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# Ethernet interface commands

## Common Ethernet interface commands

### bandwidth

Use **bandwidth** to set the expected bandwidth of an interface.

Use **undo bandwidth** to restore the default.

#### Syntax

**bandwidth** *bandwidth-value*

**undo bandwidth**

#### Default

The expected bandwidth (in kbps) is the interface baud rate divided by 1000.

#### Views

Ethernet interface view

Ethernet subinterface view

#### Predefined user roles

network-admin

#### Parameters

*bandwidth-value*: Specifies the expected bandwidth in the range of 1 to 400000000 kbps.

#### Usage guidelines

The expected bandwidth is an informational parameter used only by higher-layer protocols for calculation. You cannot adjust the actual bandwidth of an interface by using this command.

#### Examples

# Set the expected bandwidth of Ten-GigabitEthernet 1/0/1 to 1000 kbps.

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] bandwidth 1000
```

# Set the expected bandwidth of Ten-GigabitEthernet 1/0/1.1 to 1000 kbps.

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1.1
```

```
[Sysname-Ten-GigabitEthernet1/0/1.1] bandwidth 1000
```

#### Related commands

**speed**

### broadcast-suppression

Use **broadcast-suppression** to enable broadcast suppression and set the broadcast suppression threshold.

Use **undo broadcast-suppression** to disable broadcast suppression.

## Syntax

```
broadcast-suppression { ratio | pps max-pps | kbps max-kbps }  
undo broadcast-suppression
```

## Default

Ethernet interfaces do not suppress broadcast traffic.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**ratio**: Sets the broadcast suppression threshold as a percentage of the interface bandwidth. The value range for this argument is 0 to 100. A smaller value means that less broadcast traffic is allowed to pass through.

**pps** *max-pps*: Specifies the maximum number of broadcast packets that the interface can forward per second. The value range for the *max-pps* argument (in pps) is 0 to 1.4881 × the interface bandwidth.

**kbps** *max-kbps*: Specifies the maximum number of kilobits of broadcast traffic that the Ethernet interface can forward per second. The value range for this argument (in kbps) is 0 to the interface bandwidth.

## Usage guidelines

The broadcast storm suppression features limits the size of broadcast traffic to a threshold on an interface. When the broadcast traffic on the interface exceeds this threshold, the system drops packets until the traffic drops below this threshold.

Both the **storm-constrain** command and the **broadcast-suppression** command can suppress broadcast storms on a port. The **broadcast-suppression** command uses the chip to physically suppress broadcast traffic. It has less influence on the device performance than the **storm-constrain** command, which uses software to suppress broadcast traffic.

For the traffic suppression result to be determined, do not configure both the **storm-constrain broadcast** command and the **broadcast-suppression** command on an interface.

When you configure the suppression threshold in kbps, the actual suppression threshold might be different from the configured one as follows:

- If the configured value is smaller than 64, the value of 64 takes effect.
- If the configured value is greater than 64 but not an integer multiple of 64, the integer multiple of 64 that is greater than and closest to the configured value takes effect.

For the suppression threshold that takes effect, see the prompt on the device.

## Examples

```
# Set the broadcast suppression threshold to 10000 kbps on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] broadcast-suppression kbps 10000  
The actual value is 10048 on port Ten-GigabitEthernet1/0/1 currently.
```

The output shows that the value that takes effect is 10048 kbps (157 times of 64), because the chip only supports step 64.

## Related commands

```
multicast-suppression
```

## unicast-suppression

# dampening

Use **dampening** to enable the device to dampen an interface when the interface is flapping.

Use **undo dampening** to restore the default.

## Syntax

**dampening** [ *half-life reuse suppress max-suppress-time* ]

**undo dampening**

## Default

Interface dampening is disabled on Ethernet interfaces.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*half-life*: Specifies the amount of time after which a penalty is decreased, in the range of 1 to 120 seconds. The default value is 54 seconds.

*reuse*: Specifies the reuse threshold in the range of 200 to 20000. The default value is 750. The reuse threshold must be less than the suppression threshold.

*suppress*: Specifies the suppression threshold in the range of 200 to 20000. The default value is 2000.

*max-suppress-time*: Specifies the maximum amount of time the interface can be dampened, in the range of 1 to 255 seconds. The default value is 162 seconds (three times the half-life timer).

## Usage guidelines

This command, the **link-delay** command, and the **port link-flap protect enable** command are mutually exclusive on an interface.

This command does not take effect on the administratively down events. When you execute the **shutdown** command, the penalty restores to 0, and the interface reports the down event to the higher layer protocols.

Do not enable the dampening function on an interface with RRPP, MSTP, or Smart Link enabled.

After an interface in down state is dampened, the interface state displayed through the **display interface** command or MIB is always down.

## Examples

# Enable interface dampening on Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] dampening
```

# Enable interface dampening on Ten-GigabitEthernet 1/0/1, and set the following parameters:

- Half life time to 2 seconds.
- Reuse value to 800.
- Suppression threshold to 3000.
- Maximum suppression interval to 5 seconds.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] dampening 2 800 3000 5
```

## Related commands

**display interface**

**link-delay**

**port link-flap protect enable**

## default

Use **default** to restore the default settings for an interface.

### Syntax

**default**

### Views

Ethernet interface view

Ethernet subinterface view

### Predefined user roles

network-admin

### Usage guidelines

---

#### CAUTION:

The **default** command might interrupt ongoing network services. Make sure you are fully aware of the impacts of this command when you use it in a live network.

---

This command might fail to restore the default settings for some commands because of command dependencies or system restrictions. You can use the **display this** command in interface view to identify these commands, and use their **undo** forms or follow the command reference to restore their default settings. If your restoration attempt still fails, follow the error message instructions to solve the problem.

### Examples

# Restore the default settings for Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] default
```

# Restore the default settings for Ten-GigabitEthernet 1/0/1.1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1.1
[Sysname-Ten-GigabitEthernet1/0/1.1] default
```

## description

Use **description** to configure the description of an interface.

Use **undo description** to restore the default.

### Syntax

**description** *text*

## undo description

### Default

The description of an interface is the interface name plus **Interface** (for example, **Ten-GigabitEthernet1/0/1 Interface**).

### Views

Ethernet interface view

Ethernet subinterface view

### Predefined user roles

network-admin

### Parameters

*text*: Specifies the interface description, a case-sensitive string of 1 to 255 characters.

### Examples

# Set the description of Ten-GigabitEthernet 1/0/1 to **lan-interface**.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] description lan-interface
```

# Set the description of Ten-GigabitEthernet 1/0/1.1 to **subinterface1/0/1.1**.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1.1
[Sysname-Ten-GigabitEthernet1/0/1.1] description subinterface1/0/1.1
```

## display counters

Use **display counters** to display interface traffic statistics.

### Syntax

```
display counters { inbound | outbound } interface [ interface-type [ interface-number | interface-number.subnumber ] ]
```

### Views

Any view

### Predefined user roles

network-admin

network-operator

### Parameters

**inbound**: Displays inbound traffic statistics.

**outbound**: Displays outbound traffic statistics.

*interface-type*: Specifies an interface type.

*interface-number*: Specifies an interface number.

*interface-number.subnumber*: Specifies a subinterface number. The *interface-number* argument is an interface number. The *subnumber* argument is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

## Usage guidelines

This command displays traffic statistics within a statistics polling interval specified by using the **flow-interval** command.

To clear the Ethernet interface traffic statistics, use the **reset counters interface** command.

If you do not specify an interface type, this command displays traffic statistics for all interfaces that have traffic counters.

If you specify an interface type but do not specify an interface number or subinterface number, this command displays traffic statistics for all interfaces of the specified type.

If you specify an interface type and an interface or subinterface number, this command displays traffic statistics for the specified interface or subinterface.

## Examples

# Display inbound traffic statistics for all interfaces.

```
<Sysname> display counters inbound interface
```

Interface	Total (pkts)	Broadcast (pkts)	Multicast (pkts)	Err (pkts)
XGE1/0/1	100	100	0	0
XGE1/0/2	Overflow	Overflow	Overflow	Overflow

Overflow: More than 14 digits (7 digits for column "Err").

--: Not supported.

**Table 1 Command output**

Field	Description
Interface	Abbreviated interface name.
Total (pkts)	Total number of packets received or sent through the interface.
Broadcast (pkts)	Total number of broadcast packets received or sent through the interface.
Multicast (pkts)	Total number of multicast packets received or sent through the interface.
Err (pkts)	Total number of error packets received or sent through the interface.
Overflow: More than 14 digits (7 digits for column "Err")	The command displays <b>Overflow</b> when any of the following conditions exist: <ul style="list-style-type: none"><li>• The data length of an <b>Err</b> field value is greater than 7 decimal digits.</li><li>• The data length of a non-Err field value is greater than 14 decimal digits.</li></ul>
--: Not supported	The statistical item is not supported.

## Related commands

**flow-interval**

**reset counters interface**

## display counters rate

Use **display counters rate** to display traffic rate statistics for interfaces in up state for the most recent statistics polling interval.

## Syntax

```
display counters rate { inbound | outbound } interface [ interface-type [ interface-number | interface-number.subnumber ] ]
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Parameters

**inbound:** Displays inbound traffic rate statistics.

**outbound:** Displays outbound traffic rate statistics.

*interface-type:* Specifies an interface type.

*interface-number:* Specifies an interface number.

*interface-number.subnumber:* Specifies a subinterface number. The *interface-number* argument is an interface number. The *subnumber* argument is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

## Usage guidelines

If you do not specify an interface type, this command displays traffic rate statistics for all up interfaces that have traffic counters.

If you specify an interface type but do not specify an interface number or subinterface number, this command displays traffic rate statistics for all up interfaces of the specified type.

If you specify an interface type and an interface or subinterface number, this command displays traffic rate statistics for the specified interface or subinterface.

If an interface that you specify is always down for the most recent statistics polling interval, the system prompts that the interface does not support the command.

To set the statistics polling interval, use the **flow-interval** command.

## Examples

# Display the inbound traffic rate statistics for all interfaces.

```
<Sysname> display counters rate inbound interface
```

```
Usage: Bandwidth utilization in percentage
```

Interface	Usage (%)	Total (pps)	Broadcast (pps)	Multicast (pps)
XGE1/0/1	3	200	100	100

```
Overflow: More than 14 digits.
```

```
--: Not supported.
```

**Table 2 Command output**

Field	Description
Interface	Abbreviated interface name.
Usage (%)	Bandwidth usage (in percentage) of the interface for the last statistics polling interval.
Total (pkts/sec)	Average receiving or sending rate (in pps) for unicast packets for the last statistics polling interval.
Broadcast (pkts/sec)	Average receiving or sending rate (in pps) for broadcast packets for the last statistics polling interval.
Multicast (pkts/sec)	Average receiving or sending rate (in pps) for multicast packets for the last statistics polling interval. .

Field	Description
Overflow: more than 14 decimal digits	The command displays <b>Overflow</b> if the data length of a statistical item is greater than 14 decimal digits.
--: not supported	The statistical item is not supported.

## Related commands

**flow-interval**

**reset counters interface**

# display ethernet statistics

Use **display ethernet statistics** to display the Ethernet module statistics.

## Syntax

**display ethernet statistics slot** *slot-number*

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Parameters

**slot** *slot-number*: Specifies an IRF member device by its member ID.

## Examples

# Display the Ethernet module statistics for the specified slot.

```
<Sysname> display ethernet statistics slot 1
ETH receive packet statistics:
  Totalnum      : 10447          ETHIINum      : 4459
  SNAPNum       : 0             RAWNum        : 0
  LLCNum        : 0             UnknownNum    : 0
  ForwardNum    : 4459          ARP           : 0
  MPLS          : 0             ISIS          : 0
  ISIS2         : 0             IP            : 0
  IPV6          : 0
ETH receive error statistics:
  NullPoint     : 0             ErrIfindex    : 0
  ErrIfcb       : 0             IfShut        : 0
  ErrAnalyse    : 5988          ErrSrcMAC     : 5988
  ErrHdrLen     : 0
ETH send packet statistics:
  L3OutNum      : 211           VLANOutNum    : 0
  FastOutNum    : 155           L2OutNum     : 0
ETH send error statistics:
  MbufRelayNum  : 0             NullMbuf      : 0
  ErrAdjFwd    : 0             ErrPrepend    : 0
```

```

ErrHdrLen      : 0                ErrPad         : 0
ErrQoSTrs     : 0                ErrVLANTrs    : 0
ErrEncap      : 0                ErrTagVLAN    : 0
IfShut        : 0                IfErr         : 0

```

**Table 3 Output description**

Field	Description
ETH receive packet statistics	<p>Statistics about the Ethernet packets received by the Ethernet module:</p> <ul style="list-style-type: none"> <li>• <b>Totalnum</b>—Total number of received packets.</li> <li>• <b>ETHIINum</b>—Number of packets encapsulated by using Ethernet II.</li> <li>• <b>SNAPNum</b>—Number of packets encapsulated by using SNAP.</li> <li>• <b>RAWNum</b>—Number of packets encapsulated by using RAW.</li> <li>• <b>LLCNum</b>—Number of packets encapsulated by using LLC.</li> <li>• <b>UnknownNum</b>—Number of packets encapsulated by using unknown methods.</li> <li>• <b>ForwardNum</b>—Number of packets forwarded at Layer 2 or sent to the CPU.</li> <li>• <b>ARP</b>—Number of ARP packets.</li> <li>• <b>MPLS</b>—Number of MPLS packets.</li> <li>• <b>ISIS</b>—Number of IS-IS packets.</li> <li>• <b>ISIS2</b>—Number of large 802.3/802.2 frames encapsulated by using IS-IS.</li> <li>• <b>IP</b>—Number of IP packets.</li> <li>• <b>IPv6</b>—Number of IPv6 packets.</li> </ul>
ETH receive error statistics	<p>Statistics about the error Ethernet packets in the inbound direction on the Ethernet module. Errors might be included in packets or occur during the receiving process. The items include:</p> <ul style="list-style-type: none"> <li>• <b>NullPoint</b>—Number of packets that include null pointers.</li> <li>• <b>ErrIfindex</b>—Number of packets that include incorrect interface indexes.</li> <li>• <b>ErrIfcb</b>—Number of packets that include incorrect interface control blocks.</li> <li>• <b>IfShut</b>—Number of packets that are being received when the interface is shut down.</li> <li>• <b>ErrAnalyse</b>—Number of packets that include packet parsing errors.</li> <li>• <b>ErrSrcMAC</b>—Number of packets that include incorrect source MAC addresses.</li> <li>• <b>ErrHdrLen</b>—Number of packets that include header length errors.</li> </ul>
ETH send packet statistics	<p>Statistics about the Ethernet packets sent by the Ethernet module:</p> <ul style="list-style-type: none"> <li>• <b>L3OutNum</b>—Number of packets sent out of Layer 3 Ethernet interfaces.</li> <li>• <b>VLANOutNum</b>—Number of packets sent out of VLAN interfaces.</li> <li>• <b>FastOutNum</b>—Number of packets fast forwarded.</li> <li>• <b>L2OutNum</b>—Number of packets sent out of Layer 2 Ethernet interfaces.</li> <li>• <b>MbufRelayNum</b>—Number of packets transparently sent.</li> </ul>
ETH send error statistics	<p>Statistics about the error Ethernet packets in the outbound direction on the Ethernet module:</p> <ul style="list-style-type: none"> <li>• <b>NullMbuf</b>—Number of packets with null pointers.</li> <li>• <b>ErrAdjFwd</b>—Number of packets with adjacency table errors.</li> <li>• <b>ErrPrepend</b>—Number of packets with extension errors.</li> <li>• <b>ErrHdrLen</b>—Number of packets with header length errors.</li> <li>• <b>ErrPad</b>—Number of packets with padding errors.</li> <li>• <b>ErrQoSTrs</b>—Number of packets that failed to be sent by QoS.</li> <li>• <b>ErrVLANTrs</b>—Number of packets that failed to be sent in VLANs.</li> </ul>

Field	Description
	<ul style="list-style-type: none"> <li>• <b>ErrEncap</b>—Number of packets that failed to be sent due to link header encapsulation failures.</li> <li>• <b>ErrTagVLAN</b>—Number of packets that failed to be sent due to VLAN tag encapsulation failures.</li> <li>• <b>IfShut</b>—Number of packets that are being sent when the interface is shut down.</li> <li>• <b>IfErr</b>—Number of packets with incorrect outgoing interfaces.</li> </ul>

## Related commands

**reset ethernet statistics**

# display interface

Use **display interface** to display interface information.

## Syntax

```
display interface [ interface-type [ interface-number | interface-number.subnumber ] ] [ brief
[ description | down ] ]
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Parameters

*interface-type*: Specifies an interface type.

*interface-number*: Specifies an interface number.

*interface-number.subnumber*: Specifies a subinterface number. The *interface-number* argument is an interface number. The *subnumber* argument is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

**brief**: Displays brief interface information. If you do not specify this keyword, the command displays detailed interface information.

**description**: Displays complete interface descriptions. If you do not specify this keyword, the command displays only the first 27 characters of each interface description.

**down**: Displays information about interfaces in down state and the causes. If you do not specify this keyword, the command displays information about interfaces in all states.

## Usage guidelines

If you do not specify an interface type, this command displays information about all interfaces.

If you specify an interface type but do not specify an interface number or subinterface number, this command displays information about all interfaces of the specified type.

## Examples

# Display information about Layer 3 interface Ten-GigabitEthernet 1/0/1.

```
<Sysname> display interface ten-gigabitethernet 1/0/1
Ten-GigabitEthernet1/0/1
Current state: Administratively DOWN
Line protocol state: DOWN
```

```

Description: Ten-GigabitEthernet1/0/1 Interface
Bandwidth: 1000000 kbps
Maximum transmission unit: 1500
Allow jumbo frames to pass
Broadcast max-ratio: 100%
Multicast max-ratio: 100%
Unicast max-ratio: 100%
Internet protocol processing: Disabled
IP packet frame type: Ethernet II, hardware address: 3822-d666-bd0c
IPv6 packet frame type: Ethernet II, hardware address: 3822-d666-bd0c
Loopback is not set
Media type is twisted pair, port hardware type is 10G_BASE_T
Port priority: 2
Unknown-speed mode, unknown-duplex mode
Link speed type is autonegotiation, link duplex type is autonegotiation
Flow-control is not enabled
The maximum frame length is 10000
Last link flapping: 6 hours 39 minutes 28 seconds
Last clearing of counters: Never
  Peak input rate: 0 bytes/sec, at 2013-07-07 16:07:11
  Peak output rate: 0 bytes/sec, at 2013-07-07 16:07:11
  Last 300 second input:  0 packets/sec 0 bytes/sec  0%
  Last 300 second output: 0 packets/sec 0 bytes/sec  0%
Input  (total): 0 packets, 0 bytes
             0 unicasts, 0 broadcasts, 0 multicasts, - pauses
Input  (normal): 0 packets, 0 bytes
             0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Input: 0 input errors, 0 runts, 0 giants, 0 throttles
       0 CRC, 0 frame, 0 overruns, - aborts
       - ignored, - parity errors
Output (total): 0 packets, 0 bytes
             0 unicasts, 0 broadcasts, 0 multicasts, - pauses
Output (normal): 0 packets, 0 bytes
             0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Output: 0 output errors, - underruns, - buffer failures
       0 aborts, 0 deferred, 0 collisions, 0 late collisions
       - lost carrier, - no carrier

```

**# Display detailed information about Layer 2 interface Ten-GigabitEthernet 1/0/1.**

```

<Sysname> display interface ten-gigabitethernet 1/0/1
Ten-GigabitEthernet1/0/1
Current state: DOWN
Line protocol state: DOWN
IP packet frame type: Ethernet II, hardware address: 000c-2963-b767
Description: Ten-GigabitEthernet1/0/1 Interface
Bandwidth: 100000 kbps
Loopback is not set
Media type is twisted pair, port hardware type is 10G_BASE_T
Unknown-speed mode, unknown-duplex mode

```

```

Link speed type is autonegotiation, link duplex type is autonegotiation
Flow-control is not enabled
Maximum frame length: 9216
Allow jumbo frame to pass
Broadcast max-ratio: 100%
Multicast max-ratio: 100%
Unicast max-ratio: 100%
PVID: 1
MDI type: Automdix
Port link-type: Access
  Tagged VLANs:   None
  UnTagged VLANs: 1
Port priority: 2
Last link flapping: 6 hours 39 minutes 25 seconds
Last clearing of counters:  14:34:09 Tue 11/01/2011
  Peak input rate: 0 bytes/sec, at 2013-07-17 22:06:19
  Peak output rate: 0 bytes/sec, at 2013-07-17 22:06:19
  Last 300 second input:  0 packets/sec 0 bytes/sec -%
  Last 300 second output: 0 packets/sec 0 bytes/sec -%
Input (total):  0 packets, 0 bytes
                0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Input (normal): 0 packets, 0 bytes
                0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Input:  0 input errors, 0 runts, 0 giants, 0 throttles
        0 CRC, 0 frame, 0 overruns, 0 aborts
        0 ignored, 0 parity errors
Output (total): 0 packets, 0 bytes
                0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Output (normal): 0 packets, 0 bytes
                 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Output: 0 output errors, 0 underruns, 0 buffer failures
        0 aborts, 0 deferred, 0 collisions, 0 late collisions
        0 lost carrier, 0 no carrier

```

**Table 4 Command output**

Field	Description
Current state	Physical link state of the interface: <ul style="list-style-type: none"> <li>• <b>Administratively DOWN</b>—The interface has been shut down by using the <b>shutdown</b> command.</li> <li>• <b>DOWN</b>—The interface is administratively up, but its physical state is down (possibly because no physical link exists or the link has failed).</li> <li>• <b>DOWN (Link-Aggregation interface down)</b>—The aggregate interface to which the interface belongs has been shut down by using the <b>shutdown</b> command.</li> <li>• <b>DOWN (Loopback detection down)</b>—The interface has been shut down by the loop detection feature.</li> <li>• <b>Link-Flap DOWN</b>—The interface has been shut down by the link flapping protection feature.</li> <li>• <b>mac-address moving down</b>—The interface has been shut</li> </ul>

Field	Description
	<p>down by the MAC address move suppression feature.</p> <ul style="list-style-type: none"> <li>• <b>MAD ShutDown</b>—The interface has been shut down by IRF MAD. This state occurs if the interface is on an IRF fabric placed in Recovery state after an IRF split.</li> <li>• <b>OFF DOWN</b>—The interface has been shut down by OpenFlow.</li> <li>• <b>Storm-Constrain</b>—The interface has been shut down because the storm control feature detected that unknown unicast traffic, multicast traffic, or broadcast traffic exceeded the upper threshold.</li> <li>• <b>STP DOWN</b>—The interface has been shut down by the BPDU guard feature.</li> <li>• <b>UP</b>—The interface is both administratively and physically up.</li> </ul>
Line protocol state	<p>Data link layer state of the interface. The state is determined through automatic parameter negotiation at the data link layer.</p> <ul style="list-style-type: none"> <li>• <b>UP</b>—The data link layer protocol is up.</li> <li>• <b>UP (spoofing)</b>—The data link layer protocol is up, but the link is an on-demand link or does not exist. This attribute is typical of null interfaces and loopback interfaces.</li> <li>• <b>DOWN</b>—The data link layer protocol is down.</li> <li>• <b>DOWN (protocols)</b>—The data link layer has been shut down by protocols included in the parentheses. Available protocols include: <ul style="list-style-type: none"> <li>○ <b>DLDP</b>—Shuts down the data link layer when it detects that the link is unidirectional.</li> <li>○ <b>OAM</b>—Shuts down the data link layer when it detects a remote link failure.</li> <li>○ <b>LAGG</b>—Shuts down the data link layer when it detects that the aggregate interface does not have Selected ports.</li> <li>○ <b>BFD</b>—Shuts down the data link layer when it detects a link failure.</li> </ul> </li> </ul>
Bandwidth	Expected bandwidth of the interface.
Maximum transmission unit	MTU of the interface.
Internet protocol processing: Disabled	The interface is not assigned an IP address and cannot process IP packets.
Internet address	IP address of the interface. The <b>primary</b> attribute indicates that the address is the primary IP address.
IP packet frame type	IPv4 packet framing format.
hardware address	MAC address of the interface.
IPv6 packet frame type	IPv6 packet framing format.
Port priority	Port priority of the interface.
Loopback is set internal	An internal loopback test is running on the interface. This field depends on your configuration .
Loopback is set external	An external loopback test is running on the interface. This field depends on your configuration.
Loopback is not set	No loopback test is running on the interface. This field depends on your configuration.
10Mbps-speed mode	The interface is operating at 10 Mbps. This field depends on your

Field	Description
	configuration and the link parameter negotiation result.
100Mbps-speed mode	The interface is operating at 100 Mbps. This field depends on your configuration and the link parameter negotiation result.
1000Mbps-speed mode	The interface is operating at 1000 Mbps. This field depends on your configuration and the link parameter negotiation result.
10Gbps-speed mode	The interface is operating at 10 Gbps. This field depends on your configuration and the link parameter negotiation result.
25Gbps-speed mode	The interface is operating at 25 Gbps. This field depends on your configuration and the link parameter negotiation result.
40Gbps-speed mode	The interface is operating at 40 Gbps. This field depends on your configuration and the link parameter negotiation result.
100Gbps-speed mode	The interface is operating at 100 Gbps. This field depends on your configuration and the link parameter negotiation result.
Unknown-speed mode	The speed of the interface is unknown because the speed negotiation fails or the interface is physically disconnected.
half-duplex mode	The interface is operating in half duplex mode. This field depends on your configuration and the link parameter negotiation result.
full-duplex mode	The interface is operating in full duplex mode. This field depends on your configuration and the link parameter negotiation result.
unknown-duplex mode	The duplex mode of the interface is unknown because the duplex mode negotiation fails or the interface is physically disconnected.
Link speed type is autonegotiation	The interface is configured with the <b>speed auto</b> command.
Link speed type is force link	The interface is manually configured with a speed (for example, 1000 Mbps) by using the <b>speed</b> command.
link duplex type is autonegotiation	The interface is configured with the <b>duplex auto</b> command.
link duplex type is force link	The interface is manually configured with a duplex mode (for example, half or full) by using the <b>duplex</b> command.
Flow-control is not enabled	Generic flow control is disabled on the interface. This field depends on your configuration and the link parameter negotiation result.
The maximum frame length	Maximum length of Ethernet frames allowed to pass through the interface.
Allow jumbo frame to pass	The interface allows jumbo frames to pass through.
Broadcast max-	Broadcast storm suppression threshold in ratio, pps, or kbps. The unit of the threshold depends on your configuration.
Multicast max-	Multicast storm suppression threshold in ratio, pps, or kbps. The unit of the threshold depends on your configuration.
Unicast max-	Unknown unicast storm suppression threshold in ratio, pps, or kbps. The unit of the threshold depends on your configuration.
PVID	Port VLAN ID (PVID) of the interface.
MDI type	MDIX mode of the interface: <ul style="list-style-type: none"> <li>• automdix.</li> <li>• mdi.</li> <li>• mdix.</li> </ul>
Port link-type	Link type of the interface:

Field	Description
	<ul style="list-style-type: none"> <li>access.</li> <li>trunk.</li> <li>hybrid.</li> </ul>
Tagged VLANs	VLANs for which the interface sends packets without removing VLAN tags.
Untagged VLANs	VLANs for which the interface sends packets after removing VLAN tags.
VLAN Passing	VLANs whose packets can be forwarded by the port. The VLANs must have been created.
VLAN permitted	VLANs whose packets are permitted by the port.
Trunk port encapsulation	Encapsulation protocol type for the trunk port.
Last link flapping	The amount of time that has elapsed since the most recent physical state change of the interface. This field displays <b>Never</b> if the interface has been physically down since device startup.
Last clearing of counters	Time when the <b>reset counters interface</b> command was last used to clear the interface statistics. This field displays <b>Never</b> if the <b>reset counters interface</b> command has never been used on the interface since device startup.
Last 300 second input: 0 packets/sec 0 bytes/sec 0% Last 300 second output: 0 packets/sec 0 bytes/sec 0%	<p>Average inbound or outbound traffic rate (in pps and Bps) in the last 300 seconds, and the ratio of the actual rate to the interface bandwidth.</p> <p>A hyphen (-) indicates that the statistical item is not supported.</p>
Input(total): 0 packets, 0 bytes 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses	<p>The two fields on the first line represent the inbound traffic statistics (in packets and bytes) for the interface. All inbound normal packets, abnormal packets, and normal pause frames were counted.</p> <p>The four fields on the second line represent:</p> <ul style="list-style-type: none"> <li>Number of inbound unicast packets.</li> <li>Number of inbound broadcasts.</li> <li>Number of inbound multicasts.</li> <li>Number of inbound pause frames.</li> </ul> <p>A hyphen (-) indicates that the statistical item is not supported.</p>
Input(normal): 0 packets, 0 bytes 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses	<p>The two fields on the first line represent the inbound normal traffic and pause frame statistics (in packets and bytes) for the interface.</p> <p>The four fields on the second line represent:</p> <ul style="list-style-type: none"> <li>Number of inbound normal unicast packets.</li> <li>Number of inbound normal broadcasts.</li> <li>Number of inbound normal multicasts.</li> <li>Number of inbound normal pause frames.</li> </ul> <p>A hyphen (-) indicates that the statistical item is not supported.</p>
input errors	Statistics of incoming error packets.
runts	<p>Number of inbound frames meeting the following conditions:</p> <ul style="list-style-type: none"> <li>Shorter than 64 bytes.</li> <li>In correct format.</li> <li>Containing valid CRCs.</li> </ul>
giants	<p>Number of inbound giants. Giants refer to frames larger than the maximum frame length supported on the interface.</p> <p>For an Ethernet interface that does not permit jumbo frames, the</p>

Field	Description
	<p>maximum frame length is as follows:</p> <ul style="list-style-type: none"> <li>• 1518 bytes (without VLAN tags).</li> <li>• 1522 bytes (with VLAN tags).</li> </ul> <p>For an Ethernet interface that permits jumbo frames, the maximum Ethernet frame length is set when you configure jumbo frame support on the interface.</p>
throttles	Number of inbound frames that had a non-integer number of bytes.
CRC	Total number of inbound frames that had a normal length, but contained CRC errors.
frame	Total number of inbound frames that contained CRC errors and a non-integer number of bytes.
overruns	Number of packets dropped because the input rate of the port exceeded the queuing capability.
aborts	<p>Total number of illegal inbound packets:</p> <ul style="list-style-type: none"> <li>• <b>Fragment frames</b>—CRC error frames shorter than 64 bytes. The length (in bytes) can be an integral or non-integral value.</li> <li>• <b>Jabber frames</b>—CRC error frames greater than the maximum frame length supported on the Ethernet interface (with an integral or non-integral length). <ul style="list-style-type: none"> <li>○ For an Ethernet interface that does not permit jumbo frames, the maximum frame length is 1518 bytes (without VLAN tags) or 1522 bytes (with VLAN tags).</li> <li>○ For an Ethernet interface that permits jumbo frames, the maximum Ethernet frame length is set when you configure jumbo frame support on the interface.</li> </ul> </li> <li>• <b>Symbol error frames</b>—Frames that contained a minimum of one undefined symbol.</li> <li>• <b>Unknown operation code frames</b>—Non-pause MAC control frames.</li> <li>• <b>Length error frames</b>—Frames whose 802.3 length fields did not match the actual frame length (46 to 1500 bytes).</li> </ul>
ignored	Number of inbound frames dropped because the receiving buffer of the port ran low.
parity errors	Total number of frames with parity errors.
Output(total): 0 packets, 0 bytes 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses	<p>The two fields on the first line represent the outbound traffic statistics (in packets and bytes) for the interface. All outbound normal packets, abnormal packets, and normal pause frames were counted.</p> <p>The four fields on the second line represent:</p> <ul style="list-style-type: none"> <li>• Number of outbound unicast packets.</li> <li>• Number of outbound broadcasts.</li> <li>• Number of outbound multicasts.</li> <li>• Number of outbound pause frames.</li> </ul> <p>A hyphen (-) indicates that the statistical item is not supported.</p>
Output(normal): 0 packets, 0 bytes 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses	<p>The two fields on the first line represent the outbound normal traffic and pause frame statistics (in packets and bytes) for the interface.</p> <p>The four fields on the second line represent:</p> <ul style="list-style-type: none"> <li>• Number of outbound normal unicast packets.</li> </ul>

Field	Description
	<ul style="list-style-type: none"> <li>Number of outbound normal broadcasts.</li> <li>Number of outbound normal multicasts.</li> <li>Number of outbound normal pause frames.</li> </ul> A hyphen (-) indicates that the statistical item is not supported.
output errors	Number of outbound packets with errors.
underruns	Number of packets dropped because the output rate of the interface exceeded the output queuing capability. This is a low-probability hardware anomaly.
buffer failures	Number of packets dropped because the transmitting buffer of the interface ran low.
aborts	Number of packets that failed to be transmitted, for example, because of Ethernet collisions.
deferred	Number of frames that the interface deferred to transmit because of detected collisions.
collisions	Number of frames that the interface stopped transmitting because Ethernet collisions were detected during transmission.
late collisions	Number of frames that the interface deferred to transmit after transmitting their first 512 bits because of detected collisions.
lost carrier	Number of carrier losses during transmission. This counter increases by one when a carrier is lost, and applies to serial WAN interfaces.
no carrier	Number of times that the port failed to detect the carrier when attempting to send frames. This counter increases by one when a port failed to detect the carrier, and applies to serial WAN interfaces.
Peak input rate	Peak rate of inbound traffic in Bps, and the time when the peak inbound traffic rate occurred.
Peak output rate	Peak rate of outbound traffic in Bps, and the time when the peak outbound traffic rate occurred.

**# Display brief information about all interfaces.**

```
<Sysname> display interface brief
```

Brief information on interfaces in route mode:

Link: ADM - administratively down; Stby - standby

Protocol: (s) - spoofing

Interface	Link	Protocol	Primary IP	Description
XGE1/0/1	DOWN	DOWN	--	
Loop0	UP	UP(s)	2.2.2.9	
NULL0	UP	UP(s)	--	
Vlan1	UP	DOWN	--	
Vlan999	UP	UP	192.168.1.42	

Brief information on interfaces in bridge mode:

Link: ADM - administratively down; Stby - standby

Speed: (a) - auto

Duplex: (a)/A - auto; H - half; F - full

Type: A - access; T - trunk; H - hybrid

```

Interface          Link Speed  Duplex Type PVID Description
XGE1/0/2          DOWN auto   A     A    1
XGE1/0/3          UP    100M(a) F(a)  A    1  aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

```

# Display brief information about Ten-GigabitEthernet 1/0/3, including the complete description of the interface.

```

<Sysname> display interface ten-gigabitethernet 1/0/3 brief description
Brief information on interfaces in bridge mode:
Link: ADM - administratively down; Stby - standby
Speed: (a) - auto
Duplex: (a)/A - auto; H - half; F - full
Type: A - access; T - trunk; H - hybrid
Interface          Link Speed  Duplex Type PVID Description
XGE1/0/3          UP    100M(a) F(a)  A    1  aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

```

# Display information about interfaces in DOWN state and the causes.

```

<Sysname> display interface brief down
Brief information on interfaces in route mode:
Link: ADM - administratively down; Stby - standby
Interface          Link Cause
XGE1/0/1          DOWN Not connected
Vlan2             DOWN Not connected

```

```

Brief information on interfaces in bridge mode:
Link: ADM - administratively down; Stby - standby
Interface          Link Cause
XGE1/0/2          DOWN Not connected

```

**Table 5 Command output**

Field	Description
Brief information on interfaces in route mode:	Brief information about Layer 3 interfaces.
Interface	Interface name.
Link	Physical link state of the interface: <ul style="list-style-type: none"> <li><b>UP</b>—The interface is physically up.</li> <li><b>DOWN</b>—The interface is physically down.</li> <li><b>ADM</b>—The interface has been shut down by using the <b>shutdown</b> command. To restore the physical state of the interface, use the <b>undo shutdown</b> command.</li> <li><b>Stby</b>—The interface is a backup interface in standby state.</li> </ul>
Protocol	Data link layer protocol state of the interface: <ul style="list-style-type: none"> <li><b>UP</b>—The data link layer protocol of the interface is up.</li> <li><b>DOWN</b>—The data link layer protocol of the interface is down.</li> <li><b>UP(s)</b>—The data link layer protocol of the interface is up, but the link is an on-demand link or does not exist. The <b>(s)</b> attribute represents the spoofing flag. This value is typical of null interfaces and loopback interfaces.</li> </ul>
Primary IP	Primary IP address of the interface. This field displays two hyphens (--) if the interface does not have an IP address.

Field	Description
Description	Description of the interface.
Brief information of interfaces in bridge mode:	Brief information about Layer 2 interfaces.
Type: A - access; T - trunk; H - hybrid	Link type options for interfaces.
Speed	Speed of the interface, in bps. This field displays the <b>(a)</b> flag next to the speed if the speed is automatically negotiated. This field displays <b>auto</b> if the interface is configured to autonegotiate its speed but the autonegotiation has not started.
Duplex	Duplex mode of the interface: <ul style="list-style-type: none"> <li>• <b>A</b>—Autonegotiation. The interface is configured to autonegotiate its duplex mode but the autonegotiation has not started.</li> <li>• <b>F</b>—Full duplex.</li> <li>• <b>F(a)</b>—Autonegotiated full duplex.</li> <li>• <b>H</b>—Half duplex.</li> <li>• <b>H(a)</b>—Autonegotiated half duplex.</li> </ul>
Type	Link type of the interface: <ul style="list-style-type: none"> <li>• <b>A</b>—Access.</li> <li>• <b>H</b>—Hybrid.</li> <li>• <b>T</b>—Trunk.</li> </ul>
PVID	Port VLAN ID.
Cause	Cause for the physical link state of an interface to be <b>DOWN</b> : <ul style="list-style-type: none"> <li>• <b>Administratively</b>—The interface has been manually shut down by using the <b>shutdown</b> command. To restore the physical state of the interface, use the <b>undo shutdown</b> command.</li> <li>• <b>DOWN ( Link-Aggregation interface down )</b>—The interface is a member port of an aggregate interface, and the aggregate interface is down.</li> <li>• <b>DOWN (Loopback detection down)</b>—The loopback detection module has detected loops.</li> <li>• <b>DOWN ( Monitor-Link uplink down )</b>—The monitor link module has detected that the uplink is down.</li> <li>• <b>MAD ShutDown</b>—The interface is on an IRF fabric placed by IRF MAD in Recovery state after an IRF split.</li> <li>• <b>Not connected</b>—No physical connection exists (possibly because the network cable is disconnected or faulty).</li> <li>• <b>Storm-Constrain</b>—The storm control feature has detected that unknown unicast traffic, multicast traffic, or broadcast traffic exceeded the upper threshold.</li> <li>• <b>STP DOWN</b>—The interface has been shut down by the BPDU guard feature.</li> <li>• <b>Port Security Disabled</b>—The interface has been shut down by the intrusion detection mechanism because the interface received illegal packets.</li> <li>• <b>OFF DOWN</b>—The interface has been shut down by OpenFlow.</li> <li>• <b>Standby</b>—The interface is a backup interface in standby state.</li> </ul>

## Related commands

**reset counters interface**

# display link-flap protection

Use **display link-flap protection** to display information about link flapping protection on an interface.

## Syntax

```
display link-flap protection [ interface interface-type [ interface-number ] ]
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Parameters

*interface-type*: Specifies an interface type. If you do not specify an interface type, the command displays information about link flapping protection on all interface.

*interface-number*: Specifies an interface number. If you do not specify an interface number, the command displays information about link flapping protection on all interfaces of the specified type.

## Examples

# Display information about link flapping protection on an interface.

```
<Sysname> display link-flap protection
Link-flap protection: Enabled
Interface          Link-flap  Status  Interval  Threshold
GE1/0/1           Enabled    Down    10         5
GE1/0/2           Disabled   N/A     --         --
```

**Table 6 Command output**

Field	Description
Link-flap protection	Status of link flapping protection on all interfaces: <ul style="list-style-type: none"><li>• <b>Enabled</b>—Link flapping protection is enabled on all interfaces.</li><li>• <b>Disabled</b>—Link flapping protection is disabled on all interfaces.</li></ul>
Link-flap	Status of link flapping protection on an interface: <ul style="list-style-type: none"><li>• <b>Enabled</b>—Link flapping protection is enabled on an interface.</li><li>• <b>Disabled</b>—Link flapping protection is disabled on an interface.</li></ul>
Status	Status of an interface: <ul style="list-style-type: none"><li>• <b>Down</b>—The interface has been shut down by the link flapping protection feature.</li><li>• <b>N/A</b>—The interface status is not affected by the link flapping protection feature.</li></ul>
Interval	Link flapping detection interval for an interface.
Threshold	Link flapping detection threshold for an interface.

## Related commands

**link-flap protect enable**

**port link-flap protect enable**

# display packet-drop

Use **display packet-drop** to display information about packets dropped on an interface.

## Syntax

```
display packet-drop { interface [ interface-type [ interface-number ] ] | summary }
```

## Views

Any view

## Predefined user roles

network-admin

network-operator

## Parameters

*interface-type*: Specifies an interface type.

*interface-number*: Specifies an interface number.

**summary**: Displays the summary of dropped packets on only interfaces that support this command.

## Usage guidelines

If you do not specify an interface type, this command displays information about dropped packets on only interfaces that support this command on the device.

If you specify an interface type but do not specify an interface number, this command displays information about dropped packets on only interfaces of the specified type that support this command.

When a QoS policy with a traffic policing or traffic filtering action is applied to the outbound direction of an interface, the following rules apply:

- The **display packet-drop** command output does not contain the packets dropped by traffic policing because bandwidth is insufficient.
- The **display packet-drop** command output does not contain the packets dropped by traffic filtering.

For more information about QoS policies, see *ACL and QoS Configuration Guide*.

## Examples

```
# Display information about dropped packets on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> display packet-drop interface ten-gigabitethernet 1/0/1
```

```
Ten-GigabitEthernet1/0/1:
```

```
  Packets dropped due to full GBP or insufficient bandwidth: 301
```

```
  Packets dropped due to Fast Filter Processor (FFP): 261
```

```
  Packets dropped due to STP non-forwarding state: 321
```

```
  Packets dropped due to insufficient data buffer. Input dropped: 0 Output dropped:0
```

```
# Display the summary of dropped packets on all interfaces.
```

```
<Sysname> display packet-drop summary
```

```
All interfaces:
```

```
  Packets dropped due to full GBP or insufficient bandwidth: 301
```

```
  Packets dropped due to Fast Filter Processor (FFP): 261
```

```
  Packets dropped due to STP non-forwarding state: 321
```

```
  Packets dropped due to insufficient data buffer. Input dropped: 0 Output dropped:0
```

**Table 7 Command output**

Field	Description
PEX in virtual slot	Virtual slot number of the PEX that the interface resides in.
PEX in virtual chassis	Virtual chassis number of the PEX that the interface resides in.
Packets dropped due to full GBP or insufficient bandwidth	Packets that are dropped because the buffer is used up or the bandwidth is insufficient.
Packets dropped due to Fast Filter Processor (FFP)	Packets that are filtered out.
Packets dropped due to STP non-forwarding state	Packets that are dropped because STP is in the non-forwarding state.
Packets dropped due to insufficient data buffer. Input dropped: 0 Output dropped:0	Inbound and outbound packets that are dropped due to insufficient data buffer.

## display priority-flow-control

Use **display priority-flow-control** to display the PFC information for an interface.

### Syntax

```
display priority-flow-control interface [ interface-type [ interface-number ] ]
```

### Views

Any view

### Predefined user roles

network-admin  
network-operator

### Parameters

**interface-type**: Specifies an interface type. If you do not specify an interface type, the command displays the PFC information for all Ethernet interfaces.

**interface-number**: Specifies an interface number. If you do not specify an interface number, the command displays the PFC information for all Ethernet interfaces of the specified type.

### Examples

# Display the PFC information for all Ethernet interfaces.

```
<Sysname> display priority-flow-control interface
Interface           AdminMode  OperMode  Dot1pList  Prio  Recv  Send
-----
XGE1/0/1           Auto       Disabled  0,2-3,5-6  0     178   43
```

**Table 8 Command output**

Field	Description
Interface	Abbreviated name of the interface.
AdminMode	Administrative PFC status: <ul style="list-style-type: none"> <li><b>Disabled</b>—PFC is disabled for the interface.</li> <li><b>Auto</b>—The interface is configured to autonegotiate the PFC status with the remote end.</li> </ul>

Field	Description
	<ul style="list-style-type: none"> <li><b>Enabled</b>—PFC is enabled for the interface.</li> </ul>
OperMode	Operative PFC status: <ul style="list-style-type: none"> <li><b>Disabled</b>—PFC is disabled.</li> <li><b>Enabled</b>—PFC is enabled.</li> </ul>
Dot1pList	802.1p priorities that are enabled with PFC. 802.1p priority values 0 through 7 are available.
Prio	An 802.1p priority is displayed only when the 802.1p priority is enabled with PFC and the interface has received or sent packets with the 802.1p priority.
Recv	Number of received PFC pause frames.
Send	Number of sent PFC pause frames.

## Related commands

**priority-flow-control**

**priority-flow-control no-drop dot1p**

## duplex

Use **duplex** to set the duplex mode for an Ethernet interface.

Use **undo duplex** to restore the default.

### Syntax

**duplex { auto | full | half }**

**undo duplex**

### Default

Ethernet interfaces operate in autonegotiation mode.

### Views

Ethernet interface view

### Predefined user roles

network-admin

### Parameters

**auto**: Configures the interface to autonegotiate the duplex mode with the peer.

**full**: Configures the interface to operate in full duplex mode. In this mode, the interface can receive and transmit packets simultaneously.

**half**: Configures the interface to operate in half duplex mode. In this mode, the interface can only receive or transmit packets at a given time. Fiber ports, 1000-Mbps Ethernet interfaces, and 10000-Mbps Ethernet interfaces do not support this keyword.

### Examples

# Configure Ten-GigabitEthernet 1/0/1 to operate in full duplex mode.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] duplex full
```

# flow-control

Use **flow-control** to enable TxRx-mode generic flow control on an Ethernet interface.

Use **undo flow-control** to disable TxRx-mode generic flow control on the Ethernet interface.

## Syntax

**flow-control**

**undo flow-control**

## Default

TxRx-mode generic flow control is disabled on an Ethernet interface.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Usage guidelines

With TxRx-mode generic flow control configured, an interface can both send and receive flow control frames:

- When congested, the interface sends a flow control frame to its peer.
- Upon receiving a flow control frame from the peer, the interface suspends sending packets.

To implement flow control on a link, enable generic flow control at both ends of the link.

This command and the **priority-flow-control no-drop dot1p** command are mutually exclusive.

## Examples

```
# Enable TxRx-mode generic flow control on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] flow-control
```

# flow-control receive enable

Use **flow-control receive enable** to enable Rx-mode generic flow control on an Ethernet port.

Use **undo flow-control** to disable Rx-mode generic flow control on an Ethernet port.

## Syntax

**flow-control receive enable**

**undo flow-control**

## Default

Rx-mode generic flow control is disabled on Ethernet interfaces.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Usage guidelines

With Rx-mode flow control enabled, an interface can receive but cannot send flow control frames.

- When the interface receives a flow control frame from its peer, it suspends sending packets to the peer.
- When traffic congestion occurs on the interface, it cannot send flow control frames to the peer.

To handle unidirectional traffic congestion on a link, configure the **flow-control receive enable** command at one end, and the **flow-control** command at the other. To enable both ends of the link to handle traffic congestion, configure the **flow-control** command at both ends.

This command and the **priority-flow-control no-drop dot1p** command are mutually exclusive.

## Examples

```
# Enable Rx-mode generic flow control on Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-ten-gigabitethernet 1/0/1] flow-control receive enable
```

## Related commands

**flow-control**

## flow-interval

Use **flow-interval** to set the statistics polling interval.

Use **undo flow-interval** to restore the default.

## Syntax

**flow-interval** *interval*

**undo flow-interval**

## Default

The statistics polling interval is 300 seconds.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*interval*: Sets the statistics polling interval in seconds. The interval is in the range of 5 to 300 and must be a multiple of 5.

## Examples

```
# Set the statistics polling interval to 100 seconds on Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] flow-interval 100
```

## interface

Use **interface** to enter interface view, create a subinterface and enter its view, or enter the view of an existing subinterface.

## Syntax

**interface** *interface-type* { *interface-number* | *interface-number.subnumber* }

## Views

System view

## Predefined user roles

network-admin

## Parameters

*interface-type*: Specifies an interface type.

*interface-number*: Specifies an interface number.

*interface-number.subnumber*: Specifies a subinterface number. The *interface-number* argument is an interface number. The *subnumber* argument is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

## Examples

# Enter the view of Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1]
```

# Create Ethernet subinterface Ten-GigabitEthernet 1/0/1.1 and enter its view.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1.1
[Sysname-Ten-GigabitEthernet1/0/1.1]
```

# jumboframe enable

Use **jumboframe enable** to allow jumbo frames within the specified length to pass through.

Use **undo jumboframe enable** to prevent jumbo frames from passing through.

## Syntax

**jumboframe enable** [ *size* ]

**undo jumboframe enable**

## Default

The device allows jumbo frames within 10000 bytes to pass through.

## Views

Layer 2 Ethernet interface view

Layer 3 Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*size*: Sets the maximum length (in bytes) of Ethernet frames that are allowed to pass through. The value range for this argument is 1536 to 10000.

## Usage guidelines

If you execute this command multiple times, the most recent configuration takes effect.

## Examples

# Allow jumbo frames to pass through Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] jumboframe enable
```

## link-delay

Use **link-delay** to set the physical state change suppression interval on an Ethernet interface.

Use **undo link-delay** to restore the default.

### Syntax

```
link-delay [ msec ] delay-time [ mode { up | updown } ]
```

```
undo link-delay [ msec ] delay-time [ mode { up | updown } ]
```

### Default

Each time the physical link of a port goes up or comes down, the interface immediately reports the change to the CPU.

### Views

Ethernet interface view

### Predefined user roles

network-admin

### Parameters

**msec**: Enables the physical state change suppression interval to be accurate to milliseconds. If you do not specify this keyword, the suppression interval is accurate to seconds.

*delay-time*: Sets the physical state change suppression interval on the Ethernet interface. A value of 0 means that physical state changes are immediately reported to the CPU and are not suppressed.

- If you do not specify the **msec** keyword, the value range is 0 to 30 seconds.
- If you specify the **msec** keyword, the value range is 0 to 10000 milliseconds, and the value must be a multiple of 100.

**mode up**: Suppresses the link-up events.

**mode updown**: Suppresses both the link-up and link-down events.

### Usage guidelines

You can configure this feature to suppress only link-down events, only link-up events, or both. If an event of the specified type still exists when the suppression interval expires, the system reports the event.

When you configure this feature, follow these guidelines:

- To suppress only link-down events, configure the **link-delay** [ msec ] *delay-time* command.
- To suppress only link-up events, configure the **link-delay** [ msec ] *delay-time* **mode up** command.
- To suppress both link-down and link-up events, configure the **link-delay** [ msec ] *delay-time* **mode updown** command.

On an interface, you can configure different suppression intervals for link-up and link-down events. If you configure the **link-delay** command multiple times for link-up or link-down events, the most recent configuration takes effect.

Do not configure this command on an interface that has RRPP, spanning tree protocols, or Smart Link enabled.

This command, the **dampening** command, and the **port link-flap protect enable** command are mutually exclusive on an Ethernet interface.

## Examples

```
# Set the link-down event suppression interval to 8 seconds on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] link-delay 8
```

```
# Set the link-up event suppression interval to 800 milliseconds on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] link-delay msec 800 mode up
```

## Related commands

**dampening**

**port link-flap protect enable**

## link-fault-signal enable

Use **link-fault-signal enable** to enable remote fault signal detection.

Use **undo link-fault-signal enable** to disable remote fault signal detection.

## Syntax

**link-fault-signal enable**

**undo link-fault-signal enable**

## Default

Remote fault signal detection is enabled.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Usage guidelines

Only fiber ports support this command.

## Examples

```
# Disable remote fault signal detection on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> system-view  
[Sysname] interface Ten-GigabitEthernet1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] undo link-fault-signal enable
```

## link-flap protect enable

Use **link-flap protect enable** to enable link flapping protection on all interfaces.

Use **undo link-flap protect enable** to disable link flapping protection on all interfaces.

## Syntax

**link-flap protect enable**

**undo link-flap protect enable**

## Default

Link flapping protection is disabled on all interfaces.

## Views

System view

## Predefined user roles

network-admin

## Usage guidelines

Link flapping on any interface changes network topology and increases the system overhead. For example, in an active/standby link scenario, when the interface status on the active link changes between **UP** and **DOWN**, traffic switches between active and standby links. To solve this problem, execute this command.

With link flapping protection enabled on an interface, when the interface goes down, the system enables link flapping detection on the interface. During the link flapping detection interval, if the number of detected flaps reaches or exceeds the link flapping detection threshold, the system shuts down the interface.

Link flapping protection takes effect only when it is enabled in both the system view and interface view.

## Examples

```
# Enable link flapping protection on all interfaces.
```

```
<Sysname> system-view  
[Sysname] link-flap protect enable
```

## Related commands

**port link-flap protect enable**

# loopback

---

### CAUTION:

After you enable loopback testing on an Ethernet interface, the interface does not forward data traffic.

---

Use **loopback** to enable loopback testing on an Ethernet interface.

Use **undo loopback** to disable loopback testing on an Ethernet interface.

## Syntax

```
loopback { external | internal }
```

```
undo loopback
```

## Default

Loopback testing is disabled on an Ethernet interface.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**external**: Enables external loopback testing on the Ethernet interface.

**internal**: Enables internal loopback testing on the Ethernet interface.

## Usage guidelines

After you enable loopback testing on an Ethernet interface, the Ethernet interface switches to full duplex mode. After you disable loopback testing, the Ethernet interface restores to its duplex setting.

An Ethernet interface in a loopback test cannot correctly forward data packets.

You cannot perform a loopback test on the following Ethernet interfaces:

- Ethernet interfaces manually brought down (displayed as in **ADM** or **Administratively DOWN** state).
- Ethernet interfaces configured with the **port up-mode** command.

The **speed**, **duplex**, **mdix-mode**, and **shutdown** commands cannot be configured on an Ethernet interface in a loopback test.

An Ethernet interface in a loopback test operates full duplex mode. The duplex mode is restored to the original configuration after the loopback test is complete.

## Examples

```
# Enable internal loopback testing on Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] loopback internal
```

# multicast-suppression

Use **multicast-suppression** to enable multicast storm suppression and set the multicast storm suppression threshold.

Use **undo multicast-suppression** to disable multicast storm suppression.

## Syntax

```
multicast-suppression { ratio | pps max-pps | kbps max-kbps } [ unknown ]
undo multicast-suppression
```

## Default

Ethernet interfaces do not suppress multicast traffic.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**ratio**: Sets the multicast suppression threshold as a percentage of the interface bandwidth. The value range for this argument (in percentage) is 0 to 100. A smaller value means that less multicast traffic is allowed to pass through.

**pps** *max-pps*: Specifies the maximum number of multicast packets that the interface can forward per second. The value range for the *max-pps* argument (in pps) is 0 to 1.4881 × the interface bandwidth.

**kbps** *max-kbps*: Specifies the maximum number of kilobits of multicast traffic that the Ethernet interface can forward per second. The value range for this argument (in kbps) is 0 to the interface bandwidth.

**unknown**: Enables multicast storm suppression only on unknown packets. If you do not specify this keyword, this command suppresses all multicast traffic.

## Usage guidelines

The multicast storm suppression feature limits the size of multicast traffic to a threshold on an interface. When the multicast traffic on the interface exceeds this threshold, the system drops packets until the traffic drops below this threshold.

Both the **storm-constrain** command and the **multicast-suppression** command can suppress multicast storms on a port. The **multicast-suppression** command uses the chip to physically suppress multicast traffic. It has less influence on the device performance than the **storm-constrain** command, which uses software to suppress multicast traffic.

For the traffic suppression result to be determined, do not configure both the **storm-constrain multicast** command and the **multicast-suppression** command on an interface.

When you configure the suppression threshold in kbps, the actual suppression threshold might be different from the configured one as follows:

- If the configured value is smaller than 64, the value of 64 takes effect.
- If the configured value is greater than 64 but not an integer multiple of 64, the integer multiple of 64 that is greater than and closest to the configured value takes effect.

To determine the suppression threshold that takes effect, see the prompts on the switch.

## Examples

```
# Set the multicast storm suppression threshold to 10000 kbps on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] multicast-suppression kbps 10000
```

```
The actual value is 10048 on port Ten-GigabitEthernet1/0/1 currently.
```

The output shows that the value that takes effect is 10048 kbps (157 times of 64), because the chip only supports step 64.

## Related commands

**broadcast-suppression**

**unicast-suppression**

## port link-flap protect enable

Use **port link-flap protect enable** to enable link flapping protection on an interface.

Use **undo port link-flap protect enable** to disable link flapping protection on an interface.

## Syntax

```
port link-flap protect enable [ interval interval | threshold threshold ] *
```

```
undo port link-flap protect enable [ interval | threshold ]
```

## Default

Link flapping protection is disabled on an interface.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*interval*: Specifies the link flapping detection interval in seconds. The value range for this argument is 10 to 60. The default value for this argument is 10.

*threshold*: Specifies the link flapping detection threshold in the range of 5 to 10. The default value for this argument is 5.

## Usage guidelines

Link flapping protection takes effect only when it is enabled in both the system view and interface view.

If you do not specify the **interval** *interval* or **threshold** *threshold* option when you execute the **port link-flap protect enable** command, the command uses the default settings.

If you specify the **interval** or **threshold** keyword when you execute the **undo port link-flap protect enable** command, the command restores the default setting for the keyword.

With link flapping protection enabled on an interface, when the interface goes down, the system enables link flapping detection on the interface. During the link flapping detection interval, if the number of detected flaps reaches or exceeds the link flapping detection threshold, the system shuts down the interface.

To bring up an interface that has been shut down by link flapping protection, execute the **undo shutdown** command.

This command, the **dampening** command, and the **link-delay** command are mutually exclusive on an Ethernet interface.

## Examples

# Enable link flapping protection on an interface. Set the link flapping detection interval to 10 seconds, and set the link flapping detection threshold to 5.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] port link-flap protect enable interval 10 threshold
5
```

## Related commands

**dampening**

**link-delay**

**link-flap protect enable**

## port link-mode

Use **port link-mode** to change the link mode of an Ethernet interface.

Use **undo port link-mode** to restore the default.

## Syntax

**port link-mode** { **bridge** | **route** }

**undo port link-mode**

## Default

Interfaces operate in bridge mode.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**bridge**: Specifies the Layer 2 mode.

**route:** Specifies the Layer 3 mode.

## Usage guidelines

Interfaces on the device can operate either as Layer 2 or Layer 3 Ethernet interfaces.

You can use commands to set the link mode to bridge or route.

Changing the link mode of an Ethernet interface also restores all commands (except **shutdown**) on the Ethernet interface to their defaults in the new link mode.

## Examples

```
# Configure Ten-GigabitEthernet 1/0/1 to operate in Layer 2 mode.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] port link-mode bridge
```

# priority-flow-control

Use **priority-flow-control** to enable PFC in auto mode or forcibly.

Use **undo priority-flow-control** to disable PFC.

## Syntax

```
priority-flow-control { auto | enable }
undo priority-flow-control
```

## Default

PFC is disabled on Ethernet interfaces.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**auto:** Specifies PFC in auto mode. In this mode, the local end automatically negotiates the PFC status with its peer.

**enable:** Forcibly enables PFC.

## Usage guidelines

When congestion occurs in the network, the local device notifies the peer to stop sending packets carrying the specified 802.1p priority if all of the following conditions exist:

- Both the local end and the remote end have PFC enabled.
- Both the local end and the remote end have the **priority-flow-control no-drop dot1p** command configured.
- The specified 802.1p priority is in the 802.1p priority list specified by the *dot1p-list* argument.
- The local end receives a packet carrying the specified 802.1p priority.

## Examples

```
# Enable PFC in auto mode on Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control auto
```

## Related commands

**display priority-flow-control**  
**priority-flow-control no-drop dot1p**

# priority-flow-control dot1p headroom

Use **priority-flow-control dot1p headroom** to set the headroom buffer threshold.

Use **undo priority-flow-control dot1p headroom** to restore the default.

## Syntax

**priority-flow-control dot1p *dot1p* headroom *headroom-number***  
**undo priority-flow-control dot1p *dot1p* headroom**

## Default

The headroom buffer threshold is 1000 for 10-GE interfaces and 4000 for 40-GE interfaces.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*dot1p*: Specifies an 802.1p priority (or dot1p priority) in the range of 0 to 7.

*headroom-number*: Specifies the headroom buffer threshold in the range of 1 to 4095.

## Usage guidelines

If you execute this command multiple times for the same 802.1p priority, the most recent configuration takes effect.

## Examples

```
# Set the headroom buffer threshold to 1000.  
<sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control dot1p 1 headroom 1000
```

# priority-flow-control dot1p ingress-buffer dynamic

Use **priority-flow-control dot1p ingress-buffer dynamic** to set the dynamic back pressure frame triggering threshold.

Use **undo priority-flow-control dot1p ingress-buffer** to restore the default.

## Syntax

**priority-flow-control dot1p *dot1p* ingress-buffer dynamic *ratio***  
**undo priority-flow-control dot1p *dot1p* ingress-buffer**

## Default

No dynamic back pressure frame triggering threshold is set.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*dot1p*: Specifies an 802.1p priority (or dot1p priority) in the range of 0 to 7.

*ratio*: Specifies the dynamic back pressure frame triggering threshold in percentage. The value range for this argument is 1 to 100.

## Usage guidelines

If you execute this command multiple times for the same 802.1p priority, the most recent configuration takes effect.

## Examples

# Set the dynamic back pressure frame triggering threshold to 30.

```
<sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control dot1p 1 ingress-buffer dynamic 30
```

# priority-flow-control dot1p ingress-buffer static

Use **priority-flow-control dot1p ingress-buffer static** to set the static back pressure frame triggering threshold.

Use **undo priority-flow-control dot1p ingress-buffer** to restore the default.

## Syntax

**priority-flow-control dot1p** *dot1p* **ingress-buffer static** *threshold*

**undo priority-flow-control dot1p** *dot1p* **ingress-buffer**

## Default

The static back pressure frame triggering threshold is 250 for 10-GE interfaces and 1000 for 40-GE interfaces.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*dot1p*: Specifies an 802.1p priority (or dot1p priority) in the range of 0 to 7.

*threshold*: Specifies the static back pressure frame triggering threshold in the range of 1 to 79872.

## Usage guidelines

If you execute this command multiple times for the same 802.1p priority, the most recent configuration takes effect.

## Examples

# Set the static back pressure frame triggering threshold to 1000.

```
<sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control dot1p 1 ingress-buffer static 1000
```

## priority-flow-control dot1p ingress-threshold-offset

Use **priority-flow-control dot1p ingress-threshold-offset** to set the back pressure frame stopping threshold.

Use **undo priority-flow-control dot1p ingress-threshold-offset** to restore the default.

### Syntax

**priority-flow-control dot1p** *dot1p* **ingress-threshold-offset** *offset-number*

**undo priority-flow-control dot1p** *dot1p* **ingress-threshold-offset**

### Default

The back pressure frame stopping threshold is 51 for 10-GE interfaces and 204 for 40-GE interfaces.

### Views

Ethernet interface view

### Predefined user roles

network-admin

### Parameters

*dot1p*: Specifies an 802.1p priority (or dot1p priority) in the range of 0 to 7.

*offset-number*: Specifies the back pressure frame stopping threshold in the range of 1 to 79872.

### Usage guidelines

If you execute this command multiple times for the same 802.1p priority, the most recent configuration takes effect.

### Examples

```
# Set the back pressure frame stopping threshold to 1000.  
<sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control dot1p 1  
ingress-threshold-offset 1000
```

## priority-flow-control dot1p reserved-buffer

Use **priority-flow-control dot1p reserved-buffer** to set the PFC reserved threshold.

Use **undo priority-flow-control dot1p reserved-buffer** to restore the default.

### Syntax

**priority-flow-control dot1p** *dot1p* **reserved-buffer** *reserved-number*

**undo priority-flow-control dot1p** *dot1p* **reserved-buffer**

### Default

The PFC reserved threshold is 15

### Views

Ethernet interface view

### Predefined user roles

network-admin

## Parameters

*dot1p*: Specifies an 802.1p priority (or dot1p priority) in the range of 0 to 7.

*reserved-number*: Specifies the PFC reserved threshold in the range of 1 to 79872.

## Usage guidelines

If you execute this command multiple times for the same 802.1p priority, the most recent configuration takes effect.

## Examples

```
# Set the PFC reserved threshold to 1000.
```

```
<sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control dot1p 1 reserved-buffer 1000
```

## priority-flow-control headroom

Use **priority-flow-control headroom** to set the maximum cell resources that can be used in a headroom storage space.

Use **undo priority-flow-control headroom** to restore the default.

## Syntax

```
priority-flow-control headroom headroom-number
```

```
undo priority-flow-control headroom
```

## Default

The maximum number of cell resources that can be used is 12288.

## Views

System view

## Predefined user roles

network-admin

## Parameters

*headroom-number*: Specifies the headroom buffer threshold in the range of 1 to 26624.

## Examples

```
# Set the headroom buffer threshold to 1000 for headroom.
```

```
<sysname> system-view
```

```
[Sysname] priority-flow-control poolID 1 headroom 1000
```

## priority-flow-control no-drop dot1p

Use **priority-flow-control no-drop dot1p** to enable PFC for 802.1p priorities.

Use **undo priority-flow-control no-drop dot1p** to disable PFC for the specified 802.1p priority.

## Syntax

```
priority-flow-control no-drop dot1p dot1p-list
```

```
undo priority-flow-control no-drop dot1p
```

## Default

PFC is disabled for all 802.1p priorities.

## Views

Ethernet interface view

## Predefined user roles

network-admin

## Parameters

*dot1p-list*: Specifies an 802.1p priority (or dot1p priority) list to identify flows that are subject to PFC (for example: 1,3-5). A hyphen (-) connects two numeric values, which together indicate a continuous value range. Different values or value ranges are separated with commas (.). You can configure up to 16 characters for this argument.

## Usage guidelines

When congestion occurs in the network, a packet is transmitted preferentially if both of the following conditions exist:

- Both the local end and the remote end have PFC enabled and have the **priority-flow-control no-drop dot1p** command configured.
- The 802.1p priority of the packet received on the local end is within the 802.1p priority list specified by the *dot1p-list* argument. For more information about the 802.1p priority, see *ACL and QoS Configuration Guide*.

If you configure the **flow control** or **flow-control receive enable** command on a PFC-enabled device or interface, the following events occur:

- The PFC configuration takes effect.
- The configuration of the **flow control** or **flow-control receive enable** command is ignored.
- The **flow control** or **flow-control receive enable** command takes effect on the device or interface only when PFC is disabled on it.

This command, the **flow-control** command, and the **flow-control receive enable** command are mutually exclusive.

## Examples

```
# Enable PFC in auto mode on Ten-GigabitEthernet 1/0/1, and enable PFC for 802.1p priority 5.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control auto
[Sysname-Ten-GigabitEthernet1/0/1] priority-flow-control no-drop dot1p 5
```

## Related commands

**display priority-flow-control**

**flow-control**

**flow-control receive enable**

**priority-flow-control**

# reset counters interface

Use **reset counters interface** to clear the interface statistics.

## Syntax

```
reset counters interface [ interface-type [ interface-number | interface-number.subnumber ] ]
```

## Views

User view

## Predefined user roles

network-admin

## Parameters

*interface-type*: Specifies an interface type.

*interface-number*: Specifies an interface number.

*interface-number.subnumber*: Specifies a subinterface number. The *interface-number* argument is an interface number. The *subnumber* argument is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

## Usage guidelines

Use this command to clear history statistics if you want to collect traffic statistics for a specific time period.

If you do not specify an interface type, this command clears statistics for all interfaces.

If you specify an interface type but do not specify an interface number, this command clears statistics for all interfaces of the specified type.

## Examples

# Clear the statistics for Ten-GigabitEthernet 1/0/1.

```
<Sysname> reset counters interface ten-gigabitethernet 1/0/1
```

## Related commands

**display counters interface**

**display counters rate interface**

**display interface**

# reset ethernet statistics

Use **reset ethernet statistics** to clear the Ethernet module statistics.

## Syntax

```
reset ethernet statistics [ slot slot-number ]
```

## Views

User view

## Predefined user roles

network-admin

## Parameters

**slot** *slot-number*: Specifies an IRF member device by its member ID. If you do not specify a member device, this command clears statistics for all IRF member devices.

## Examples

# Clear the Ethernet module statistics for the specified slot.

```
<Sysname> reset ethernet statistics slot 1
```

## Related commands

**display ethernet statistics**

# reset packet-drop interface

Use **reset packet-drop interface** to clear the dropped packet statistics for an interface.

## Syntax

```
reset packet-drop interface [ interface-type [ interface-number ] ]
```

## Views

User view

## Predefined user roles

network-admin

## Parameters

*interface-type*: Specify an interface type.

*interface-number*: Specify an interface number.

## Usage guidelines

If you do not specify an interface type, this command clears dropped packet statistics for all interfaces on the device.

If you specify an interface type but do not specify an interface number or subinterface number, the command clears dropped packet statistics for all interfaces of the specified type.

## Examples

```
# Clear dropped packet statistics for Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> reset packet-drop interface ten-gigabitethernet 1/0/1
```

```
# Clear dropped packet statistics for all interfaces.
```

```
<Sysname> reset packet-drop interface
```

## Related commands

```
display packet-drop
```

# shutdown

Use **shutdown** to shut down an Ethernet interface or subinterface.

Use **undo shutdown** to bring up an Ethernet interface or subinterface.

## Syntax

```
shutdown
```

```
undo shutdown
```

## Default

Ethernet interfaces and subinterfaces are in up state.

## Views

Ethernet interface view

Ethernet subinterface view

## Predefined user roles

network-admin

## Usage guidelines

Some interface configurations might require an interface restart before taking effect.

The **shutdown** and **port up-mode** commands are mutually exclusive.

The **shutdown** command cannot be configured on an interface in a loopback test.

## Examples

```
# Shut down and then bring up Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] shutdown
[Sysname-Ten-GigabitEthernet1/0/1] undo shutdown

# Shut down and then bring up Ten-GigabitEthernet 1/0/1.1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1.1
[Sysname-Ten-GigabitEthernet1/0/1.1] shutdown
[Sysname-Ten-GigabitEthernet1/0/1.1] undo shutdown
```

## speed

Use **speed** to set the speed of an Ethernet interface.

Use **undo speed** to restore the default.

### Syntax

```
speed { 10 | 100 | 1000 | 10000 | 40000 | 100000 | auto }
undo speed
```

### Default

An Ethernet interface negotiates a speed with its peer.

### Views

Ethernet interface view

### Predefined user roles

network-admin

### Parameters

**10**: Sets the interface speed to 10 Mbps.

**100**: Sets the interface speed to 100 Mbps.

**1000**: Sets the interface speed to 1000 Mbps.

**10000**: Sets the interface speed to 10000 Mbps.

**40000**: Sets the interface speed to 40000 Mbps.

**100000**: Sets the interface speed to 100000 Mbps.

**auto**: Enables the interface to negotiate a speed with its peer.

### Usage guidelines

For an Ethernet copper port, use the **speed** command to set its speed to match the speed of the peer interface.

For a fiber port, use the **speed** command to set its speed to match the rate of a transceiver module.

Support of an interface for the keywords depends on the interface type. For more information, use the **speed ?** command in interface view.

If a configured interface speed is not supported, the system prompts “The operation is not supported.”

Interfaces numbered 29 through 36 on the S6860-54HT switch can be only set to 10000 Mbps or configured to negotiate a speed with its peer. The negotiated speed can only be 10000 Mbps.

## Examples

```
# Configure Ten-GigabitEthernet 1/0/1 to autonegotiate the speed.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] speed auto
```

## unicast-suppression

Use **unicast-suppression** to enable unknown unicast storm suppression and set the unknown unicast storm suppression threshold.

Use **undo unicast-suppression** to disable unknown unicast storm suppression.

### Syntax

```
unicast-suppression { ratio | pps max-pps | kbps max-kbps }
undo unicast-suppression
```

### Default

Ethernet interfaces do not suppress unknown unicast traffic.

### Views

Ethernet interface view

### Predefined user roles

network-admin

### Parameters

**ratio**: Sets the unknown unicast suppression threshold as a percentage of the interface bandwidth. The value range for this argument (in percentage) is 0 to 100. A smaller value means that less unknown unicast traffic is allowed to pass through.

**pps** *max-pps*: Specifies the maximum number of unknown unicast packets that the interface can forward per second. The value range for the *max-pps* argument (in pps) is 0 to 1.4881 × the interface bandwidth.

**kbps** *max-kbps*: Specifies the maximum number of kilobits of unknown unicast traffic that the Ethernet interface can forward per second. The value range for this argument (in kbps) is 0 to the interface bandwidth.

### Usage guidelines

The unknown unicast storm suppression feature limits the size of unknown unicast traffic to a threshold on an interface. When the unknown unicast traffic on the interface exceeds this threshold, the system discards packets until the unknown unicast traffic drops below this threshold.

Both the **storm-constrain** command and the **unicast-suppression** command can suppress unknown unicast storms on a port. The **unicast-suppression** command uses the chip to physically suppress unknown unicast traffic. It has less influence on the device performance than the **storm-constrain** command, which uses software to suppress unknown unicast traffic.

For the unknown unicast traffic suppression result to be determined, do not configure both the **storm-constrain unicast** command and the **unicast-suppression** command on an interface.

When you configure the suppression threshold in kbps, the actual suppression threshold might be different from the configured one as follows:

- If the configured value is smaller than 64, the value of 64 takes effect.
- If the configured value is greater than 64 but not an integer multiple of 64, the integer multiple of 64 that is greater than and closest to the configured value takes effect.

To determine the suppression threshold that takes effect, see the prompts on the switch.

## Examples

```
# Set the unknown unicast storm suppression threshold to 10000 kbps on Ten-GigabitEthernet 1/0/1.
```

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] unicast-suppression kbps 10000
```

```
The actual value is 10048 on port Ten-GigabitEthernet1/0/1 currently.
```

The output shows that the value that takes effect is 10048 kbps (157 times of 64), because the chip only supports step 64.

## Related commands

**broadcast-suppression**

**multicast-suppression**

## using fortygige

In 10-GE breakout interface view, use **using fortygige** to combine 10-GE breakout interfaces split from a 40-GE interface into a 40-GE interface.

In 100-GE interface view, use **using fortygige** to split a 100-GE interface into three 40-GE interfaces.

## Syntax

**using fortygige**

## Default

The 10-GE breakout interfaces are not combined and operate as single interfaces. A 100-GE interface is not split into three 40-GE interfaces.

## Views

10-GE breakout interface view

100-GE interface view

## Predefined user roles

network-admin

## Usage guidelines

If you need higher bandwidth on a single interface, you can combine four 10-GE breakout interfaces split from a 40-GE interface into a 40-GE interface. To do so, execute this command on any of these 10-GE breakout interfaces.

If any 100-GE interface (interfaces 53 and 54 or interfaces 29 and 30) is configured as an IRF physical interface, the **using fortygige** command is not supported on the interface.

After executing this command, you do not need to reboot the device. To view information about the 40-GE interfaces, execute the **display interface brief** command.

## Examples

```
# Combine Ten-GigabitEthernet 1/0/1:1 through Ten-GigabitEthernet 1/0/1:4 into a 40-GE interface.
```

```
<System> system-view
```

```
[System] interface ten-gigabitethernet1/0/1:1
```

```
[System-Ten-GigabitEthernet1/0/1:1] using fortygige
The interfaces Ten-GigabitEthernet1/0/1:1 through Ten-GigabitEthernet1/0/1:4 will be
deleted. Continue? [Y/N]:y
```

# Split HundredGigE 1/0/53 into three 40-GE interfaces.

```
<System> system-view
[System] interface hundredgige 1/0/53
[System-HundredGigE1/0/53] using fortygige
The interface HundredGigE1/0/53 will be deleted. Continue? [Y/N]:y
```

## Related commands

**using tengige**

## using hundredgige

Use **using hundredgige** to combine three 40-GE interfaces into a 100-GE interface.

## Syntax

**using hundredgige**

## Default

40-GE interfaces are not combined and operate as single interfaces.

## Views

40-GE interface view

## Predefined user roles

network-admin

## Usage guidelines

If you need higher bandwidth on a single interface, you can combine three 40-GE interfaces into a 100-GE interface. By default, interfaces numbered 49 through 54 on this switch series are 40-GE interfaces and are divided into two groups. The interfaces numbered 49, 51, and 53 are in one group and the interfaces numbered 50, 52, and 54 are in the other group.

If any of the six highest-numbered 40-GE interfaces is split into four 10-GE interfaces, interfaces in the same group as the interface cannot be combined into a 100-GE interface.

If any of the six highest-numbered 40-GE interfaces is configured as an IRF physical interface, the **using hundredgige** command is not supported on any interface in the same group as the interface.

After executing this command, you do not need to reboot the device. To view information about the 100-GE interface, execute the **display interface brief** command.

## Examples

# Combine FortyGigE 1/0/49, FortyGigE 1/0/51, and FortyGigE1/0/53 into a 100-GE interface.

```
<Sysname> system-view
[Sysname] interface fortygige 1/0/49
[Sysname-FortyGigE1/0/49] using hundredgige
The interface FortyGigE1/0/49 FortyGigE1/0/51 and FortyGigE1/0/53 will be delete
d. Continue? [Y/N]:y
```

## Related commands

**using fortygige**

## using tengige

Use **using tengige** to split a high bandwidth interface into multiple 10-GE breakout interfaces.

### Syntax

**using tengige**

### Default

A high bandwidth interface is not split and operates as a single interface.

### Views

40-GE interface view

### Predefined user roles

network-admin

### Usage guidelines

To improve port density, reduce costs, and improve network flexibility, you can split a high bandwidth interface into multiple 10-GE breakout interfaces. For example, you can split a 40-GE interface FortyGigE 1/0/1 into four 10-GE breakout interfaces Ten-GigabitEthernet 1/0/1:1 through Ten-GigabitEthernet 1/0/1:4.

The 10-GE breakout interfaces support the same configuration and attributes as common 10-GE interfaces, except that they are numbered in a different way.

After executing this command, you do not need to reboot the device. To view information about the 10-GE breakout interfaces, execute the **display interface brief** command.

On this switch series, a 100-GE interface with a 40-GE transceiver module installed cannot be split into four 10-GE breakout interfaces.

### Examples

```
# Split FortyGigE 1/0/1 into four 10-GE breakout interfaces.
<System> system-view
[System] interface fortygige 1/0/1
[System-FortyGigE1/0/1] using tengige
The interface FortyGigE1/0/1 will be deleted. Continue? [Y/N]:y
```

### Related commands

**using fortygige**

## Layer 2 Ethernet interface commands

### display storm-constrain

Use **display storm-constrain** to display storm control settings and statistics.

### Syntax

**display storm-constrain** [ **broadcast** | **multicast** | **unicast** ] [ **interface** *interface-type* *interface-number* ]

### Views

Any view

### Predefined user roles

network-admin

network-operator

## Parameters

**broadcast:** Displays broadcast storm control settings and statistics.

**multicast:** Displays multicast storm control settings and statistics.

**unicast:** Displays unknown unicast storm control settings and statistics.

**interface** *interface-type interface-number*. Specifies an interface by its type and number. If you do not specify this option, the command displays storm control settings and statistics for all storm control-enabled interfaces.

## Usage guidelines

If you do not specify any keywords, this command displays all storm control settings on all storm control-enabled interfaces.

## Examples

# Display the storm control settings on all storm control-enabled ports.

```
<Sysname> display storm-constrain
Abbreviation: BC - broadcast; MC - multicast; UC - unicast
              FW - forwarding
Flow Statistic Interval: 5 (in seconds)
Port          Type Lower      Upper      Unit CtrlMode Status  Trap Log SwitchNum
-----
XGE1/0/1     MC   100       200       kbps shutdown shutdown off  on  10
```

**Table 9 Command output**

Field	Description
Flow Statistic Interval	Traffic polling interval (in seconds) of the storm control module.
Port	Abbreviated interface name.
Type	Type of traffic subjected to storm control: <ul style="list-style-type: none"><li>• <b>BC</b>—Broadcast packets.</li><li>• <b>MC</b>—Multicast packets.</li><li>• <b>UC</b>—Unknown unicast packets.</li></ul>
Lower	Lower storm control threshold, in pps, kbps, or percentage.
Upper	Upper storm control threshold, in pps, kbps, or percentage.
Unit	Storm control threshold unit: <ul style="list-style-type: none"><li>• pps.</li><li>• kbps.</li><li>• percentage.</li></ul>
CtrlMode	Action (block or shutdown) taken on the interface when the upper threshold is reached. N/A indicates that no action is configured.
Status	Packet forwarding status: <ul style="list-style-type: none"><li>• <b>forwarding</b>—The port is forwarding traffic correctly.</li><li>• <b>shutdown</b>—The port has been shut down.</li><li>• <b>block</b>—The port drops the type of traffic.</li></ul>
Trap	Status of the storm control threshold event trap switch: <ul style="list-style-type: none"><li>• <b>on</b>—The port sends threshold event traps.</li><li>• <b>off</b>—The port does not send threshold event traps.</li></ul>
Log	Status of the storm control threshold event log switch:

Field	Description
	<ul style="list-style-type: none"> <li><b>on</b>—The port sends threshold event log messages.</li> <li><b>off</b>—The port does not send threshold event log messages.</li> </ul>
SwitchNum	Number of forwarding state changes of the interface. When the <b>SwitchNum</b> field reaches 65535, it resets automatically.

## mdix-mode

### ⓘ IMPORTANT:

- Fiber ports do not support this command.
- A 10-GE interface supports only the **automdix** keyword.

Use **mdix-mode** to configure the Medium Dependent Interface Cross-Over (MDIX) mode of an Ethernet interface.

Use **undo mdix-mode** to restore the default.

### Syntax

**mdix-mode** { **automdix** | **mdi** | **mdix** }

**undo mdix-mode**

### Default

Ethernet interfaces operate in **automdix** mode.

### Views

Layer 2 Ethernet interface view

### Predefined user roles

network-admin

### Parameters

**automdix**: Specifies that the interface negotiates pin roles with its peer.

**mdi**: Specifies that pins 1 and 2 are transmit pins and pins 3 and 6 are receive pins.

**mdix**: Specifies that pins 1 and 2 are receive pins and pins 3 and 6 are transmit pins.

### Examples

```
# Configure Ten-GigabitEthernet 1/0/1 to operate in automdix mode.
```

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] mdix-mode automdix
```

## port bridge enable

Use **port bridge enable** to enable bridging on an Ethernet interface.

Use **undo port bridge enable** to disable bridging on an Ethernet interface.

### Syntax

**port bridge enable**

**undo port bridge enable**

## Default

Bridging is disabled on an Ethernet interface.

## Views

Layer 2 Ethernet interface view

## Predefined user roles

network-admin

## Usage guidelines

By default, the device drops packets whose outgoing interface and incoming interface are the same.

To enable the device to forward such packets rather than drop them, configure this command in Ethernet interface view. After the device receives a broadcast or unknown unicast packet, the device forwards the packet through all interfaces in the VLAN to which the incoming interface of the packet belongs.

Do not add interfaces configured with this command to an aggregation group.

## Examples

```
# Enable bridging on Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] port bridge enable
```

# port connection-distance

Use **port connection-distance** to set the interface connection distance.

Use **undo port connection-distance** to restore the default.

## Syntax

```
port connection-distance { 300 | 10000 | 20000 | 40000 }
undo port connection-distance
```

## Default

The interface connection distance is 10000 meters.

## Views

Layer 2 Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**300**: Sets the interface connection distance to 300 meters.

**10000**: Sets the interface connection distance to 10000 meters.

**20000**: Sets the interface connection distance to 20000 meters.

**40000**: Sets the interface connection distance to 40000 meters.

## Usage guidelines

When two directly connected interfaces communicate, they use the buffer area to buffer the received data. A longer interface connection distance requires a greater buffer area.

Configure this command to modify the buffer area size by setting the interface connection distance.

Configure this command based on the network conditions because the buffer area size is limited.

## Examples

```
# Sets the interface connection distance to 300 meters for Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
<Sysname> interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] port connection-distance 300
```

## port up-mode

Use **port up-mode** to forcibly bring up a fiber Ethernet port.

Use **undo port up-mode** to restore the default.

### Syntax

**port up-mode**

**undo port up-mode**

### Default

A fiber Ethernet port is not forcibly brought up. The physical state of a fiber port depends on the physical state of the fibers.

### Views

Ethernet interface view

### Predefined user roles

network-admin

### Usage guidelines

This command forcibly brings up a fiber Ethernet port and enables the port to forward packets unidirectionally over a single link. In this way, transmission links are well utilized.

Copper ports do not support this command.

The following operations on a fiber port will cause link updown events before the port finally stays up:

- Configure both the **port up-mode** command and the **speed** or **duplex** command.
- Install or remove fiber links or transceiver modules after you forcibly bring up the fiber port.

The **shutdown**, **port up-mode**, and **loopback** commands are mutually exclusive.

Do not use this feature on a fiber port connected to a copper cable.

## Examples

```
# Forcibly bring up fiber port Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] port up-mode
```

## storm-constrain

Use **storm-constrain** to enable storm control and set thresholds for broadcast, multicast, or unknown unicast packets on an Ethernet interface.

Use **undo storm-constrain** to disable storm control for broadcast, multicast, unknown unicast, or all types of traffic.

## Syntax

```
storm-constrain { broadcast | multicast | unicast } { pps | kbps | ratio } upperlimit lowerlimit  
undo storm-constrain { all | broadcast | multicast | unicast }
```

## Default

Traffic storm control is disabled.

## Views

Layer 2 Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**all**: Disables storm control for all types of traffic: broadcast, multicast, and unknown unicast.

**broadcast**: Enables or disables broadcast storm control.

**multicast**: Enables or disables multicast storm control.

**unicast**: Enables or disables unknown unicast storm control.

**pps**: Sets storm control thresholds in pps.

**kbps**: Sets storm control thresholds in kbps.

**ratio**: Sets storm control thresholds as a percentage of the transmission capacity of the interface.

*upperlimit*: Sets the upper threshold, in pps, kbps, or percentage.

- If you specify the **pps** keyword, the value range for the *upperlimit* argument is 0 to 1.4881 × the interface bandwidth.
- If you specify the **kbps** keyword, the value range for the *upperlimit* argument is 0 to the interface bandwidth.
- If you specify the **ratio** keyword, the value range for the *upperlimit* argument is 0 to 100.

*lowerlimit*: Sets the lower threshold, in pps, kbps, or percentage.

- If you specify the **pps** keyword, the value range for the *lowerlimit* argument is 0 to 1.4881 × the interface bandwidth.
- If you specify the **kbps** keyword, the value range for the *lowerlimit* argument is 0 to the interface bandwidth.
- If you specify the **ratio** keyword, the value range for the *lowerlimit* argument is 0 to 100.

## Usage guidelines

After you configure storm control for a type of traffic, the device collects the statistics for the type of traffic at the interval configured by using the **storm-constrain interval** command. When the type of traffic exceeds its upper threshold, the interface takes an action configured by using the **storm-constrain control** command.

The **storm-constrain**, **broadcast-suppression**, **multicast-suppression**, and **unicast-suppression** commands can suppress storms on an interface. The **broadcast-suppression**, **multicast-suppression**, and **unicast-suppression** commands use the chip to physically suppress traffic. They have less influence on the device performance than the **storm-constrain** command, which uses software to suppress traffic.

For the traffic suppression result to be determined, do not configure both storm control and storm suppression for the same type of traffic.

When configuring this command, make sure *upperlimit* is greater than *lowerlimit*.

## Examples

# Enable unknown unicast storm control on Ten-GigabitEthernet 1/0/1 and set the upper and lower thresholds to 200 pps and 150 pps, respectively.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] storm-constrain unicast pps 200 150
```

# Enable broadcast storm control on Ten-GigabitEthernet 1/0/2, and set the upper and lower thresholds to 2000 kbps and 1500 kbps, respectively.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/2
[Sysname-Ten-GigabitEthernet1/0/2] storm-constrain broadcast kbps 2000 1500
```

# Enable multicast storm control on Ten-GigabitEthernet 1/0/3, and set the upper and lower thresholds to 80% and 15%, respectively.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/3
[Sysname-Ten-GigabitEthernet1/0/3] storm-constrain multicast ratio 80 15
```

## Related commands

**storm-constrain control**  
**storm-constrain interval**

# storm-constrain control

Use **storm-constrain control** to set the action to take on an Ethernet interface when a type of traffic (unknown unicast, multicast, or broadcast) exceeds the upper storm control threshold.

Use **undo storm-constrain control** to restore the default.

## Syntax

```
storm-constrain control { block | shutdown }
undo storm-constrain control
```

## Default

No action is taken on an Ethernet interface when a type of traffic exceeds the upper storm control threshold.

## Views

Layer 2 Ethernet interface view

## Predefined user roles

network-admin

## Parameters

**block**: Blocks this type of traffic and forwards other types of traffic. Even though the interface does not forward the blocked traffic, it still counts the traffic. When the blocked traffic drops below the lower threshold, the port begins to forward the traffic.

**shutdown**: Goes down automatically. The interface goes down automatically and stops forwarding any traffic. When the blocked traffic drops below the lower threshold, the interface does not forward the traffic. To bring up the interface, use the **undo shutdown** command or disable storm control on the interface.

## Examples

```
# Configure Ten-GigabitEthernet 1/0/1 to block a specific type of traffic when the type of traffic exceeds the upper storm control threshold.
```

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] storm-constrain control block
```

## Related commands

**storm-constrain**

**storm-constrain control**

## storm-constrain enable log

Use **storm-constrain enable log** to enable an Ethernet interface to output log messages when it detects storm control threshold events.

Use **undo storm-constrain enable log** to disable an Ethernet interface from outputting log messages for storm control threshold events.

## Syntax

**storm-constrain enable log**

**undo storm-constrain enable log**

## Default

An Ethernet interface outputs log messages when monitored traffic exceeds the upper threshold or drops below the lower threshold.

## Views

Layer 2 Ethernet interface view

## Predefined user roles

network-admin

## Examples

```
# Enable Ten-GigabitEthernet 1/0/1 to output log messages when it detects storm control threshold events.
```

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] storm-constrain enable log
```

## storm-constrain enable trap

Use **storm-constrain enable trap** to enable an Ethernet interface to send storm control threshold event traps.

Use **undo storm-constrain enable trap** to disable an Ethernet interface from sending storm control threshold event traps.

## Syntax

**storm-constrain enable trap**

**undo storm-constrain enable trap**

## Default

An interface sends out storm control threshold event traps when monitored traffic exceeds the upper threshold or drops below the lower threshold.

## Views

Layer 2 Ethernet interface view

## Predefined user roles

network-admin

## Examples

```
# Enable Ten-GigabitEthernet 1/0/1 to send traps when it detects storm control threshold events.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] storm-constrain enable trap
```

# storm-constrain interval

Use **storm-constrain interval** to set the traffic polling interval of the storm control module.

Use **undo storm-constrain interval** to restore the default.

## Syntax

**storm-constrain interval** *interval*

**undo storm-constrain interval**

## Default

The storm control module polls traffic statistics every 10 seconds.

## Views

System view

## Predefined user roles

network-admin

## Parameters

*interval*: Sets the traffic polling interval of the storm control module. The value range is 1 to 300 seconds. To ensure network stability, as a best practice, do not use a traffic polling interval shorter than 10 seconds.

## Usage guidelines

The traffic polling interval set by using the **storm-constrain interval** command is specific to storm control. To set the statistics polling interval of an interface, use the **flow-interval** command.

## Examples

```
# Set the traffic statistics polling interval of the storm control module to 60 seconds.
<Sysname> system-view
[Sysname] storm-constrain interval 60
```

## Related commands

**storm-constrain**

**storm-constrain control**

# virtual-cable-test

## ❗ IMPORTANT:

This command is not available on fiber ports.

Use **virtual-cable-test** to test the cable connection of an Ethernet interface and display the test result.

## Syntax

**virtual-cable-test**

## Views

Layer 2 Ethernet interface view

## Predefined user roles

network-admin

## Usage guidelines

If the link of an Ethernet interface is up, testing its cable connection will cause the link to go down and then up.

The test result is for reference only. The cable length detection error is up to 5 m (about 16 ft).

If a test item is not available, a hyphen (-) is displayed.

## Examples

```
# Test the cable connection of Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] virtual-cable-test
Cable status: abnormal(open), 140 metre(s)
Pair Impedance mismatch: -
Pair skew: - ns
Pair swap: -
Pair polarity: -
Insertion loss: - db
Return loss: - db
Near-end crosstalk: - db
```

**Table 10 Command output**

Field	Description
Cable status	Cable status: <ul style="list-style-type: none"><li>• <b>Normal</b>—The cable is in good condition.</li><li>• <b>Abnormal</b>—The cable is abnormal.</li><li>• <b>Abnormal (open)</b>—An open circuit is detected.</li><li>• <b>Abnormal (short)</b>—A short circuit is detected.</li><li>• <b>Failure</b>—The test failed.</li></ul>
<i>n</i> metre(s)	If the cable connection is working correctly, this field displays the total length of the cable. If the cable connection fails, this field displays the length from the local port to the faulty point.

# Layer 3 Ethernet interface or subinterface commands

## mac-address

Use **mac-address** to set the MAC address of an Ethernet interface.

Use **undo mac-address** to restore the default.

### Syntax

**mac-address** *mac-address*

**undo mac-address**

### Default

No MAC address is set for a Layer 3 Ethernet interface.

### Views

Layer 3 Ethernet interface view

Layer 3 Ethernet subinterface view

### Predefined user roles

network-admin

### Parameters

*mac-address*: Specifies a MAC address in the format of H-H-H.

### Usage guidelines

When you set a MAC address for a Layer 3 Ethernet subinterface, select a MAC address different from that of the main interface.

Do not set a VRRP-reserved MAC address for a Layer 3 Ethernet subinterface.

This command cannot be executed on Layer 3 Ethernet interfaces or subinterfaces of border gateways in VXLAN IP gateway and EVPN gateway networks.

MAC addresses from the bridge MAC address of the device to the bridge MAC address plus 169 are reserved MAC addresses of the device. To avoid transmission failure, do not set the MAC address of an Ethernet interface or subinterface to a reserved MAC address of the device. To avoid transmission failure after IRF master/subordinate switchover, do not set the MAC address of an Ethernet interface or subinterface to a reserved MAC address of an IRF member device. For more information about IRF bridge MAC addresses, see IRF in *Virtual Technologies Configuration Guide*.

### Examples

```
# Set the MAC address of Ten-GigabitEthernet 1/0/1 to 0001-0001-0001.
```

```
<Sysname> system-view
```

```
[Sysname] interface ten-gigabitethernet 1/0/1
```

```
[Sysname-Ten-GigabitEthernet1/0/1] mac-address 1-1-1
```

## mtu

Use **mtu** to set the MTU for an Ethernet interface or subinterface.

Use **undo mtu** to restore the default.

## Syntax

**mtu** *size*  
**undo mtu**

## Default

The MTU of an Ethernet interface or subinterface is 1500 bytes.

## Views

Layer 3 Ethernet interface view  
Layer 3 Ethernet subinterface view

## Predefined user roles

network-admin

## Parameters

*size*: Sets the MTU in bytes. The value range for this argument is 128 to 9008.

## Usage guidelines

The MTU configured on an interface takes effect only on packets sent to the CPU for software forwarding. Configure the MTU as appropriate for interfaces in the network to avoid fragmentation.

If an interface supports both the **mtu** and **ip mtu** commands, the device fragments an IPv4 packet based on the MTU set by using the **ip mtu** command. For more information about the **ip mtu** command, see *Layer 3—IP Services Command Reference*.

## Examples

```
# Set the MTU to 1430 bytes for Ten-GigabitEthernet 1/0/1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] mtu 1430

# Set the MTU to 1430 bytes for Ten-GigabitEthernet 1/0/1.1.
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1.1
[Sysname-Ten-GigabitEthernet1/0/1.1] mtu 1430
```

## traffic-statistic enable

Use **traffic-statistic enable** to enable packet statistics collection for an Ethernet subinterface.

Use **undo traffic-statistic enable** to disable packet statistics collection for an Ethernet subinterface.

## Syntax

**traffic-statistic enable**  
**undo traffic-statistic enable**

## Default

Packet statistics collection is disabled for an Ethernet subinterface.

## Views

Layer 3 Ethernet subinterface view

## Predefined user roles

network-admin

## Usage guidelines

This command is resource intensive. The system becomes busy and the CPU usage increases when you enable this feature on a large number of Ethernet subinterfaces or set a shorter interval by using the **flow-interval** command.

A Layer 3 Ethernet subinterface with this command configured cannot act as a VXLAN tunnel outgoing interface.

You can use the **display interface** or **display counters** command to display the packet statistics of Ethernet subinterfaces. The **Input** and **Output** fields in the **display interface** command output display the subinterface packet statistics.

To associate a Layer 3 Ethernet subinterface with a VPN instance, make sure a minimum of one of the following conditions is met:

- The Layer 3 aggregate interface and VLAN interface with the same number as the Layer 3 Ethernet subinterface are associated with the VPN instance.
- Packet statistics collection is enabled on the Layer 3 Ethernet subinterface.

For more information about Layer 3 aggregate subinterfaces and VLAN interfaces, see Ethernet link aggregation configuration and VLAN configuration in *Layer 2—LAN Switching Configuration Guide*. For more information about associating an interface with a VPN instance, see MPLS L3VPN configuration and MCE configuration in *MPLS Configuration Guide*.

## Examples

```
# Enable packet statistics collection for GigabitEthernet 1/0/1.1.  
<Sysname> system-view  
[Sysname] interface gigabitethernet 1/0/1.1  
[Sysname-GigabitEthernet1/0/1.1] traffic-statistic enable
```

## Related commands

**display counters**

**display interface**