current image and the image the next startup will load.

6 Examples

The following is sample output from the show boot command:

```
Switch# show boot
The current boot image version is: 1.10, ESS 6601
The current running image is: flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.01
The next running image is: tftp://10.10.38.160/SecPathTAP2000A-IMW110-E6601.BIN.01
```

The following is sample output from the show boot image command:

```
Switch# show boot image
Current boot image version: E580-1.10, ESS 6601
System image files list:
<table>
<thead>
<tr>
<th>Create Time</th>
<th>Version</th>
<th>File name</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-08-02  13:32:31</td>
<td>v5.1.4</td>
<td>CNOS-e580-hybrid-v5.1.4.bin</td>
</tr>
<tr>
<td>* 2017-09-21 15:43:52</td>
<td>v1.10, ESS 6601</td>
<td>SecPathTAP2000A-IMW110-E6601.BIN.01</td>
</tr>
</tbody>
</table>
```

7 Related Commands

boot system flash

boot system tftp:

22.12 show memory

1 Command Purpose

Use this command to show memory with keyword.

2 Command Syntax

```
show memory ( ccs | cds | switch | chsm | appcfg | fea | authd | all )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ccs</td>
<td>Configure center service</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is sample output from the show memory appcfg command:

```
Switch# show memory appcfg
AppCfg Memory Information:                              Alloc Count Alloc Size
----------------------------------------------------------------------------------------------------
0  MEM_TEMP                                             1     8188
2  MEM_LIB_HASH                                         16    320
3  MEM_LIB_HASH_BUCKET_LIST                           16   131008
4  MEM_LIB_HASH_BUCKET                                  37    444
9  MEM_LIB.SOCK_MASTER                                 1     192
10 MEM_LIB.SOCK                                        5     1280
11 MEM_LIB.SOCK_SESSION                               17    229348
```
### Related Commands

show memory summary

### Command Purpose

Use this command to show the summary of memory states.
2 Command Syntax

show memory summary total

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is sample output from the show memory summary command:

```
Switch# show memory summary total
Total memory : 940428 KB
Used memory : 259228 KB
Freed memory : 661200 KB
Buffer memory : 0 KB
Cached memory : 125848 KB
Memory utilization: 27.56%
```

7 Related Commands

show memory

22.14 show cpu utilization

1 Command Purpose

Use this command to show utilizations of cpu.

2 Command Syntax

show cpu utilization
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to show utilizations of cpu.

6 Examples

The following is sample output from the show cpu utilization command:

```
Switch# show cpu utilization
  Process       Usage(%)  
-----------------------
python         3.42
fea           2.62
switch        0.20
appcfg        0.10
cds           0.10
snmpd         0.10
ccs           0.10
kworker       0.10
Others        5.55
-----------------------
  Total         12.29
```

7 Related Commands

None

22.15 terminal length

1 Command Purpose

Use this command to set number of terminal lines on a screen. Range is 0 to 512.

Use the no form of this command to restore the default value.
2 Command Syntax

terminal length TERM_LINES

    terminal no length

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM_LINES</td>
<td>Number of lines on screen (0 for no pausing)</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

0 (no pausing)

5 Usage

None

6 Examples

The following is sample to set terminal length lines:

    Switch# terminal length 100

The following is sample to unset terminal length lines:

    Switch# terminal no length

7 Related Commands

None
22.16 terminal monitor

1 Command Purpose

To copy debug output to the current terminal line, use the terminal monitor command in Privileged EXEC mode.

To close the debug output to the current terminal line, use the no form of this command.

2 Command Syntax

terminal monitor

terminal no monitor

3 Command Mode

Privileged EXEC

4 Default

Debug output to the current terminal line is closed

5 Usage

To copy debug output to the current terminal line, use the terminal monitor command in Privileged EXEC mode.

To close the debug output to the current terminal line, use the no form of this command.

6 Examples

The following is sample output from the terminal monitor command:

Switch# terminal monitor

The following is sample close the debug output to the current terminal line:

Switch# terminal no monitor
7  Related Commands

debug aaa

ddebug sflow

22.17  cd

1  Command Purpose

Change the current directory to dir, use the cd command in EXEC mode.

2  Command Syntax

\texttt{cd \ (STRING \ | \ )}

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRING</td>
<td>Directory name</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Privileged EXEC

4  Default

The initial default file system is flash:. If you do not specify a directory on a file system, the default is the root directory on that file system.

5  Usage

Change the current directory to dir, use the cd command in EXEC mode.

6  Examples

In the following example, the cd command is set the flash:/boot file system to the Flash memory:

\begin{verbatim}
Switch# cd flash:/boot
Switch# pwd
\end{verbatim}
## Related Commands

pwd

### 22.18 mkdir

#### 1 Command Purpose

To create a new directory in a Flash file system, use the mkdir command in EXEC mode.

#### 2 Command Syntax

`mkdir STRING`

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRING</td>
<td>Directory name or file name</td>
<td>-</td>
</tr>
</tbody>
</table>

#### 3 Command Mode

Privileged EXEC

#### 4 Default

None

#### 5 Usage

This command is valid only for local file systems.

#### 6 Examples

The following example creates a directory named newdir in Flash:

```
Switch# mkdir flash:/newdir
```
7 Related Commands

rmdir

dir

22.19 rmdir

1 Command Purpose

To remove an existing directory in a Flash file system or udisk device, use the rmdir command in Privileged EXEC mode.

2 Command Syntax

rmdir STRING

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRING</td>
<td>Directory name or file name</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

This command is valid only for local file systems.

6 Examples

The following example deletes a directory named newdir:
Switch# rmdir flash:/newdir
Are you sure to delete flash:/newdir ? [no]y

7 Related Commands
mkdir

22.20 pwd

1 Command Purpose
Use this command to print working directory.

2 Command Syntax
pwd

3 Command Mode
Privileged EXEC

4 Default
None

5 Usage
Use this command to print working directory.

6 Examples
The following example print current working directory:

Switch# pwd
flash:/

7 Related Commands
cd
22.21  ls

1  Command Purpose

To display a list of files on a file system, use the ls command in EXEC mode.

2  Command Syntax

ls ( flash: | flash:/boot | udisk: | ) ( STRING | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>flash:</td>
<td>File system on the flash</td>
<td>-</td>
</tr>
<tr>
<td>flash:/boot</td>
<td>File path “flash:/boot”</td>
<td>-</td>
</tr>
<tr>
<td>udisk:</td>
<td>USB storage devices</td>
<td>-</td>
</tr>
<tr>
<td>STRING</td>
<td>Directory name or file name</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Privileged EXEC

4  Default

None

5  Usage

Use the ls (Flash file system) command to display flash information.

6  Examples

The following is sample output from the ls command:

Switch# ls
### Related Commands

**dir**

### copy running-config

#### 1 Command Purpose

To copy current device configuration to other files, use this command in EXEC mode.

#### 2 Command Syntax

```
copy running-config (mgmt-if | ) (STRING | )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt-if</td>
<td>Need to connect to the URL via management interface</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to copy current running-config to destination file.

6 Examples

The following example copies the current configuration to the file named current-config.conf:

Switch# copy running-config flash:/current-config.conf
flash:/current-config.conf
[OK]

7 Related Commands

delete

22.23 copy startup-config

1 Command Purpose

Use this command to copy startup-config to tftp server or dest file.

2 Command Syntax

copy startup-config ( mgmt-if | ) ( STRING | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0.9</td>
<td></td>
<td>374</td>
</tr>
</tbody>
</table>
### Table

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt-if</td>
<td>Need to connect to the URL via management interface</td>
</tr>
<tr>
<td>STRING</td>
<td>Copy to URL and local file name</td>
</tr>
</tbody>
</table>

### 3 Command Mode

Privileged EXEC

### 4 Default

None

### 5 Usage

None

### 6 Examples

This is a sample output from the command displaying how to copy startup-config to tftp server:

```plaintext
Switch# copy startup-config mgmt-if tftp://10.10.38.160/
TFTP server [10.10.38.160]
Name of the TFTP file to access [ ] startup-config
Send file to tftp://10.10.38.160/startup-config
.
Sent 2337 bytes in 0.0 seconds
```

### 7 Related Commands

delete

22.24  

### copy mgmt-if

1 Command Purpose

Use this command to copy file from tftp server to local.
2 Command Syntax

```plaintext
copy mgmt-if SRC_STRING DST_STRING
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRC_STRING</td>
<td>Copy from URL</td>
<td>-</td>
</tr>
<tr>
<td>DST_STRING</td>
<td>Copy to local file</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to copy file from tftp server to local.

6 Examples

This is a sample output from the command displaying how to copy file from tftp server to local:

```
Switch# copy mgmt-if tftp://10.10.38.160 flash:/boot

TFTP server [10.10.38.160]
Name of the TFTP file to access [] collections.py
Download from URL to temporary file.
Get file from tftp://10.10.38.160/collections.py
.
Received 25403 bytes in 0.2 seconds
Copy the temporary file to its destination.
.
File system synchronization. Please waiting...
25403 bytes in 0.1 seconds, 248 kbytes/second
```

7 Related Commands

delete
22.25  copy

1  Command Purpose

Use this command to copy file from local file to tftp server or local.

2  Command Syntax

copy SRC_STRING mgmt-if DST_STRING

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRC_STRING</td>
<td>Copy from URL</td>
<td>-</td>
</tr>
<tr>
<td>DST_STRING</td>
<td>Copy to local file</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Privileged EXEC

4  Default

None

5  Usage

None

6  Examples

This is a sample output from the command displaying how to copy file from local file to tftp server:

```
Switch# copy flash:/startup-config.conf mgmt-if tftp://10.10.38.160
TFTP server [10.10.38.160]
Name of the TFTP file to access [] startup-config.conf
Send file to tftp://10.10.38.160/startup-config.conf
.
Sent 2177 bytes in 0.1 seconds
```
7 Related Commands

delete

22.26 more

1 Command Purpose

To display the contents of a file, use the more command in EXEC mode.

2 Command Syntax

more STRING.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRING</td>
<td>Text file name</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

The system can only display a file in ASCII format.

6 Examples

The following partial sample output displays the configuration file named startup-config in flash:

```
Switch# more flash:/startup-config.conf
```
Related Commands

dir

22.27 delete

1 Command Purpose

To delete a file on the flash, use the delete command in Privileged EXEC mode.

2 Command Syntax

delete STRING.

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

If you attempt to delete the configuration file or image, the system prompts you to confirm the deletion.

6 Examples

The following example deletes the file named test from the flash:

Switch# delete flash:/test
Are you sure to delete flash:/test? [no]y
## Related Commands

*copy*

## 22.28 rename

### 1 Command Purpose

To rename a file in a Class C Flash file system or udisk device, use the rename command in EXEC mode.

### 2 Command Syntax

rename *OLD_STRING* *NEW_STRING*

### 3 Command Mode

Privileged EXEC

### 4 Default

None

### 5 Usage

This command is valid only for local file systems.

### 6 Examples

In the following example, the file named `startup-config.conf-bak` is renamed `startup-config.conf-bak1`:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLD_STRING</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>NEW_STRING</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>
Switch# rename flash:/startup-config.conf-bak flash:/startup-config.conf-bak1
Are you sure to rename flash:/startup-config.conf-bak ? [confirm]y

File system synchronization. Please waiting...
1061 bytes in 0.1 seconds, 10 kbytes/second

7 Related Commands

ls

22.29 source

1 Command Purpose

Read and execute commands from filename in the shell environment.

2 Command Syntax

source STRING

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRING</td>
<td>Configuration file</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following is show how to source commands from a file:
Switch# source flash:/bash_shutdown.txt
Switch# configure terminal

Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# interface range eth-0-5 - 7
Switch(config-if-range)# shutdown
Switch(config-if-range)# end
Switch#

7 Related Commands

None

22.30 system min-frame check

1 Command Purpose

Use this command enable system min frame check, system min frame size is 64 bytes.

2 Command Syntax

system min-frame check enable

no system min-frame check enable

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>enable system min frame check</td>
<td></td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

enable

5 Usage

None
6 Examples

The following example shows how to enable system min frame check:

```
Switch(config)# system min-frame check enable
```

The following example shows how to disable system min frame check:

```
Switch(config)# no system min-frame check enable
```

7 Related Commands

None

22.31 banner

1 Command Purpose

Use this command to define a banner

2 Command Syntax

```
banner ( exec | login ) STRING
```

```
no banner ( exec | login )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>exec</td>
<td>exec banner</td>
<td>-</td>
</tr>
<tr>
<td>login</td>
<td>login banner</td>
<td>-</td>
</tr>
<tr>
<td>STRING</td>
<td>banner text information</td>
<td>c banner-text c, where ‘c’ is a delimiting character, only allow ‘0-9A-Za-z,@._-’</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default

None

5 Usage

None

6 Examples

The following example shows how to define a exec banner:

```
Switch(config)# banner exec @no_delete_configuration@
```

7 Related Commands

None

22.32 do

1 Command Purpose

Use this command to execute the commands in EXEC mode

2 Command Syntax

```
do COMMAND_STRING
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMAND_STRING</td>
<td>The string of the command</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

All Configuration Mode
4 Default

None

5 Usage

None

6 Examples

The following example shows how to execute the do command:

```
Switch# configure terminal
Switch(config)# do show interface eth-0-1
```

```
Interface eth-0-1
  Interface current state: DOWN
  Hardware is Port, address is 001e.080b.e6c2
  Bandwidth 1000000 kbits
  Index 1, Metric 1
  Speed - auto, Duplex - auto, Metadata - Disable, Media type is UNKNOWN
  Link type is autonegotiation
  Admin input flow-control is off, output flow-control is off
  Oper input flow-control is off, output flow-control is off
  The Maximum Frame Size is 12800 bytes
    5 minute input rate 0 bits/sec, 0 packets/sec
    5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes
    Received 0 unicast, 0 broadcast, 0 multicast
    0 runts, 0 giants, 0 input errors, 0 CRC
    0 frame, 0 overrun, 0 pause input
    0 packets output, 0 bytes
    Transmitted 0 unicast, 0 broadcast, 0 multicast
    0 underruns, 0 output errors, 0 pause output
```

7 Related Commands

None
23.1 show version

1 Command Purpose

To display the version information of the hardware and firmware, use the show version command in EXEC mode.

2 Command Syntax

show version

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

This command can display the version information of the hardware and firmware.

6 Examples

This example shows how to display version information of the hardware and firmware:

```
Switch# show version
i-Ware Software, Version 1.10, ESS 6601 01
Vendor Information
SecPath FW uptime is 0 weeks, 1 day, 1 hours, 16 minutes
Boot image: flash:/boot/SecPathTAP2000S-IMW110-E6601.BIN
Boot image version: 1.10, ESS 6601 01
Next running image : flash:/boot/SecPathTAP2000S-IMW110-E6601.BIN
```
7 Related Commands

None

23.2 show stm prefer

1 Command Purpose

Use the show stm prefer privileged EXEC command to display information about the profiles that can be used to maximize system resources for a particular feature.

2 Command Syntax

show stm prefer ( current | next | default )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>current</td>
<td>Current profile information</td>
<td>-</td>
</tr>
<tr>
<td>next</td>
<td>Next profile information</td>
<td>-</td>
</tr>
<tr>
<td>default</td>
<td>Balance on all kinds of tables size</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

The numbers displayed for each profile represent an approximate maximum number for each feature resource. Use this command to show the default balance on all kinds of tables size.

6 Examples

This is an example of output from the show stm prefer current command:

```
Switch# show stm prefer current

number of tap group : 1/512
number of tap truncation : 0/4
number of link aggregation (static) : 0/31
number of Flow features:
  Flow entry ingress entries : 0/1024
  Flow entry egress entries : 0/255
  System Flow configure : 2/4096
  System Flow entry configure : 0/8192
  System L4 Port Range entries : 0/7
```

7 Related Commands

stm prefer

23.3 show environment

1 Command Purpose

Use this command to show the hardware environment information.

2 Command Syntax

show environment

3 Command Mode

Privileged EXEC

4 Default

None
5 Usage

This command only can show the hardware environment information.

6 Examples

This example shows how to display hardware environment information:

```
Switch# show environment
Fan tray status:
Index | Status | SpeedRate | Mode
-----+--------+-----------+-----
1-1   | OK     | 60%       | AUTO
1-2   | OK     | 60%       | AUTO
1-3   | OK     | 60%       | AUTO
Power status:
Index   | Status  | Power      | Type | Alert
-------+--------+------------+------+------
1       | PRESENT| OK         | AC   | NO   
2       | ABSENT | -          | -    | -    
Sensor status (Degree Centigrade):
Index   | Temperature | Lower_alarm | Upper_alarm | Critical | Position
-------+-------------+-------------+-------------+----------+--------
1       | 56          | 5           | 65          | 80       | AROUND_CPU
```

7 Related Commands

temperature

23.4 show clock

1 Command Purpose

Use this command to show the clock information.

2 Command Syntax

show clock

3 Command Mode

Privileged EXEC
4  Default

None

5  Usage

The show clock command can get the clock information.

6  Examples

This example shows how to display clock information:

```
Switch# show clock
05:29:55 Beijing Wed Sep 27 2017
Time Zone(Beijing) : UTC+08:00:00
```

7  Related Commands

clock set datetime

clock set timezone

23.5  show transceiver

1  Command Purpose

Use this command to show the transceiver information.

2  Command Syntax

```
show transceiver ( IF_NAME_E | ) ( detail | )
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME_E</td>
<td>Ethernet interface name</td>
<td>-</td>
</tr>
<tr>
<td>detail</td>
<td>Show detailed information</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to show the interface transceiver information, or the transceiver detail information.

6 Examples

This example shows how to display transceiver information:

```
Switch# show transceiver detail
Port eth-0-17 transceiver info:
Transceiver Type: 1000BASE-T_SFP
Transceiver Vendor Name : INNOLIGHT
Transceiver PN : TC-BORJZ-N00
Transceiver S/N : IN912S01025C
Transceiver Output Wavelength: N/A
Supported Link Type and Length:
   Link Length for copper: 100 m
Digital diagnostic is not implemented.
Port eth-0-21 transceiver info:
Transceiver Type: 1000BASE-SX
Transceiver Vendor Name : FINISAR CORP.
Transceiver PN : FTLF8519P3BTL
Transceiver S/N : PPB2DLL
Transceiver Output Wavelength: 850 nm
Supported Link Type and Length:
   Link Length for 850 nm fiber: 300 m
   Link Length for 50/125um multi-mode fiber: 150 m
```

Transceiver is internally calibrated.

mA: milliamperes, dBm: decibels (milliwatts), NA or N/A: not applicable.
The threshold values are calibrated.

<table>
<thead>
<tr>
<th>Port</th>
<th>Temperature (Celsius)</th>
<th>High Alarm (Celsius)</th>
<th>High Warn (Celsius)</th>
<th>Low Warn (Celsius)</th>
<th>Low Alarm (Celsius)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-21</td>
<td>32.92</td>
<td>110.00</td>
<td>93.00</td>
<td>-30.00</td>
<td>-40.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Voltage (Volts)</th>
<th>High Alarm (Volts)</th>
<th>High Warn (Volts)</th>
<th>Low Warn (Volts)</th>
<th>Low Alarm (Volts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-21</td>
<td>3.29</td>
<td>3.60</td>
<td>3.50</td>
<td>3.10</td>
<td>3.00</td>
</tr>
</tbody>
</table>

High Alarm High Warn Low Warn Low Alarm
## Related Commands

None

### 23.6 show system summary

#### 1 Command Purpose

Use this command to show the summary of system information.

#### 2 Command Syntax

show system summary

#### 3 Command Mode

Privileged EXEC

#### 4 Default

None

#### 5 Usage

This command to show the summary of system information.

---

<table>
<thead>
<tr>
<th>Port</th>
<th>Current (milliamperes)</th>
<th>Threshold (mA)</th>
<th>Threshold (mA)</th>
<th>Threshold (mA)</th>
<th>Threshold (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-21</td>
<td>6.53</td>
<td>13.00</td>
<td>12.50</td>
<td>2.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Optical Transmit Power (dBm)</th>
<th>High Alarm Threshold (dBm)</th>
<th>High Warn Threshold (dBm)</th>
<th>Low Warn Threshold (dBm)</th>
<th>Low Alarm Threshold (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-21</td>
<td>-5.08</td>
<td>0.00</td>
<td>-3.00</td>
<td>-9.50</td>
<td>-13.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Optical Receive Power (dBm)</th>
<th>High Alarm Threshold (dBm)</th>
<th>High Warn Threshold (dBm)</th>
<th>Low Warn Threshold (dBm)</th>
<th>Low Alarm Threshold (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-21</td>
<td>-6.68</td>
<td>0.50</td>
<td>-1.00</td>
<td>-16.99</td>
<td>-21.02</td>
</tr>
</tbody>
</table>
6 Examples

This example shows how to display the summary of system information:

```
Switch# show system summary

######### Version Table #########
i-Ware Software, Version 1.10, ESS 6601 01
Vendor Information
SecPath FW uptime is 0 weeks, 0 day, 0 hours, 52 minutes
Boot image: flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.03
Next running image : flash:/boot/SecPathTAP2000A-IMW110-E6601.BIN.03

SLOT 1
Hardware Type : switch
SDRAM size : 1024M
Flash size : 2048M
Hardware Version : 2.0
EPLD Version : 1.2
BootRom Version : 8.1.3
System serial number : E142GD16107A
Management IP address: 10.10.39.104/23
Gateway: 10.10.39.254

Route MAC is : 001e.080b.e6c2

######### Management IP Table #########

Line    Host(s)   Idle          Location   User
-------------+------------+----------------+------------+
 130 vty 0  idle    00:51:05      Local
 131 vty 1  idle    00:50:30      10.10.25.25
*132 vty 2  idle    00:00:00      10.10.25.25

######### Memory Summary Table #########
Total memory : 940428 KB
Used memory : 260220 KB
Freed memory : 680208 KB
Buffer memory : 0 KB
Cached memory : 125840 KB
Memory utilization: 27.67%
```

7 Related Commands

None

23.7 show reboot-info

1 Command Purpose

Use this command to show reboot information.

2 Command Syntax

```
show reboot-info
```
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to show reboot information.

6 Examples

The following example shows how to display reboot information:

```
Switch# show reboot-info
Times  Reboot Type  Reboot Time
--------+--------------+-------------------
   1    MANUAL     2017-06-27 06:46:19
   2    MANUAL     2017-06-28 02:12:28
   3    MANUAL     2017-06-30 08:34:57
   4    MANUAL     2017-07-05 09:45:01
   5    MANUAL     2017-07-13 08:12:08
   6    POWER      2017-07-23 09:47:32
   7    POWER      2017-07-30 05:47:48
   8    POWER      2017-07-30 08:37:03
   9    POWER      2017-08-03 02:14:48
  10   MANUAL     2017-08-05 03:41:58
  11   MANUAL     2017-08-05 06:30:18
  12   Unknown    2017-08-05 16:48:30
  13   BHMDG      2017-08-10 03:19:47
  14   POWER      2017-08-10 03:27:31
  15   MANUAL     2017-08-10 03:34:27
  16   Unknown    2017-08-11 06:48:21
  17   Unknown    2017-08-11 06:48:21
  18   MANUAL     2017-08-15 02:13:55
  19   POWER      2017-08-15 02:22:21
  20   MANUAL     2017-08-15 02:26:27
  21   MANUAL     2017-08-15 02:29:39
  22   MANUAL     2017-08-15 02:32:37
  23   MANUAL     2017-08-15 02:35:11
  24   POWER      2017-08-15 07:51:14
  25   MANUAL     2017-08-15 08:19:48
  26   Unknown    2017-08-15 08:40:01
  27   Unknown    2017-08-15 08:44:19
  28   MANUAL     2017-08-16 03:43:38
  29   MANUAL     2017-08-17 07:00:46
  30   MANUAL     2017-08-18 07:23:43
  31   Power      2017-09-12 02:34:24
  32   Unknown    2017-09-12 05:56:16
  33   Power      2017-09-12 07:17:19
  34   Power      2017-09-12 07:22:47
  35   Abnormal   2017-09-12 07:31:32
  36   Manual     2017-09-12 07:44:43
  37   Manual     2017-09-12 07:50:12
```
7 Related Commands

clear reboot-info

23.8 clear reboot-info

1 Command Purpose

Use this command to clear reboot information.

2 Command Syntax

clear reboot-info

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

The clear reboot-info command can clear reboot information.

6 Examples

The following example shows how to clear reboot information:
Related Commands

show reboot-info

23.9 set device id-led

Command Purpose

Use this command to set the device indicate led force on or force off.

Command Syntax

set device id-led ( on | off )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>on</td>
<td>Turn on the led</td>
<td>-</td>
</tr>
<tr>
<td>off</td>
<td>Turn off the led</td>
<td>-</td>
</tr>
</tbody>
</table>

Command Mode

Privileged EXEC

Default

None

Usage

The command can set device indicate led force on or force off.

Examples

The following example shows how to set device indicate led force on:

Switch# set device id-led on
Related Commands

type device id-led

23.10 show device id-led

1 Command Purpose

Use this command to show device indicate led information.

2 Command Syntax

show device id-led

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

Use this command to show device indicate led information.

6 Examples

The following example shows the device indicates led information:

```
Switch# show device id-led
Indicate led is forced on
```

7 Related Commands

set device id-led
23.11  show schedule reboot

1  Command Purpose
Use this command to show schedule reboot information.

2  Command Syntax
show schedule reboot

3  Command Mode
Privileged EXEC

4  Default
None

5  Usage
Use this command to show schedule reboot information.

6  Examples
The following example shows schedule reboot information:

    Switch# show schedule reboot
    Current time is : 2017-09-26 22:14:49
    Will reboot at : 2017-09-26 23:48:44

7  Related Commands
schedule reboot delay
    schedule reboot at
23.12  stm prefer

1  Command Purpose

Use the `stm prefer` Global Configuration command to configure the profile used in Switch Table Management (STM) resource allocation. You can use profile to allocate system memory to best support the features being used in your application. Use profile to approximate the maximum number of unicast MAC addresses, quality of service (QoS) access control entries (ACEs) and unicast routes.

2  Command Syntax

`stm prefer default`

3  Command Mode

Global Configuration

4  Default

System use the default profile when first boot up, this profile balance all the features.

5  Usage

Users must reload the switch for the configuration to take effect.

6  Examples

This example shows how to configure the default profile on the switch:

```
Switch(config)# stm prefer default
%
Changes to STM profile have been stored, but cannot take effect until the next
reload. Use 'show stm prefer current' to see what STM profile is currently active.
```

7  Related Commands

show stm prefer current

show stm prefer next
23.13 temperature

1 Command Purpose

Use this command to specify the system temperature monitor threshold.

Use the no form of this command to restore the default value.

2 Command Syntax

temperature TEMP_LOW TEMP_HIGH TEMP_CRIT

no temperature

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMP_LOW</td>
<td>Low alarm temperature degree Celsius</td>
<td>range -15 to 50</td>
</tr>
<tr>
<td>TEMP_HIGH</td>
<td>High alarm temperature degree Celsius</td>
<td>range 50 to 85</td>
</tr>
<tr>
<td>TEMP_CRIT</td>
<td>Critical temperature degree Celsius</td>
<td>range 55 to 90</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

The default threshold is low temperature 5, high temperature 65, and critical temperature 80.

5 Usage

The unit for temperature is centigrade. The critical temperature must higher than high temperature 5 Celsius degrees. The high temperature must higher than low temperature 5 Celsius degrees.
6 Examples

This example shows how to specify the temperature thresholds:

```
Switch(config)# temperature 5 70 80
```

This example shows how to specify the temperature thresholds to default value:

```
Switch(config)# no temperature
```

7 Related Commands

show environment

23.14 clock set datetime

1 Command Purpose

Use this command to set system current date and time on the Switch.

2 Command Syntax

clock set datetime ABS_TIME CLOCK_MONTH ABS_DAY ABS_YEAR

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS_TIME</td>
<td>Current time</td>
<td>-</td>
</tr>
<tr>
<td>CLOCK_MONTH</td>
<td>Month of the year</td>
<td>1-12</td>
</tr>
<tr>
<td>ABS_DAY</td>
<td>Day of the month</td>
<td>1-31</td>
</tr>
<tr>
<td>ABS_YEAR</td>
<td>Year</td>
<td>2000-2037</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default

The default time is based from UTC.

5 Usage

If no other source of time is available, you can manually configure the time and date after the system is restarted. The time remains accurate until the next system restart. We recommend that you use manual configuration only as a last resort. If you have an outside source to which the switch can synchronize, you do not need to manually set the system clock.

6 Examples

This example shows how to manually set the system clock:

```
Switch(config)# clock set datetime 22:43:23 9 26 2017
```

7 Related Commands

show clock

23.15 clock set timezone

1 Command Purpose

Use this command to set timezone.

Use the no form of this command to restore the default value.

2 Command Syntax

clock set timezone Z_NAME ( add | minus ) TZ_HOURS ( TZ_MIN ( TZ_SEC ) )

no clock set timezone

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z_NAME</td>
<td></td>
<td></td>
</tr>
<tr>
<td>add</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TZ_HOURS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TZ_MIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TZ_SEC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### CLI USER GUIDE

PacketMAX Advanced Features | AF1G52AC

<table>
<thead>
<tr>
<th>Z_NAME</th>
<th>Zone name,</th>
<th>Valid characters are among “A-Za-z_”, must be less than 32 characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>add</td>
<td>Specify the time offset is positive from UTC -</td>
<td></td>
</tr>
<tr>
<td>minus</td>
<td>Specify the time offset is negative from UTC -</td>
<td></td>
</tr>
<tr>
<td>TZ_HOURS</td>
<td>Hours offset from UTC</td>
<td>0-23</td>
</tr>
<tr>
<td>TZ_MIN</td>
<td>Minutes offset from UTC</td>
<td>0-59</td>
</tr>
<tr>
<td>TZ_SEC</td>
<td>Seconds offset from UTC</td>
<td>0-59</td>
</tr>
</tbody>
</table>

### 3 Command Mode

**Global Configuration**

### 4 Default

None

### 5 Usage

None

### 6 Examples

This example shows how to set the clock timezone:

```
Switch(config)# clock set timezone Beijing add 8
```

This example shows how to recover the clock timezone:

```
Switch(config)# no clock set timezone
```
23.16 update bootrom

1 Command Purpose

Use this command to upgrade bootrom image.

2 Command Syntax

update bootrom STRING

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRING</td>
<td>Source file direction</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

This command can upgrade bootrom image.

6 Examples

This example shows how to update bootrom image:

Switch(config)# update bootrom flash:/boot/bootrom.bin
7 Related Commands

reboot

23.17 schedule reboot at

1 Command Purpose

Use this command to set schedule reboot at a time.

Use the no form of this command to cancel the schedule.

2 Command Syntax

schedule reboot at HOUR_MIN ( YEAR_MON_DAY | )

no schedule reboot

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUR_MIN</td>
<td>Specify the hour and minute</td>
<td>-</td>
</tr>
<tr>
<td>YEAR_MON_DAY</td>
<td>Specify the date for current year, year range is [2000, 2037]</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None
5 Usage

The reboot time could select time with format HH:MM, and optional date with format YYYY/MM/DD or MM/DD/YYYY or MM/DD.

6 Examples

The following example shows how to set schedule reboot at a time:

```
Switch(config)# schedule reboot at 10:20 2016/10/2
```

7 Related Commands

show schedule reboot

23.18 schedule reboot delay

1 Command Purpose

Use this command to set schedule reboot after a time.

2 Command Syntax

schedule reboot delay \(DELAY\_TIME\)

```
no schedule reboot
```

3 Command Mode

Global Configuration

4 Default

None
5 Usage

The reboot delay time could be formatted as HH:MM, or minutes in the range of [1,720].

6 Examples

The following example shows how to set schedule reboot after a time:

```
Switch(config)# schedule reboot delay 100
```

7 Related Commands

show schedule reboot

23.19 telnet

1 Command Purpose

Use this command to remote access to other devices.

2 Command Syntax

telnet mgmt-if NAME_STRING (TCP_PORT | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt-if</td>
<td>Establish a remote connection through the management port</td>
<td>-</td>
</tr>
<tr>
<td>NAME_STRING</td>
<td>IP address or hostname of a remote system</td>
<td>-</td>
</tr>
<tr>
<td>TCP_PORT</td>
<td>Specify the tcp port number, the default number is 23</td>
<td>1-65535</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

The command is used to establish a connection to other devices through the management port. The default tcp port is 23.

6 Examples

The following example shows how to remote access to other devices:

Switch# telnet mgmt-if 10.10.39.101

7 Related Commands

None
24 Hash load-balance Commands

24.1 hash field port-channel

1 Command Purpose

Use this command to set the hash field on hash field port-channel mode.

2 Command Syntax

hash field port-channel

3 Command Mode

Global Configuration

4 Default

None

5 Usage

None

6 Examples

The following example shows how to enter the hash field port-channel mode.:

Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel) #

7 Related Commands

show hash-field port-channel
24.2  l2

1  Command Purpose

Use this command to set l2 packet hash field; use the no command to set the l2 packet field to default.

2  Command Syntax

l2 ( macda | macsa | vlan | eth-type | src-interface )

no l2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>macda</td>
<td>MAC Destination Address</td>
<td>-</td>
</tr>
<tr>
<td>macsa</td>
<td>MAC Source Address</td>
<td>-</td>
</tr>
<tr>
<td>vlan</td>
<td>Vlan</td>
<td>-</td>
</tr>
<tr>
<td>eth-type</td>
<td>Ethernet Type</td>
<td>-</td>
</tr>
<tr>
<td>src-interface</td>
<td>Source Interface</td>
<td>-</td>
</tr>
</tbody>
</table>

3  Command Mode

Config-hash-field

4  Default

l2 macsa macda

5  Usage

None
6 Examples

The following example shows how to select macsa for l2 packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# 12 macsa
```

The following example shows how to select default l2 packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no 12
```

7 Related Commands

```
show hash-field port-channel
```

24.3 ip

1 Command Purpose

Use this command to set ip packet hash field; use the no command to set the ip packet field to default.

2 Command Syntax

```
ip ( ipda | ipsa | ip-protocol | sourceport | destport | src-interface )

no ip
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipda</td>
<td>IP Destination Address</td>
<td>-</td>
</tr>
<tr>
<td>ipsa</td>
<td>IP Source Address</td>
<td>-</td>
</tr>
<tr>
<td>ip-protocol</td>
<td>IP Header protocol</td>
<td>-</td>
</tr>
<tr>
<td>sourceport</td>
<td>Layer4 Source Port</td>
<td>-</td>
</tr>
<tr>
<td>destport</td>
<td>Layer4 Destination Port</td>
<td>-</td>
</tr>
<tr>
<td>src-interface</td>
<td>Source Interface</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

Config-hash-field

4 Default

ip ipsa ipda sourceport destport ip-protocol

5 Usage

None

6 Examples

The following example shows how to select ipsa for ip packet load balance in port-channel:

```plaintext
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# ip ipsa
```

The following example shows how to select default ip packet load balance in port-channel:

```plaintext
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no ip
```

7 Related Commands

show hash-field port-channel

24.4 ipv6

1 Command Purpose

Use this command to set ipv6 packet hash field; use the no command to set the ipv6 field to default.

2 Command Syntax

ipv6 ( ipda | ipsa | ip-protocol | sourceport | destport | src-interface )

    no ipv6
### 3 Command Mode

**Config-hash-field**

### 4 Default

`ipv6 ipsa ipda sourceport destport ip-protocol`

### 5 Usage

Only when the system is in ipv6 mode, the ipv6 packet hash field can work normally.

### 6 Examples

The following example shows how to select ipsa for ipv6 packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# ipv6 ipsa
```

The following example shows how to select default ipv6 packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no ipv6
```

### 7 Related Commands

`show hash-field port-channel`
24.5  vxlan

1  Command Purpose

Use this command to set vxlan packet hash field.

To return the configuration to default value use the no form of this command.

2  Command Syntax

vxlan { vni | src-interface }

vxlan ( { vni | src-interface } | ) outer { ipsa | ipda | sourceport | destport | vlan }

vxlan ( { vni | src-interface } | ) inner-layer2 { macsa | macda | eth-type }

vxlan ( { vni | src-interface } | ) inner-layer3 { ipsa | ipda | sourceport | destport | ip-protocol }

no vxlan

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>vni</td>
<td>VXLAN VNI</td>
<td>-</td>
</tr>
<tr>
<td>src-interface</td>
<td>Source Interface</td>
<td>-</td>
</tr>
<tr>
<td>outer ipsa</td>
<td>Outer header’s IP Source Address</td>
<td>-</td>
</tr>
<tr>
<td>outer ipda</td>
<td>Outer header’s IP Destination Address</td>
<td>-</td>
</tr>
<tr>
<td>outer sourceport</td>
<td>Outer header’s Layer4 Source Port</td>
<td>-</td>
</tr>
<tr>
<td>outer destport</td>
<td>Outer header’s Layer4 Destination Port</td>
<td>-</td>
</tr>
<tr>
<td>outer vlan</td>
<td>Outer header’s Vlan ID</td>
<td>-</td>
</tr>
</tbody>
</table>
### Command Mode

Config-hash-field

### Default

vxlan vni outer ipsa ipda sourceport

### Usage

Outer configuration and inner configuration cannot take effect at the same time.
6 Examples

The following example shows how to select outer ipsa and vni for vxlan packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# vxlan vni outer ipda
```

The following example shows how to select default vxlan packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no vxlan
```

7 Related Commands

show hash-field port-channel

24.6 nvgre

1 Command Purpose

Use this command to set nvgre packet hash field.

To return the configuration to default value use the no form of this command.

2 Command Syntax

```
nvgre { vsid | src-interface }
nvgre ( { vsid | src-interface } | ) outer { ipsa | ipda | gre-protocol }
nvgre ( { vsid | src-interface } | ) inner-layer2 { macsa | macda | eth-type }
nvgre ( { vsid | src-interface } | ) inner-layer3 { ipsa | ipda | sourceport | destport | ip-protocol }
no nvgre
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>vsid</td>
<td>NVGRE VSID</td>
<td>-</td>
</tr>
</tbody>
</table>
### 3.0.9 Command Mode

**Config-hash-field**

<table>
<thead>
<tr>
<th>src-interface</th>
<th>Source Interface</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>outer ipsa</td>
<td>Outer header’s IP Source Address</td>
<td>-</td>
</tr>
<tr>
<td>outer ipda</td>
<td>Outer header’s IP Destination Address</td>
<td>-</td>
</tr>
<tr>
<td>outer gre-protocol</td>
<td>Outer header’s GRE Protocol</td>
<td>-</td>
</tr>
<tr>
<td>inner macsa</td>
<td>Inner header’s MAC Source Address</td>
<td>-</td>
</tr>
<tr>
<td>inner macda</td>
<td>Inner header’s MAC Destination Address</td>
<td>-</td>
</tr>
<tr>
<td>inner eth-type</td>
<td>Inner header’s Ethernet Type</td>
<td>-</td>
</tr>
<tr>
<td>inner ipsa</td>
<td>Inner header’s IP Source Address</td>
<td>-</td>
</tr>
<tr>
<td>inner ipda</td>
<td>Inner header’s IP Destination Address</td>
<td>-</td>
</tr>
<tr>
<td>inner sourceport</td>
<td>Inner header’s Layer4 Source Port</td>
<td>-</td>
</tr>
<tr>
<td>inner destport</td>
<td>Inner header’s Layer4 Destination Port</td>
<td>-</td>
</tr>
<tr>
<td>inner ip-protocol</td>
<td>Inner header’s IP Header protocol</td>
<td>-</td>
</tr>
</tbody>
</table>
4 Default

nvgre vsid outer ipsa ipda

5 Usage

Outer configuration and inner configuration cannot take effect at the same time.

6 Examples

The following example shows how to select outer ipsa and vsid for nvgre packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# nvgre vsid outer ipda
```

The following example shows how to select default nvgre packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no nvgre
```

7 Related Commands

show hash-field port-channel

24.7 mpls

1 Command Purpose

Use this command to set mpls packet hash field.

To return the configuration to default value use the no form of this command.

2 Command Syntax

```
mpls { top-label | 2nd-label | 3rd-label | src-interface }

no mpls
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mpls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>top-label</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd-label</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd-label</td>
<td></td>
<td></td>
</tr>
<tr>
<td>src-interface</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Command Mode

**Config-hash-field**

### Default

**mpls top-label 2nd-label**

### Usage

None

### Examples

The following example shows how to select top-label for mpls packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# mpls top-label
```

The following example shows how to select default mpls packet load balance in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no mpls
```

### Related Commands

`show hash-field port-channel`
24.8 disable control

1 Command Purpose

Use this command to force ip packet, ipv6 packet or mpls packet to follow l2 hash configuration.

To return the configuration to default value use the no form of this command.

2 Command Syntax

ip disable

no ip disable

ipv6 disable

no ipv6 disable

mpls disable

no mpls disable

3 Command Mode

Config-hash-field

4 Default

no ip disable

no ipv6 disable

no mpls disable

5 Usage

None

6 Examples

The following example shows how to not select ipv6 packet field to hash in port-channel:
The following example shows how to select ipv6 packet field to hash in port-channel:

```plaintext
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# ipv6 disable
```

7 Related Commands

show hash-field port-channel

24.9 hash arithmetic

1 Command Purpose

Use this command to set hash arithmetic.

To return the configuration to default value use the no form of this command.

2 Command Syntax

hash-arithmetic first ( crc | xor ) second ( crc | xor )

no hash-arithmetic

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>crc</td>
<td>Cyclical redundancy check arithmetic</td>
<td>-</td>
</tr>
<tr>
<td>xor</td>
<td>Exclusive or arithmetic</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Config-hash-field

4 Default

hash-arithmetic first xor second crc
5 Usage

None

6 Examples

The following example shows how to set first hash arithmetic and second hash arithmetic in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# hash-arithmetic first crc second xor
```

The following example shows how to set default first hash arithmetic and second hash arithmetic in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no hash-arithmetic
```

7 Related Commands

show hash-field port-channel

24.10 hash symmetry

1 Command Purpose

Use this command to enable hash symmetry function.

To return the configuration to default value use the no form of this command.

2 Command Syntax

mode symmetry

no mode symmetry

3 Command Mode

Config-hash-field
4 Default

no mode symmetry

5 Usage

None

6 Examples

The following example shows how to set hash symmetry in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# mode symmetry
```

The following example shows how to set hash symmetry to default in port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no mode symmetry
```

7 Related Commands

show hash-field port-channel

24.11 description

1 Command Purpose

Use this command to configure the description for hash field; use the no command to delete the description.

2 Command Syntax

description NAME

```
3 Command Mode

Config-hash-field

4 Default

None

5 Usage

None

6 Examples

The following example shows how to set description for port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# description linkagg
```

The following example shows how to delete description for port-channel:

```
Switch(config)# hash-field port-channel
Switch(config-hash-field-port-channel)# no description
```

7 Related Commands

show hash-field port-channel

24.12 show hash-filed port-channel

1 Command Purpose

Use this command to display the configurations and statistics on hash field port-channel.
2 Command Syntax

show hash-field port-channel

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

The following example shows how to display the configurations and statistics on the hash field port-channel:

Switch# show hash-field port-channel

<table>
<thead>
<tr>
<th>Option</th>
<th>Control type</th>
</tr>
</thead>
<tbody>
<tr>
<td>hash-arithmetic first</td>
<td>xor</td>
</tr>
<tr>
<td>hash-arithmetic second</td>
<td>crc</td>
</tr>
<tr>
<td>hash symmetry</td>
<td>enable</td>
</tr>
<tr>
<td>ip</td>
<td>enable</td>
</tr>
<tr>
<td>ipv6</td>
<td>enable</td>
</tr>
<tr>
<td>mpls</td>
<td>enable</td>
</tr>
</tbody>
</table>

hash field select Packet HashField

<table>
<thead>
<tr>
<th>Packet</th>
<th>HashField</th>
</tr>
</thead>
<tbody>
<tr>
<td>l2:</td>
<td>macsa</td>
</tr>
<tr>
<td></td>
<td>macda</td>
</tr>
<tr>
<td>ip:</td>
<td>ipsa</td>
</tr>
<tr>
<td></td>
<td>14-sourceport</td>
</tr>
<tr>
<td></td>
<td>14-destport</td>
</tr>
<tr>
<td></td>
<td>ip-protocol</td>
</tr>
<tr>
<td>ipv6:</td>
<td>ipsa</td>
</tr>
<tr>
<td></td>
<td>14-sourceport</td>
</tr>
<tr>
<td></td>
<td>14-destport</td>
</tr>
<tr>
<td></td>
<td>ip-protocol</td>
</tr>
<tr>
<td>gre:</td>
<td>ipsa</td>
</tr>
<tr>
<td></td>
<td>gre-key</td>
</tr>
<tr>
<td></td>
<td>ipda</td>
</tr>
<tr>
<td>vxlan:</td>
<td>vni</td>
</tr>
<tr>
<td></td>
<td>outer-ipda</td>
</tr>
<tr>
<td></td>
<td>outer-14-sourceport</td>
</tr>
<tr>
<td></td>
<td>outer-ipsa</td>
</tr>
</tbody>
</table>
### Related Commands

None

<table>
<thead>
<tr>
<th>Command</th>
<th>Parameter 1</th>
<th>Parameter 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>nvgre:</td>
<td>vsid</td>
<td>outer-ipds</td>
</tr>
<tr>
<td></td>
<td>outer-ipss</td>
<td></td>
</tr>
<tr>
<td>mpls:</td>
<td>top-label</td>
<td>2nd-label</td>
</tr>
</tbody>
</table>
25.1 ipfix enable

1 Command Purpose

Use this command to enable ipfix globally.

2 Command Syntax

ipfix enable

3 Command Mode

Global Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to enable ipfix globally:

Switch# configure terminal
Switch(config)# ipfix enable

7 Related Commands

None
25.2 ipfix recorder

1 Command Purpose

Use this command to create a ipfix recorder and enter recorder configure mode. To remove the ipfix recorder, use the no form of this command.

2 Command Syntax

ipfix recorder NAME

no ipfix recorder NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix recorder name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration

4 Default

None

5 Usage

If ipfix recorder has existed, it will enter IPFIX recorder Configuration; if ipfix recorder is new, it will create a recorder and enter IPFIX recorder Configuration; this command should work with the commands of match and collect.

6 Examples

This example shows how to create ipfix recorder recorder1 in global configuration and enter IPFIX recorder Configuration:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)#
```
Switch# configure terminal
Switch(config)# no ipfix recorder recorder1

7 Related Commands

description

match ipv4
match ipv6
match mpls
match transport
collect ttl
collect flow
collect counter

25.3 description

1 Command Purpose

This command used to describe ipfix recorder, use the no form of this command to delete this description.

2 Command Syntax

description DESCRIPTION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>ipfix monitor description</td>
<td>The length of ipfix monitor description should not exceed 64 characters</td>
</tr>
</tbody>
</table>
3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to describe recorder in IPFIX recorder Configuration:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-reorder)# description this is a ipfix recorder
```

This example shows how to delete the description of the recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-reorder)# no description
```

7 Related Commands

None

25.4 match ipv4

1 Command Purpose

This command configures the fields of ipv4 in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

```
match ipv4 ( source | destination ) address ( mask IP_MASK_LEN | )

match ipv4 ( dscp | ecn | ttl)
```
no match ipv4 (source | destination) address

no match ipv4 (dscp | ecn | ttl)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>ipv4 source ipaddress</td>
<td>-</td>
</tr>
<tr>
<td>destination</td>
<td>ipv4 destination ipaddress</td>
<td>-</td>
</tr>
<tr>
<td>dscp</td>
<td>ipv4 dscp value</td>
<td>-</td>
</tr>
<tr>
<td>ecn</td>
<td>ipv4 ecn value</td>
<td>-</td>
</tr>
<tr>
<td>ttl</td>
<td>ipv4 ttl value</td>
<td>-</td>
</tr>
<tr>
<td>IP_MASK_LEN</td>
<td>mask length for ipv4 address</td>
<td>1-32</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX recorder Configuration

4 Default

Default value is 32

5 Usage

None

6 Examples

This example shows how to configure to use ipv4 source address and ipv4 destination address in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match ipv4 source address
```

Switch# configure terminal
7 Related Commands

None

25.5 match ipv6

1 Command Purpose

This command configures the fields of ipv6 in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match ipv6 ( source | destination ) address ( mask IPV6_MASK_LEN | )

no match ipv6 ( source | destination ) address

match ipv6 ( flowlabel | dscp )

no match ipv6 ( flowlabel | dscp )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>ipv6 source ipaddress</td>
<td>-</td>
</tr>
<tr>
<td>destination</td>
<td>ipv4 destination ipaddress</td>
<td>-</td>
</tr>
<tr>
<td>dscp</td>
<td>ipv6 dscp value</td>
<td>-</td>
</tr>
<tr>
<td>flowlabel</td>
<td>ipv6 flowlabel value</td>
<td>-</td>
</tr>
<tr>
<td>IPV6_MASK_LEN</td>
<td>mask length for ipv6 address</td>
<td>range is 1-128 and must be the multiple of 4</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX recorder Configuration
4 Default

Default value is 128

5 Usage

None

6 Examples

This example shows how to configure to use ipv6 source address and ipv6 destination address in ipfix recorder:

```bash
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match ipv6 source address

Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match ipv6 destination address
```

7 Related Commands

None

25.6 match mac

1 Command Purpose

this command configures the fields of mac in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match mac (destination | source) address

```plaintext
no match mac (destination | source) address
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>Source mac address</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to use source mac address in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match mac source address
```

7 Related Commands

None

25.7 match transport

1 Command Purpose

This command configures the fields of transport in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match transport (destination-port | source-port | type)

    no match transport (destination-port | source-port | type)
match transport icmp (opcode | type)

no match transport icmp (opcode | type)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>destination-port</td>
<td>Destination port</td>
<td>-</td>
</tr>
<tr>
<td>source-port</td>
<td>Source port</td>
<td>-</td>
</tr>
<tr>
<td>type</td>
<td>Transport layer type</td>
<td>-</td>
</tr>
<tr>
<td>opcode</td>
<td>Ipmp operated code</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to use source port and destination port of transport in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match transport source-port

Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match transport destination-port
```

7 Related Commands

None
25.8 match vlan

1 Command Purpose

This command configures the fields of vlan in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match vlan (inner | )

no match vlan (inner | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>inner</td>
<td>Inner VLAN</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to use inner vlan in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match vlan inner
```

7 Related Commands

None
25.9 match cos

1 Command Purpose

This command configures the fields of cos in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match cos (inner | )

no match cos (inner | )

3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to use inner cos in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-reoorder)# match cos inner
```

7 Related Commands

None
25.10 match interface (input | output)

1 Command Purpose

This command configures the fields of interface in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match interface (input | output)

no match interface (input | output)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>input</td>
<td>input direction</td>
<td>-</td>
</tr>
<tr>
<td>output</td>
<td>output direction</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure input direction in ipfix recorder:

Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(config-ipfix-recorder)# match interface input
7 Related Commands

None

25.11 match vxlan-vni

1 Command Purpose

This command configures the fields of vxlan-vni in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match vxlan-vni

no match vxlan-vni

3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to use vxlan-vni in ipfix recorder:

Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match vxlan-vni

7 Related Commands

None
25.12  match nvgre-key

1  Command Purpose

This command configures the fields of nvgre-key in ipfix recorder, use the no form of this command to delete this configure.

2  Command Syntax

match nvgre-key

no match nvgre-key

3  Command Mode

IPFIX recorder Configuration

4  Default

None

5  Usage

None

6  Examples

This example shows how to configure to use nvgre-key in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match nvgre-key
```

7  Related Commands

None
25.13 **match transport tcp flags**

1 **Command Purpose**

This command configures the tcp flags fields of packet in ipfix recorder, use the no form of this command to delete this configure.

2 **Command Syntax**

match transport tcp flags ( {ack | cwr | ece | fin | psh | rst | syn | urg} | )

no match transport tcp flags ( {ack | cwr | ece | fin | psh | rst | syn | urg} | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ack</td>
<td>TCP acknowledgement</td>
<td>-</td>
</tr>
<tr>
<td>cwr</td>
<td>TCP congestion window</td>
<td>reduced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>ece</td>
<td>TCP Explicit Notification Congestion echo</td>
<td>-</td>
</tr>
<tr>
<td>fin</td>
<td>TCP finish</td>
<td>-</td>
</tr>
<tr>
<td>psh</td>
<td>TCP push</td>
<td>-</td>
</tr>
<tr>
<td>rst</td>
<td>TCP reset</td>
<td>-</td>
</tr>
<tr>
<td>syn</td>
<td>TCP synchronize</td>
<td>-</td>
</tr>
<tr>
<td>urg</td>
<td>TCP urgent</td>
<td>-</td>
</tr>
</tbody>
</table>

3 **Command Mode**

IPFIX recorder Configuration
4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to use tcp flags:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match transport tcp flags ack
```

7 Related Commands

None

25.14 match packet (drop | non-drop)

1 Command Purpose

This command configures the fields of packet in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

match packet ( drop | non-drop )

no match packet ( drop | non-drop )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>drop</td>
<td>Drop packet</td>
<td>-</td>
</tr>
<tr>
<td>non-drop</td>
<td>Non-drop packet</td>
<td>-</td>
</tr>
</tbody>
</table>
3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to use drop packet:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# match packet drop
```

7 Related Commands

None

25.15 collect counter

1 Command Purpose

this command configures byte number and packet number that needed to be collected in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

```
collect counter ( delta | ) (bytes | packets)

no collect counter ( delta | ) (bytes | packets)
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Command Mode

IPFIX recorder Configuration

4 Default

Without collecting any information

5 Usage

None

6 Examples

This example shows how to configure to collect the number of flow’s byte in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# collect counter bytes
```

7 Related Commands

None

25.16 collect flow

1 Command Purpose

This command configures to collect ipfix flow information in ipfix recorder, use the no form of this command to delete this configure.
2 Command Syntax

collect flow ( drop | destination | fragmentation )

no collect flow ( drop | destination | fragmentation )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>drop</td>
<td>Only collect the dropped flows</td>
<td>-</td>
</tr>
<tr>
<td>destination</td>
<td>Collect destination address of flows</td>
<td>-</td>
</tr>
<tr>
<td>fragmentation</td>
<td>Only collect the fragmented flows</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX recorder Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to configure to collect the destination address of flows in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# collect flow destination
```

7 Related Commands

None
25.17    collect ttl

1    Command Purpose

This command configures to collect ipfix flow information about ttl in ipfix recorder, use the no form of this command to delete this configure.

2    Command Syntax

collect ttl ( maximum | minimum | changed | )

    no collect ttl ( maximum | minimum | changed | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>maximum</td>
<td>Collect flow max ttl value</td>
<td>-</td>
</tr>
<tr>
<td>minimum</td>
<td>Collect flow min ttl value</td>
<td>-</td>
</tr>
<tr>
<td>changed</td>
<td>Collect flow ttl changed history</td>
<td>-</td>
</tr>
</tbody>
</table>

3    Command Mode

IPFIX recorder Configuration

4    Default

None

5    Usage

None

6    Examples

This example shows how to configure to collect the maximum ttl and minimum ttl of the flows in ipfix recorder:
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# collect ttl maximum
Switch(Config-ipfix-recorder)# collect ttl minimum

7 Related Commands

None

25.18 collect timestamp

1 Command Purpose

This command configures to collect ipfix flow information about timestamp in ipfix recorder, use the no form of this command to delete this configure.

2 Command Syntax

collect timestamp ( first | last )

no collect timestamp ( first | last )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>first</td>
<td>Collect flow start timestamp</td>
<td>-</td>
</tr>
<tr>
<td>last</td>
<td>Collect flow end timestamp</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX recorder Configuration

4 Default

None
5 Usage

None

6 Examples

This example shows how to configure to collect the timestamp of the flows in ipfix recorder:

```
Switch# configure terminal
Switch(config)# ipfix recorder recorder1
Switch(Config-ipfix-recorder)# collect timestamp first
```

7 Related Commands

None

25.19 ipfix exporter

1 Command Purpose

Use this command to create a ipfix exporter and enter exporter configure mode.

To remove the ipfix exporter, use the no form of this command.

2 Command Syntax

ipfix exporter NAME

no ipfix exporter NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix exporter name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

Global Configuration
4 Default

None

5 Usage

If ipfix exporter has existed, it will enter IPFIX exporter Configuration; if ipfix exporter is new, it will create exporter and enter IPFIX exporter Configuration; this command should work with the other commands.

6 Examples

This example shows how to create ipfix exporter exporter1 in global configuration and enter IPFIX exporter Configuration:

Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(config-ipfix-exporter)#

This example shows how to delete ipfix exporter exporter1:

Switch# configure terminal
Switch(config)# no ipfix exporter exporter1

7 Related Commands

template data timeout

flow data timeout

event flow start

event flow end (tcp-end|timeout)

transport protocol udp

25.20 description

1 Command Purpose

This command used to describe ipfix exporter, use the no form of this command to delete this description.
2 Command Syntax

description DESCRIPTION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Ipfix exporter description</td>
<td>Up to 64 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX exporter Configuration

4 Default

None

5 Usage

None

6 Examples

Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# description this is a ipfix exporter

Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# no description

7 Related Commands

None

25.21 destination

1 Command Purpose

This command used to configure collector host name that need to receive flow records in ipfix exporter, use the no form of this command to delete this description.
2 Command Syntax

destination mgmt-if ipv4 IPV4_ADDR

no destination

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPV4_ADDR</td>
<td>IP address of collector</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX exporter Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to create a host named host1 in IPFIX exporter Configuration:

```
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipv4-exporter)# destination mgmt-if ipv4 9.0.0.2
```

7 Related Commands

None
25.22  dscp

1  Command Purpose

this command used to configure the dscp value of the message that need to be sended in ipfix exporter, use the no form of this command to delete this description.

2  Command Syntax

dscp DSCP

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSCP</td>
<td>dscp value</td>
<td>0-63</td>
</tr>
</tbody>
</table>

3  Command Mode

IPFIX exporter Configuration

4  Default

63

5  Usage

None

6  Examples

This example shows how to configure dscp to be 20 in IPFIX exporter Configuration:

```
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# dscp 20
```

7  Related Commands

None
25.23 **domain-id**

1 **Command Purpose**

This command used to configure the ipfix domain value of the message that needs to be sent in ipfix exporter, use the no form of this command to delete this description.

2 **Command Syntax**

```plaintext
domain-id ID
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>domain id</td>
<td>1-65535</td>
</tr>
</tbody>
</table>

3 **Command Mode**

IPFIX exporter Configuration

4 **Default**

None

5 **Usage**

None

6 **Examples**

This example shows how to configure domain-id to be 1000 in IPFIX exporter Configuration:

```plaintext
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# domain-id 1000
```

7 **Related Commands**

None
25.24 template data timeout

1 Command Purpose

This command used to configure time interval of sending template data in ipfix exporter, use the no form of this command to delete this description.

2 Command Syntax

```
template data timeout  TIMEOUT
```

```
no template data timeout
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMEOUT</td>
<td>template data timeout</td>
<td>1-86400</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX exporter Configuration

4 Default

600

5 Usage

None

6 Examples

This example shows how to configure time interval of sending template data to be 200 seconds in IPFIX exporter Configuration:

```
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# template data timeout 200
```
7 Related Commands

None

25.25 flow data timeout

1 Command Purpose

This command used to configure time interval of sending flow data in ipfix exporter, use the no form of this command to delete this description.

2 Command Syntax

flow data timeout \textit{TIMEOUT}

\texttt{no flow data timeout}

3 Command Mode

IPFIX exporter Configuration

4 Default

600

5 Usage

None

6 Examples

This example shows how to configure time interval of sending flow data to be 200 seconds in IPFIX exporter Configuration:

\begin{tabular}{|c|c|c|}
  \hline
  Parameter & Parameter Description & Parameter Value \\
  \hline
  \textit{TIMEOUT} & flow data timeout & 1-86400 \\
  \hline
\end{tabular}
7  Related Commands

None

25.26  transport protocol

1  Command Purpose

This command used to configure to use which transport when send message in ipfix exporter, use the no form of this command to delete this description.

2  Command Syntax

transport protocol udp port $UDP_PORT$

no transport protocol

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$UDP_PORT$</td>
<td>transport protocol number</td>
<td>Range is 2000 to 65535, Default is 2055</td>
</tr>
</tbody>
</table>

3  Command Mode

IPFIX exporter Configuration

4  Default

2055

5  Usage

None
6  Examples

This example shows how to configure transport protocol of flow data sended to be udp and its port is 3500 in IPFIX exporter Configuration:

Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# transport protocol udp 3500

7  Related Commands

None

25.27  ttl

1  Command Purpose

This command used to configure the ttl of the sended message in ipfix exporter, use the no form of this command to delete this description.

2  Command Syntax

\texttt{ttl} \texttt{TTL}

\texttt{no ttl}

\begin{tabular}{|c|c|c|}
\hline
Parameter & Parameter Description & Parameter Value \\
\hline
TTL & TTL value & 1-255 \\
\hline
\end{tabular}

3  Command Mode

IPFIX exporter Configuration

4  Default

255
5  Usage

None

6  Examples

This example shows how to configure ttl value of flow data to be 255 in IPFIX exporter Configuration:

```
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# ttl 255
```

7  Related Commands

None

25.28  event flow

1  Command Purpose

This command used to configure which event should trigger to send flow information at once in ipfix exporter, use the no form of this command to delete this description.

2  Command Syntax

```
event flow start

no event flow start

event flow end ( tcp-end | timeout )

no event flow end ( tcp-end | timeout )
```

3  Command Mode

IPFIX exporter Configuration

4  Default

None
5 Usage

None

6 Examples

This example shows how to configure the event about ending tcp transmission of flow data will triggle to send flow information in IPFIX exporter Configuration:

```
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# event flow tcp-end
```

7 Related Commands

None

25.29 flow data flush threshold length

1 Command Purpose

This command used to configure the threshold. When the threshold is reached, flow information should be sent at once in ipfix exporter

2 Command Syntax

```
flow data flush threshold length LENGTH
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH</td>
<td>length threshold value</td>
<td>1000-60000</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX exporter Configuration

4 Default

1416
5  Usage

None

6  Examples

This example shows how to configure the length threshold value about flow data in IPFIX exporter Configuration. When the threshold is reached, flow data information will be sent at once:

```
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(config-ipfix-exporter)# flow data flush threshold length 2000
```

7  Related Commands

None

25.30  flow data flush threshold timer

1  Command Purpose

This command used to configure the threshold. When the threshold is reached, flow information should be sent at once in ipfix exporter

2  Command Syntax

flow data flush threshold timer $\text{TIMER}$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMER</td>
<td>timer threshold value</td>
<td>100-60000</td>
</tr>
</tbody>
</table>

3  Command Mode

IPFIX exporter Configuration
4  Default

500

5  Usage

None

6  Examples

This example shows how to configure the timer threshold value in IPFIX exporter Configuration. When the threshold is reached, flow data information will be sent at once:

Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# flow data flush threshold timer 1000

7  Related Commands

None

25.31  flow data flush threshold count

1  Command Purpose

This command used to configure the threshold. When the threshold is reached, flow information should be sent at once in ipfix exporter

2  Command Syntax

flow data flush threshold count COUNT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>COUNT</td>
<td>count threshold value</td>
<td>1-100</td>
</tr>
</tbody>
</table>

3  Command Mode

IPFIX exporter Configuration
4 Default

10

5 Usage

None

6 Examples

This example shows how to configure the count threshold value about flow data in IPFIX exporter.

Configuration. When the threshold is reached, flow data information will be sent at once:

```
Switch# configure terminal
Switch(config)# ipfix exporter exporter1
Switch(Config-ipfix-exporter)# flow data flush threshold count 20
```

7 Related Commands

None

25.32 ipfix sampler

1 Command Purpose

Use this command to create an IPFIX sampler and enter sampler configure mode. To remove the IPFIX sampler, use the `no` form of this command.

2 Command Syntax

```
ipfix sampler NAME

no ipfix sampler NAME
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix sampler name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>
3 Command Mode

Global Configuration

4 Default

None

5 Usage

If ipfix sampler has existed, it will enter IPFIX sampler Configuration; if ipfix sampler is new, it will create sampler and enter IPFIX sampler Configuration; this command should work with the command of match and collect.

6 Examples

This example shows how to create ipfix sampler sampler1 in global configuration and enter IPFIX sampler Configuration:

Switch# configure terminal
Switch(config)# ipfix sampler sampler1
Switch(Config-ipfix-sampler)#

This example shows how to delete ipfix sampler sampler1:

Switch# configure terminal
Switch(config)# no ipfix sampler sampler1

7 Related Commands

1 out-of

25.33 description

1 Command Purpose

2 Command Syntax

description DESCRIPTION
### Command Mode

IPFIX sampler Configuration

### Default

None

### Usage

None

### Examples

```
Switch# configure terminal
Switch(config)# ipfix sampler sampler 1
Switch(Config-ipfix-sampler)# description this is a ipfix sampler

Switch# configure terminal
Switch(config)# ipfix sampler sampler 1
Switch(Config-ipfix-sampler)# no description
```

### Related Commands

None

### 25.34 1 out-of

1 **Command Purpose**

This command used to configure the rate of ipfix sampler, use the no form of this command to delete this configure.

2 **Command Syntax**

1 out of `CLI_IPFIX_SAMPLER_RATE_RNG`
3  Command Mode

IPFIX sampler Configuration

4  Default

None

5  Usage

None

6  Examples

This example shows how to configure the rate of sampling is 1/100 in IPFIX sampler Configuration:

Switch# configure terminal
Switch(config)# ipfix sampler sampler 1
Switch(Config-ipfix-sampler)# 1 out of 100

7  Related Commands

None

25.35  mode

1  Command Purpose

This command used to configure the mode of ipfix sampler.

2  Command Syntax

mode ( random | determinate )
3 Command Mode
IPFIX sampler Configuration

4 Default
determinate

5 Usage
None

6 Examples
This example shows how to configure the determinate sampl mode in IPFIX sampler Configuration:

```
Switch# configure terminal
Switch(config)# ipfix sampler sampler 1
Switch(Config-ipfix-sampler)# mode determinate
```

7 Related Commands
None

25.36 mode flow

1 Command Purpose
This command used to configure the mode flow of ipfix sampler.

2 Command Syntax
mode flow ( new | all )
### Command Mode

**IPFIX sampler Configuration**

#### Default

*all*

#### Usage

*None*

#### Examples

This example shows how to configure the ipfix sampler to sample all flow in IPFIX sampler Configuration:

```
Switch# configure terminal
Switch(config)# ipfix sampler sampler 1
Switch(Config-ipfix-sampler)# mode flow all
```

#### Related Commands

*None*

### 25.37 ipfix monitor

#### Command Purpose

Use this command to create a ipfix monitor and enter monitor configure mode. To remove the ipfix monitor, use the no form of this command.

---

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>new</td>
<td>only sample new flow</td>
<td>-</td>
</tr>
<tr>
<td>all</td>
<td>sample all flow</td>
<td>-</td>
</tr>
</tbody>
</table>
2  Command Syntax

ipfix monitor NAME

    no ipfix monitor NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix monitor name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3  Command Mode

Global Configuration

4  Default

None

5  Usage

None

6  Examples

This example shows how to create ipfix monitor monitor1 in global configuration and enter IPFIX monitor Configuration:

Switch# configure terminal
Switch(config)# ipfix monitor monitor1
Switch(Config-ipfix-monitor)#

This example shows how to delete ipfix monitor monitor1:

Switch# configure terminal
Switch(config)# no ipfix monitor monitor1

7  Related Commands

recorder

exporter
25.38  description

1  Command Purpose

2  Command Syntax

description DESCRIPTION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>The length of ipfix monitor description should not exceed 64 characters</td>
<td>Up to 64 characters</td>
</tr>
</tbody>
</table>

3  Command Mode

IPFIX monitor Configuration

4  Default

None

5  Usage

None

6  Examples

Add description for IPFIX monitor:

```
Switch# configure terminal
Switch(config)# ipfix monitor monitor1
Switch(Config-ipfix-monitor)# description this is a ipfix monitor
```

Remove description:

```
Switch# configure terminal
Switch(config)# ipfix monitor monitor1
Switch(Config-ipfix-monitor)# no description
```
7 Related Commands

None

25.39 recorder

1 Command Purpose

Use this command to create a ipfix recorder of the ipfix monitor. To remove the ipfix monitor, use the no form of this command.

2 Command Syntax

recorder NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix recorder name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX monitor Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to create a recorder of the ipfix monitor configure mode:

Switch# configure terminal
Switch(config)# ipfix monitor monitor1
Switch(Config-ipfix-monitor)# recorder recorder1
7 Related Commands

None

25.40 exporter

1 Command Purpose

Use this command to create an ipfix exporter of the ipfix monitor. To remove the ipfix monitor, use the no form of this command.

2 Command Syntax

exporter NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix exporter name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX monitor Configuration

4 Default

None

5 Usage

None

6 Examples

This example shows how to create a exporter of the ipfix monitor configure mode:

Switch# configure terminal
Switch(config)# ipfix monitor monitor1
Switch(Config-ipv6-monitor)# exporter exporter1
7 Related Commands

None

25.41 ipfix monitor

1 Command Purpose

This command used to enable ipfix.

2 Command Syntax

ipfix monitor ( input | output ) NAME ( sampler NAME | )

no ipfix monitor ( input | output )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>input</td>
<td>do ipfix for the inputed</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>packets</td>
<td></td>
</tr>
<tr>
<td>output</td>
<td>do ipfix for the outputed</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>packets</td>
<td></td>
</tr>
<tr>
<td>NAME</td>
<td>IPFIX monitor name</td>
<td>Up to 32 characters</td>
</tr>
<tr>
<td>sampler NAME</td>
<td>IPFIX sampler name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

Interface Configuration

4 Default

None
5 Usage
None

6 Examples
This example shows how to enable ipfix:

```
Switch# configure terminal
Switch(config)# interface eth-0-1
Switch(config-if)# ipfix monitor input monitor sampler test-sample
```

7 Related Commands
None

25.42 ipfix global

1 Command Purpose
Use this command to enter ipfix global configure mode.

2 Command Syntax

```
ipfix global
```

3 Command Mode
Global Configuration

4 Default
None

5 Usage
None
6 Examples

This example shows how to enter ipfix global configure mode:

```
Switch# configure terminal
Switch(config)# ipfix global
```

7 Related Commands

None

25.43 flow aging

1 Command Purpose

Use this command to configure ipfix global flow aging interval.

2 Command Syntax

```
flow aging INTERVAL
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERVAL</td>
<td>The aging time of the flow</td>
<td>Range is 15 to 65535, the default is 1800 seconds</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX Global Configuration

4 Default

None

5 Usage

None
6 Examples

This example shows how to configure the aging time to be 200 seconds in global configure mode:

```
Switch# configure terminal
Switch(config)# ipfix global
Switch(config-ipfix-global)# flow aging 200
```

7 Related Commands

None

25.44 flow export

1 Command Purpose

Use this command to configure ipfix global flow export interval.

2 Command Syntax

```
f \_\_e a r l y \_\_f l o w e x p o r t
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERVAL</td>
<td>The export time of the flow</td>
<td>Range is 0 to 1000, the default is 5 seconds</td>
</tr>
</tbody>
</table>

3 Command Mode

IPFIX Global Configuration

4 Default

None

5 Usage

None
6 Examples

This example shows how to configure the export time to be 200 seconds in global configure mode:

```
Switch# configure terminal
Switch(config)# ipfix global
Switch(config-ipfix-global)# flow export 200
```

7 Related Commands

None

25.45 show ipfix global

1 Command Purpose

Use the show ipfix global privileged EXEC command to display the configure information of ipfix global.

2 Command Syntax

show ipfix global

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows how to display configuration about ipfix global in privileged EXEC mode:

```
Switch# show ipfix global
```
7 Related Commands

None

25.46 show ipfix recorder

1 Command Purpose

Use the show ipfix recorder privileged EXEC command to display the configure information of one ipfix recorder.

2 Command Syntax

show ipfix recorder NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix recorder name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows how to show ipfix recorder command:

```
Switch# show ipfix recorder recorder1
IPFIX recorder information:
  Name       : recorder1
```
7 Related Commands

None

25.47 show ipfix exporter

1 Command Purpose

Use the show ipfix exporter privileged EXEC command to display the configure information of one ipfix exporter.

2 Command Syntax

show ipfix exporter NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix exporter name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None
6 Examples

This example shows how to display configuration about exporter1 in privileged EXEC mode:

Switch# show ipfix exporter exporter1

IPFIX exporter information:
  Name: exporter1
  Description: 
  Domain ID: 0
  Collector Name: 9.0.0.2
  IPFIX message protocol: UDP
  IPFIX message destination Port: 2055
  IPFIX message TTL value: 255
  IPFIX message DSCP value: 63
  IPFIX data interval: 200
  IPFIX template interval: 1800
  IPFIX exporter events:
    Flow aging event

7 Related Commands

None

25.48 show ipfix cache

1 Command Purpose

This command used to show the state information of the ipfix on the interface.

2 Command Syntax

show ipfix cache observe-point interface IFNAME (input | output)

show ipfix cache monitor NAME

show ipfix cache counter observe-point interface IFNAME

show ipfix cache counter monitor NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFNAME</td>
<td>Interface name</td>
<td>Support physical/aggregation</td>
</tr>
<tr>
<td>NAME</td>
<td>ipfix monitor name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows how to show the state information of the ipfix on the interface eth-0-1 in privileged EXEC mode:

```
Switch# show ipfix cache observe-point interface eth-0-1 input
Cache dir             : input
Cache flow profile   : 0
Cache key profile    : 0
Cache key info:
  Source mac          : 0000.0002.0001
  ipsa                : 10.10.10.3/32
  ipda                : 10.10.10.1/32
Cache collect info:
  Byte number of ingress : 64
  Packet number of ingress : 1
```

7 Related Commands

None

25.49 show ipfix monitor

1 Command Purpose

This command used to describe the configuration of the ipfix monitor.

2 Command Syntax

show ipfix monitor NAME
3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows how to display configuration of monitor 1 in privileged EXEC mode:

```
Switch# show ipfix monitor monitor1

IPFIX monitor information:
  Name             : monitor1
  Description      :
  Recorder         : recorder1
  Exporter         : exporter1
```

7 Related Commands

None

25.50 show ipfix sampler

1 Command Purpose

This command used to describe the configuration of the ipfix sampler.
2 Command Syntax

show ipfix sampler NAME

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>ipfix sampler name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows how to display configuration of sampler1 in privileged EXEC mode:

```
Switch# show ipfix sampler sampler1
IPFIX sampler information:
  Name : sampler1
  Description : 
  Rate : 100
  Sample mode : determinate
  Flow mode : all
```

7 Related Commands

None
25.51 clear ipfix cache monitor

1 Command Purpose
This command used to clear cache with ipfix monitor name.

2 Command Syntax

```
clear ipfix cache monitor NAME
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>IPFIX monitor name</td>
<td>Up to 32 characters</td>
</tr>
</tbody>
</table>

3 Command Mode
Privileged EXEC

4 Default
None

5 Usage
None

6 Examples
This example shows how to clear ipfix cache with name test in privileged EXEC mode:

```
Switch# clear ipfix cache monitor test
```

7 Related Commands
None
25.52 clear ipfix cache observe-point interface

1 Command Purpose

This command used to clear cache on interface.

2 Command Syntax

clear ipfix cache observe-point interface (IFNAME) (input | output)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFPHYSICAL</td>
<td>Name of interface</td>
<td>Support physical/aggregation</td>
</tr>
<tr>
<td>input</td>
<td>the inputed packets</td>
<td>-</td>
</tr>
<tr>
<td>output</td>
<td>the outputed packets</td>
<td>-</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

None

6 Examples

This example shows how to clear ipfix cache on interface eth-0-1 in privileged EXEC mode:

```
Switch# clear ipfix cache observe-point interface eth-0-1 input
```
7  Related Commands

None
26.1 show interface queue discard

1 Command Purpose

Use this command to display the situation of interface queue discard.

2 Command Syntax

show interface queue discard ( IF_NAME_E | )

clear interface queue discard ( IF_NAME_E | )

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF_NAME_E</td>
<td>interface Name string</td>
<td>Specify the interface name to enter the mode. e.g. eth-0-1.</td>
</tr>
</tbody>
</table>

3 Command Mode

Privileged EXEC

4 Default

None

5 Usage

If the parameter “IF_NAME_E” is not specified, the command indicates that all interfaces on this device should be displayed; otherwise only the specified interface should be displayed.
6 Examples

The following example shows how to display the situation of interface queue discard:

```
Switch# show interface queue discard
```

<table>
<thead>
<tr>
<th>Interface</th>
<th>Drop-Packets</th>
<th>Drop-Bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>eth-0-1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-12</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-21</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-22</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-23</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>eth-0-24</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The following example shows how to clear interface queue discard:

```
Switch# clear interface queue discard
```

7 Related Commands

N/A

26.2 diagnostic-information discard

1 Command Purpose

Use this command to enable the function of diagnostic-information discard.

2 Command Syntax

diagnostic-information discard enable

no diagnostic-information discard enable
3 Command Mode

Global Configuration

4 Default

no diagnostic-information discard enable

5 Usage

The command uses to enable the function of diagnostic-information discard.

6 Examples

The following example shows how to enable the function of diagnostic-information discard:

Switch(config)# diagnostic-information discard enable

The following example shows how to disable the function of diagnostic-information discard:

Switch(config)# no diagnostic-information discard enable

7 Related Commands

N/A

26.3 show diagnostic-information

1 Command Purpose

Use this command to display the situation of packet discard.

2 Command Syntax

show diagnostic-information discard
The clear diagnostic-information discard command is used to display the situation of packet discard.

### Examples

The following example shows how to display the situation of packet discard:

```
Switch# show diagnostic-information discard
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Parameter Description</th>
<th>Parameter Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>discard</td>
<td>discard</td>
<td>The string of discard.</td>
</tr>
</tbody>
</table>

The following example shows how to clear packet discard:

```
Switch# clear diagnostic-information discard
```
7  Related Commands

N/A