HP 12500 Routing Switch Series

Interface

Command Reference

Part number: 5998-3423
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Legal and notice information

Contents

Ethernet interface commands

- A switch operating in standard mode does not support Layer 3 Ethernet interfaces, Layer 3 Ethernet subinterfaces, Layer 3 aggregate interfaces, or Layer 3 aggregate subinterfaces. For more information about the system operating mode commands, see *Fundamentals Command Reference*.
- When enhanced IRF is enabled on a switch operating in IRF mode, you cannot create Layer 3 Ethernet interfaces, Layer 3 Ethernet subinterfaces, Layer 3 aggregate interfaces, or Layer 3 aggregate subinterfaces on the switch. For more information about IRF, see *IRF Configuration Guide*.

Common Ethernet interface commands

default

Use **default** to restore the default settings for an Ethernet interface or subinterface.

Syntax

default

Views

Ethernet interface view, Ethernet subinterface view

Predefined user roles

network-admin

mdc-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 for reasons such as command dependencies and system restrictions. Use the **display this** command in interface view to identify these commands, and then use their **undo** forms or follow the command reference to individually restore their default settings. If your restoration attempt still fails, follow the error message instructions to resolve the problem.

Examples

Restore the default settings for interface GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] default
```

Restore the default settings for Layer 3 subinterface GigabitEthernet 3/0/1.1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1.1
[Sysname-GigabitEthernet3/0/1.1] default
```

description

Use **description** to change 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, **GigabitEthernet3/0/1 Interface**).

Views

Ethernet interface view, Ethernet subinterface view

Predefined user roles

network-admin

mdc-admin

Parameters

text: Specifies the interface description, a case-sensitive string of 1 to 80 characters.

Examples

Change the description of interface GigabitEthernet 3/0/1 to **lanswitch-interface**.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] description lanswitch-interface
```

Change the description of Ethernet subinterface GigabitEthernet 3/0/1.1 to **l2-subinterface3/0/1.1**.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1.1
[Sysname-GigabitEthernet3/0/1.1] description l2-subinterface3/0/1.1
```

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

mdc-admin

mdc-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, where *interface-number* is a main interface (which must be a Layer 3 Ethernet interface) number, and *subnumber* 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 the **flow-interval** command.

To clear the Ethernet interface traffic statistics, use the **reset counters interface** command. For more information, see "reset counters interface."

If no interface type is specified, this command displays traffic statistics for all interfaces that have traffic counters.

If an interface type is specified but no interface number or subinterface number is specified, this command displays traffic statistics for all interfaces of the specified type.

If an interface type and an interface number or subinterface number are specified, this command displays traffic statistics of the specified interface or subinterface.

Examples

Display inbound traffic statistics for all GigabitEthernet interfaces.

```
<Sysname> display counters inbound interface GigabitEthernet
Interface            Total (pkts)    Broadcast (pkts)    Multicast (pkts)  Err (pkts)
GE3/0/1                       100                 100                   0           0
GE3/0/2                         0                   0                   0           0
GE3/0/3                  Overflow            Overflow            Overflow    Overflow
GE3/0/4                         0                   0                   0           0
......

 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.

Field	Description
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 **Overflow** if any of the following cases applies: • The data length of an **Err** field value is greater than 7 decimal digits. • The data length of a non-Err field value is greater than 14 decimal digits.
--: 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 of interfaces in up state over the last 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

mdc-admin

mdc-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, where *interface-number* is a main interface (which must be a Layer 3 Ethernet interface) number, and *subnumber* is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

Usage guidelines

The statistics cover only interfaces in up state.

If an interface type is specified, the command displays traffic rate statistics for all up interfaces of the specified type over the last statistics polling interval.

If no interface type is specified, the command displays traffic rate statistics for all up interfaces that have traffic counters over the last statistics polling interval.

If an interface which is always down over the last statistics polling interval is specified, the system prompts that the interface does not support the command.

You can use the **flow-interval** command to set the statistics polling interval.

Examples

Display the inbound traffic rate statistics for all GigabitEthernet interfaces.

```
<Sysname> display counters rate inbound interface gigabitethernet
Interface               Total (pps)       Broadcast (pps)       Multicast (pps)
GE3/0/1                         200                   100                   100
GE3/0/2                         300                   200                   100
GE3/0/3                         300                   200                   100
......

 Overflow: More than 14 digits.
       --: Not supported.
```

Table 2 Command output

Field	Description
Interface	Abbreviated interface name.
Total (pkts/sec)	Average rate (in pps) of receiving or sending packets during the statistics polling interval.
Broadcast (pkts/sec)	Average rate (in pps) of receiving or sending broadcast packets during the statistics polling interval.
Multicast (pkts/sec)	Average rate (in pps) of receiving or sending multicast packets during the statistics polling interval.
Overflow: more than 14 decimal digits	The command displays **Overflow** 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 interface

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

Syntax

display interface [*interface-type* [*interface-number* | *interface-number.subnumber*]]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

interface-type: Specifies an interface type.

interface-number: Specifies an interface number.

interface-number.subnumber: Specifies a subinterface number, where *interface-number* is a main interface (which must be a Layer 3 Ethernet interface) number, and *subnumber* is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

Usage guidelines

If no interface type is specified, this command displays information about all interfaces.

If an interface type is specified but no interface number or subinterface number is specified, this command displays information about all interfaces of that type.

If both the interface type and interface number are specified, this command displays information about the specified interface.

Examples

Display information about Layer 3 interface GigabitEthernet 3/0/1.

```
<Sysname> display interface GigabitEthernet 3/0/1
GigabitEthernet3/0/1 current state: DOWN
Line protocol current state: DOWN
Description: GigabitEthernet3/0/1 Interface
The Maximum Transmit Unit is 100, Hold timer is 10(sec)
Internet protocol processing: disabled
IP Packet Frame Type:PKTFMT_ETHNT_2, Hardware Address: 0001-0001-0001
IPV6 Packet Frame Type:PKTFMT_ETHNT_2, Hardware Address: 0001-0001-0001
Media type is twisted pair, Port hardware type is 1000_BASE_T
Port priority: 2
 Loopback is not set
 Unknown-speed mode, Unknown-duplex mode
 Last 300 seconds input:  0 packets/sec 0 bytes/sec  0
 Last 300 seconds output: 0 packets/sec 0 bytes/sec  0
 Input  (total): 0 packets, 0 bytes
          0 broadcasts, 0 multicasts, - pauses
 Input  (normal): 0 packets, 0 bytes
          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 broadcasts, 0 multicasts, - pauses
 Output  (normal): 0 packets, 0 bytes
          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
Peak value of input: 0 bytes/sec, at 2011-12-23 09:05:58
Peak value of output: 0 bytes/sec, at 2011-12-23 09:05:58
```

Table 3 Command output

Field	Description
GigabitEthernet3/0/1 current state	State of the interface: • **Administratively DOWN**—The Ethernet interface was shut down with the **shutdown** command. The interface is administratively down. • **DOWN**—The Ethernet interface is administratively up but physically down (possibly because no physical link is present or the link has failed). • **UP**—The Ethernet interface is both administratively and physically up.
Line protocol current state	Link layer state of the interface. The state is determined through parameter negotiation on the link layer.
Hold timer is	Link-up or link-down event suppression interval.
Internet protocol processing: disabled	Indicates that the interface cannot process IP packets.
Media type	Physical media type of the interface: • twisted pair • optical fiber
Loopback is set internal	An internal loopback test is running on the Ethernet interface.
Loopback is not set	No loopback test is running on the Ethernet interface.
Unknown-speed mode	The speed of the interface is unknown, because the speed negotiation fails or the interface is not physically connected.
Unknown-duplex mode	The duplex mode of the interface is unknown, because the duplex mode negotiation fails or the interface is not physically connected.
Last 300 seconds input rate	Average input rate over the last 300 seconds in Bps, bps, and pps. You can use the **flow-interval** command to set the statistics polling interval.
Last 300 seconds output rate	Average output rate over the last 300 seconds in Bps, bps, and pps. You can use the **flow-interval** command to set the statistics polling interval.
Input (total): Input (normal): Input: Output (total): Output (normal): Output:	Statistics about input/output packets and errors. For more information, see Table 4. A hyphen (-) indicates that the statistical item is not supported.

Field	Description
Peak value of input	Peak rate of inbound traffic in Bps, and the time when the peak inbound traffic rate occurred.
Peak value of output	Peak rate of outbound traffic in Bps, and the time when the peak outbound traffic rate occurred.

Display detailed information about Layer 2 interface GigabitEthernet 3/0/1.

```
<Sysname> display interface GigabitEthernet 3/0/1
GigabitEthernet3/0/1 current state: DOWN
Line protocol current state: DOWN
IP Packet Frame Type: PKTFMT_ETHNT_2, Hardware Address: 000c-2963-b767
Description: GigabitEthernet3/0/1 Interface
Loopback is not set
Media type is twisted pair, Port hardware type is 1000_BASE_T
1000Mbps-speed mode, full-duplex mode
Link speed type is autonegotiation, link duplex type is autonegotiation
Flow-control is not enabled
The Maximum Frame Length is 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 Vlan:   none
 UnTagged Vlan: 1
Port priority: 2
Last clearing of counters: Never
 Peak value of input: 0 bytes/sec, at 2000-01-01 00:00:00
 Peak value of output: 0 bytes/sec, at 2000-01-01 00:00:00
 Last 300 seconds input:  0 packets/sec 0 bytes/sec 0%
 Last 300 seconds 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
```

Table 4 Command output

Field	Description
GigabitEthernet3/0/1 current state	State of the Ethernet interface: • **Administratively DOWN**—The Ethernet interface was shut down with the **shutdown** command. The interface is administratively down. • **DOWN**—The Ethernet interface is administratively up but physically down (possibly because no physical link is present or the link has failed). • **UP**—The Ethernet interface is both administratively and physically up.
Line protocol current state	Link layer state of the interface. The state is determined through parameter negotiation on the link layer.
IP Packet Frame Type	Ethernet framing format. **PKTFMT_ETHNT_2** indicates that the frames are encapsulated in Ethernet II framing format.
Hardware address	MAC address of the interface.
Loopback is set internal	An internal loopback test is running on the Ethernet interface.
Loopback is not set	No loopback test is running on the Ethernet interface.
Media type	Physical media type of the interface: • twisted pair • optical fiber
10Mbps-speed mode	The interface is operating at 10 Mbps.
100Mbps-speed mode	The interface is operating at 100 Mbps.
1000Mbps-speed mode	The interface is operating at 1000 Mbps.
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.
full-duplex mode	The interface is operating in full duplex mode.
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 **speed auto** command.
Link speed type is force link	The interface is configured with a specific speed, for example, 10 Mbps or 100 Mbps, by using the **speed** command.
link duplex type is autonegotiation	The interface is configured with the **duplex auto** command.
link duplex type is force link	The interface is configured with a specific duplex mode, for example, half or full, by using the **duplex** command.
Flow-control is not enabled	Flow control is not enabled on the interface.
The Maximum Frame Length	Maximum Ethernet frame length allowed on the interface.
Allow jumbo frame to pass	The interface allows jumbo frames to pass through.

Field	Description
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-	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 Ethernet interface.
Mdi type	Cable type (depending on your configuration): • **automidx**. • **mdi**. • **mdix**.
Port link-type	Link type of the interface (depending on your configuration): • access. • trunk. • hybrid.
Tagged VLAN ID	VLANs for which the interface sends packets without removing VLAN tags.
Untagged VLAN ID	VLANs for which the interface sends packets after removing VLAN tags.
Port priority	Priority of the interface.
Last clearing of counters: Never	Time when the **reset counters interface** command was last used to clear statistics on the interface. **Never** indicates that the **reset counters interface** command was never used since the device was started.
Peak value of input	Peak rate of inbound traffic in Bps, and the time when the peak inbound traffic rate occurred.
Peak value of output	Peak rate of outbound traffic in Bps, and the time when the peak outbound traffic rate occurred.
Last 300 seconds input: 0 packets/sec 0 bytes/sec -% Last 300 seconds output: 0 packets/sec 0 bytes/sec -%	Average rate of inbound and outbound traffic in the last 300 seconds, in pps and Bps, and the ratio of the actual rate to the maximum interface rate. A hyphen (-) indicates that the statistical item is not supported.
Input(total): 0 packets, 0 bytes 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses	Inbound traffic statistics (in packets and bytes) for the interface. All inbound normal and abnormal packets and normal pause frames were counted. Number of inbound unicast packets, number of inbound broadcasts, number of inbound multicasts, and number of inbound pause frames. A hyphen (-) indicates that the statistical item is not supported.

Field	Description
Input(normal): 0 packets, 0 bytes 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses	Inbound normal traffic and pause frame statistics (in packets and bytes) for the interface. Number of inbound normal unicast packets, number of inbound normal broadcasts, number of inbound normal multicasts, and number of inbound normal pause frames. A hyphen (-) indicates that the statistical item is not supported.
input errors	Number of inbound packets with errors.
runts	Number of inbound frames shorter than 64 bytes, in correct format, and containing valid CRCs.
giants	Number of inbound frames larger than the maximum frame length supported on the interface. • For an Ethernet interface that does not permit jumbo frames, giants refer to frames larger than 1518 bytes (without VLAN tags) or 1522 bytes (with VLAN tags). • For an Ethernet interface that permits jumbo frames, giants refer to frames larger than the maximum length of Ethernet frames that are allowed to pass through, which is configured when you configure jumbo frame support on the interface.
throttles	Number of times the port is shut down due to buffer or CPU overload.
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	Total number of illegal inbound packets: • **Fragment frames**—CRC error frames shorter than 64 bytes. The length can be an integral or non-integral value. • **Jabber frames**—CRC error frames greater than the maximum frame length supported on the Ethernet interface (with an integral or non-integral length). For an Ethernet interface that does not permit jumbo frames, jabber frames refer to CRC error frames greater than 1518 bytes (without VLAN tags) or 1522 bytes (with VLAN tags). For an Ethernet interface that permits jumbo frames, jabber frames refer to CRC error frames greater than the maximum length of Ethernet frames that are allowed to pass through the interface (which is configured when you configure jumbo frame support on the interface). • **Symbol error frames**—Frames that contained at least one undefined symbol. • **Unknown operation code frames**—Non-pause MAC control frames. • **Length error frames**—Frames whose 802.3 length fields did not match the actual frame length (46 to 1500 bytes).

Field	Description
ignored	Number of inbound frames dropped because the receive 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	Outbound traffic statistics (in packets and bytes) for the interface. All outbound normal and abnormal packets and normal pause frames were counted. Number of outbound unicast packets, number of outbound broadcasts, number of outbound multicasts, and number of outbound pause frames. A hyphen (-) indicates that the statistical item is not supported.
Output(normal): 0 packets, 0 bytes 0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses	Outbound normal traffic and pause frame statistics (in packets and bytes) for the interface. Number of outbound normal unicast packets, number of outbound normal broadcasts, number of outbound normal multicasts, and number of outbound normal pause frames. 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 transmit 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.

Related commands

reset counters interface

display interface brief

Use **display interface brief** to display brief Ethernet interface information.

Syntax

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

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

interface-type: Specifies an interface type.

interface-number: Specifies an interface number.

interface-number.subnumber: Specifies a subinterface number, where *interface-number* is a main interface (which must be a Layer 3 Ethernet interface) number, and *subnumber* is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

description: Displays the full description of the specified interface. If the keyword is not specified, the command displays at most the first 27 characters of the interface description. If the keyword is specified, the command displays all characters of the interface description.

Usage guidelines

If no interface type is specified, this command displays information about all interfaces.

If an interface type is specified but no interface number or subinterface number is specified, this command displays information about all interfaces of that type.

If both the interface type and interface number are specified, this command displays information about the specified interface.

Examples

Display brief information about all interfaces.

```
<Sysname> display interface brief
The brief information of interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
GE3/0/1              UP   UP       10.1.1.2        Link to CoreRouter
GE3/0/2              Stby DOWN     --
Loop0                UP   UP(s)    2.2.2.9
NULL0                UP   UP(s)    --
Vlan1                UP   DOWN     --
Vlan999              UP   UP       192.168.1.42

The brief information of interface(s) under bridge mode:
Link: ADM - administratively down
Speed or Duplex: (a)/A - auto; H - half; F - full
```

```
Type: A - access; T - trunk; H - hybrid
Interface            Link Speed   Duplex Type PVID Description
GE3/0/2              DOWN auto    A      A    1
GE3/0/3              UP   100M(a) F(a)   A    1    aaaaaaaaaaaaaaaaaaaaaaaaaa
GE3/0/4              DOWN auto    A      A    1
GE3/0/5              DOWN auto    A      A    1
GE3/0/6              UP   100M(a) F(a)   A    1
GE3/0/7              DOWN auto    A      A    1
GE3/0/8              UP   100M(a) F(a)   A    1
GE3/0/9              UP   100M(a) F(a)   A    999
```

Display brief information about interface GigabitEthernet 3/0/3, including the full description of the interface.

```
<Sysname> display interface brief  GigabitEthernet 3/0/3 description
The brief information of interface(s) under bridge mode:
Link: ADM - administratively down
Speed or Duplex: (a)/A - auto; H - half; F - full
Type: A - access; T - trunk; H - hybrid
Interface            Link Speed   Duplex Type PVID Description
GE3/0/3              UP   100M(a) F(a)   A    1    aaaaaaaaaaaaaaaaaaaaaaaaaaaa
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
```

Table 5 Command output

Field	Description
The brief information of interface(s) under route mode:	Brief information about Layer 3 interfaces.
Link: ADM - administratively down; Stby - standby	• **ADM**—The interface has been shut down by the network administrator. To recover its physical layer state, run the **undo shutdown** command. • **Stby**—The interface is a standby interface.
Protocol: (s) – spoofing	If the network layer protocol of an interface is UP, but its link is an on-demand link or not present at all, this field displays **UP (s)**, where **s** represents the spoofing flag. This attribute is typical of interface Null 0 and loopback interfaces.
Interface	Interface name.
Link	Physical link state of the interface: • **UP**—The link is up. • **DOWN**—The link is physically down. • **ADM**—The link has been administratively shut down. To recover its physical state, run the **undo shutdown** command. • **Stby**—The interface is a standby interface.
Protocol	Protocol connection state of the interface: • **UP**. • **DOWN**. • **UP(s)**—The link of the interface is an on-demand link or not present at all.

Field	Description
Description	Interface description configured by using the **description** command. If the **description** keyword is not specified in the **display interface brief** command, the Description field displays at most 27 characters. If the **description** keyword is specified in the **display interface brief** command, the field displays the full interface description.
The brief information of interface(s) under bridge mode:	Brief information about Layer 2 interfaces.
Speed or Duplex: (a)/A - auto; H - half; F – full	If the speed of an interface is automatically negotiated, its speed attribute includes the auto negotiation flag, indicated by the letter **a** in parentheses. If the duplex mode of an interface is automatically negotiated, its duplex mode attribute includes the following options: • **(a)/A**—Auto negotiation. • **H**—Half negotiation. • **F**—Full negotiation.
Type: A - access; T - trunk; H – hybrid	Link type options for Ethernet interfaces.
Speed	Interface rate, in bps.
Duplex	Duplex mode of the interface: • **A**—Autonegotiation. • **F**—Full duplex. • **F(a)**—Autonegotiated full duplex. • **H**—Half duplex. • **H(a)**—Autonegotiated half duplex.
Type	Link type of the interface: • **A**—Access. • **H**—Hybrid. • **T**—Trunk.
PVID	Port VLAN ID.
Cause	Causes for the physical state of an interface to be DOWN. • **Not connected**—No physical connection exists (possibly because the network cable is disconnected or faulty). • **Administratively DOWN**—The port was shut down with the **shutdown** command. To restore the physical state of the interface, use the **undo shutdown** command.

display packet-drop

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

Syntax

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

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

interface-type: Specifies an interface type. If you do not specify an interface type, this command displays information about dropped packets on all the interfaces on the device.

interface-number: Specifies an interface number. If you specify an interface type only, this command displays information about dropped packets on the specified type of interfaces.

summary: Displays the summary of dropped packets on all interfaces.

Examples

Display information about dropped packets on GigabitEthernet 3/0/1.

```
<Sysname> display packet-drop interface GigabitEthernet 3/0/1
GigabitEthernet3/0/1:
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 rate-limit: 143
Packets dropped due to broadcast-suppression: 301
Packets dropped due to unicast-suppression: 215
Packets dropped due to multicast-suppression: 241
Packets dropped due to Tx packet aging: 246
```

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 FFP: 261
  Packets dropped due to STP non-forwarding state: 321
  Packets dropped due to rate-limit: 143
  Packets dropped due to broadcast-suppression: 301
  Packets dropped due to unicast-suppression: 215
  Packets dropped due to multicast-suppression: 241
  Packets dropped due to Tx packet aging: 246
```

Table 6 Command output

Field	Description
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.

Field	Description
Packets dropped due to STP non-forwarding state	Packets that are dropped because STP is in the non-forwarding state.
Packets dropped due to rate-limit	Packets that are dropped due to the rate limit set on the device.
Packets dropped due to broadcast-suppression	Packets that are dropped due to broadcast suppression.
Packets dropped due to unicast-suppression	Packets that are dropped due to unknown unicast suppression.
Packets dropped due to multicast-suppression	Packets that are dropped due to multicast suppression.
Packets dropped due to Tx packet aging	Outbound packets that are timed out.

duplex

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

Use **undo duplex** to restore the default duplex mode of the Ethernet interface.

Syntax

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

undo duplex

Default

A 10-GE interface operates in full duplex mode, and all other types of Ethernet interfaces operate in autonegotiation mode.

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

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

full: Configures the interface to operate in full duplex mode, so that the interface can receive and transmit packets at the same time.

half: Configures the interface to operate in half duplex mode, so that the interface can only receive or only transmit packets at one time. Fiber ports do not support the keyword.

Examples

Configure interface GigabitEthernet 3/0/1 to operate in full duplex mode.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] duplex full
```

flag sdh

Use **flag sdh** to set the value for the overhead byte J0 or J1 in SDH frames when the 10-GE interface operates in WAN mode.

Use **undo flag sdh** to restore the default value of the J0 or J1 byte.

Syntax

flag { **j0** | **j1** } **sdh** *value*

undo flag { **j0** | **j1** } **sdh**

Default

The J0 and J1 bytes are padded with 0s.

Views

Ten-GigabitEthernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

j0: Specifies the Path Trace byte in the Regenerator Section Overhead.

j1: Specifies the Path Trace byte in the High-Order Path Overhead.

value: Specifies the value for the J0 or J1 byte, a string of 1 to 15 characters.

Usage guidelines

This command is effective only when the 10-GE interface is operating in WAN mode.

Examples

Set the value of the J0 byte in SDH frames to **Sysname** on interface Ten-GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 3/0/1
[Sysname-Ten-GigabitEthernet3/0/1] port-mode wan
[Sysname-Ten-GigabitEthernet3/0/1] flag j0 sdh Sysname
```

Related commands

port-mode

flow-control

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

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

Syntax

flow-control

undo flow-control

Default

Generic flow control is disabled on an Ethernet interface.

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

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

TxRx mode generic flow control enables an Ethernet interface to receive common pause frames from its peer, and send common pause frames to notify its peer of congestions.

With the **flow-control** command 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.

Examples

Enable TxRx mode generic flow control on the interface GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] flow-control
```

flow-interval

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

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

Syntax

flow-interval *interval*

undo flow-interval

Default

The interface statistics polling interval is 300 seconds.

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-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 GigabitEthernet 3/0/1.

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

```
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] flow-interval 100
```

interface

Use **interface** to enter interface or subinterface view. With the *interface-number.subnumber* argument specified, if the subinterface identified by the argument does not exist, this command creates the subinterface first, and then enters subinterface view.

Syntax

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

Views

System view

Predefined user roles

network-admin

mdc-admin

Parameters

interface-type: Specifies an interface type.

interface-number: Specifies an interface number.

interface-number.subnumber: Specifies a subinterface number, where *interface-number* is a main interface (which must be a Layer 3 Ethernet interface) number, and *subnumber* is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

Examples

Enter GigabitEthernet 3/0/1 interface view.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1]
```

Create Ethernet subinterface GigabitEthernet 3/0/1.1 and enter GigabitEthernet 3/0/1.1 subinterface view.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1.1
[Sysname-GigabitEthernet3/0/1.1]
```

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 [*value*]

undo jumboframe enable

Default

The device allows jumbo frames within 9216 bytes to pass through.

Views

Layer 2 Ethernet interface view, Layer 3 Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

value: Sets the maximum length of Ethernet frames that are allowed to pass through. The value range for the argument is 1552 to 9216. On LST1XP16LEB1 and LST1XP16LEC1 cards, the value range for the argument is 1552 to 8168.

Usage guidelines

If you set the *value* argument multiple times, the most recent configuration takes effect.

Examples

Enable jumbo frames to pass through GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] 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 *delay-time* [**mode** { **up** | **updown** }]

undo link-delay

Default

The physical state change suppression interval is one second.

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

delay-time: Sets the physical state change suppression interval (in seconds) on the Ethernet interface. The value range for the argument is 0 to 30, however, only 0 to 10 is supported. A value of 0 indicates that physical state changes are not suppressed.

mode up: Suppresses the link-up events. The keyword is not supported in the current software version. The keyword is reserved for future support.

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

Usage guidelines

With the **link-delay** *delay-time* command configured:

- When the interface comes down, the link-down event is not reported to the CPU unless the interface is still down when the suppression interval (*delay-time*) expires.
- When the interface goes up, the link-up event is immediately reported.

With the **link-delay** *delay-time* **mode up** command configured:

- When the interface goes up, the link-up event is not reported to the CPU unless the interface is still up when the suppression interval (*delay-time*) expires.
- When the interface comes down, the link-down event is immediately reported.

With the **link-delay** *delay-time* **mode updown** command configured, when the interface comes down or goes up, the link-down or link-up event is not reported to the CPU unless the interface is still down or up when the suppression interval (*delay-time*) expires.

On a port, if you configure the **link-delay** command multiple times, the most recent configuration takes effect.

Do not configure this command on a port with MSTP enabled.

The **link-delay** *delay-time* command and the **link-delay** *delay-time* **mode up** command are not supported.

Examples

Set the physical state change suppression interval to 8 seconds on interface GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] link-delay 8
```

loopback

Use **loopback** to perform a loopback test on an Ethernet interface.

Use **undo loopback** to cancel a loopback test on an Ethernet interface.

Syntax

loopback { **external** | **internal** }

undo loopback

Default

Loopback test is disabled on an interface.

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

external: Performs an external loopback test on the Ethernet interface. The keyword is not supported in the current software version. The keyword is reserved for future support.

internal: Performs an internal loopback test on the Ethernet interface.

Usage guidelines

If an Ethernet interface does not work normally, you can perform a loopback test on it to identify the problem.

An Ethernet interface in a loopback test does not forward data traffic.

On a physically down interface (displayed as in **DOWN** state), you can only perform an internal loopback test, and an external loopback test will fail. On an administratively shut down interface (displayed as in **ADM** or **Administratively DOWN** state), you cannot perform an internal or external loopback test.

The **speed**, **duplex**, **mdi**, and **shutdown** commands are not available during a loopback test.

During a loopback test, the Ethernet interface operates in full duplex mode. When the loopback test is complete, the port returns to its duplex setting.

Examples

Perform an internal loopback test on GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] loopback internal
```

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

An Ethernet interface operates in Layer 2 mode.

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

bridge: Specifies the Layer 2 mode.

route: Specifies the Layer 3 mode.

Usage guidelines

Depending on the layers where the device processes packets received on interfaces, Ethernet interfaces can operate as Layer 2 Ethernet interfaces (in bridge mode) or as Layer 3 Ethernet interfaces (in route mode).

After you change the link mode of an Ethernet interface, all the settings (except the shutdown status) of the Ethernet interface are restored to their defaults under the new link mode. For more information about shutting down or bringing up an interface, see "shutdown."

The command is available on only switches operating in non-standard mode. By default, a switch operates in standard mode. For more information about the system operating modes, see *Fundamentals Configuration Guide*.

The following Ethernet interfaces do not support switching the operating mode: aggregation group member ports, reflector port of a remote source mirroring group, and Ethernet interfaces of a switch operating in IRF mode and with enhanced IRF enabled. For more information about reflector ports, see *Network Management and Monitoring Configuration Guide*. For more information about enhanced IRF, see *IRF Configuration Guide*.

Examples

Configure GigabitEthernet 3/0/1 to operate in Layer 3 mode.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] port link-mode route
```

port-mode

Use **port-mode** to configure a 10-GE interface to operate in LAN or WAN mode.

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

Syntax

port-mode { **lan** | **wan** }

undo port-mode

Default

A 10-GE interface operates in LAN mode.

Views

Ten-GigabitEthernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

lan: Configures the interface to operate in LAN mode. A port operating in this mode transmits Ethernet packets and connects an Ethernet network.

wan: Configures the interface to operate in WAN mode. A port operating in this mode transmits SDH packets and connects an SDH network. In addition, it supports point-to-point links only.

Examples

Configure the interface Ten-GigabitEthernet 3/0/1 to operate in WAN mode.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet3/0/1
[Sysname-Ten-GigabitEthernet3/0/1] port-mode wan
```

reset counters interface

Use **reset counters interface** to clear the Ethernet interface or subinterface statistics.

Syntax

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

Views

User view

Predefined user roles

network-admin

mdc-admin

Parameters

interface-type: Specifies an interface type.

interface-number: Specifies an interface number.

interface-number.subnumber: Specifies a subinterface number, where *interface-number* is a main interface (which must be a Layer 3 Ethernet interface) number; *subnumber* is the number of a subinterface created under the interface. The value range for the *subnumber* argument is 1 to 4094.

Usage guidelines

Before collecting traffic statistics for a specific period of time on an interface, clear the old statistics first.

If no interface type is specified, this command clears statistics for all interfaces.

If only the interface type is specified, this command clears statistics for all interfaces of that type.

If both the interface type and the interface or subinterface number are specified, this command clears statistics for the specified interface or subinterface.

Examples

Clear the statistics of GigabitEthernet 3/0/1.

```
<Sysname> reset counters interface GigabitEthernet 3/0/1
```

Related commands

- **display interface**
- **display counters interface**
- **display counters rate interface**

reset packet-drop interface

Use **reset packet-drop interface** to clear the dropped packet statistics on an interface or multiple interfaces.

Syntax

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

Views

User view

Predefined user roles

network-admin

mdc-admin

Parameters

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

interface-number: Specify an interface number. If you do not specify this argument, this command clears dropped packet statistics on all interfaces of the specified type.

Examples

Clear dropped packet statistics on GigabitEthernet 3/0/1.

```
<Sysname> reset packet-drop interface GigabitEthernet 3/0/1
```

Clear dropped packet statistics on 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 are down, and Ethernet subinterfaces are up.

Views

Ethernet interface view, Ethernet subinterface view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

You might need to shut down and then bring up an Ethernet interface to make some interface configurations take effect.

Examples

Shut down and then bring up GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] shutdown
[Sysname-GigabitEthernet3/0/1] undo shutdown
```

Shut down and then bring up Layer 3 Ethernet subinterface GigabitEthernet 3/0/1.1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1.1
[Sysname-GigabitEthernet3/0/1.1] shutdown
[Sysname-GigabitEthernet3/0/1.1] 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** | **auto** }

undo speed

Default

The speed of an Ethernet interface is autonegotiated.

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-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.

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.

A fiber port does not support the **10** and **100** keyword of the command.

A 10-GE interface does not support the command.

Examples

Configure GigabitEthernet 3/0/1 to autonegotiate the speed.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] speed auto
```

Layer 2 Ethernet interface/subinterface commands

broadcast-suppression

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

Use **undo broadcast-suppression** to restore the default.

Syntax

broadcast-suppression { *ratio* | **pps** *max-pps* | **kbps** *max-kbps* }

undo broadcast-suppression

Default

Ethernet interfaces do not suppress broadcast traffic.

Views

Layer 2 Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

ratio: Sets the broadcast suppression threshold as a percentage of the maximum interface rate. The value range for the argument is 0 to 100. The smaller the percentage, the less broadcast traffic is allowed to pass through. The argument is always 100. As a result, you cannot suppression broadcast traffic by using the argument.

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 1 to 1.4881 × the maximum interface rate. For example, the value range for the argument is 1 to 1488100 on a GE interface.

kbps *max-kbps*: Specifies the maximum number of kilobits of broadcast traffic that the Ethernet interface can forward per second. The value range for the argument (in kbps) is 1 to the maximum interface rate.

Usage guidelines

You can use the broadcast storm suppression function to limit the size of broadcast traffic on an interface. When the broadcast traffic on the interface exceeds this threshold, the system drops packets until the traffic drops below this threshold.

When you configure the suppression threshold in pps or kbps, the device converts the configured value into a multiple of a certain step (6400 for **pps** and 50 for **kbps**) supported by the chip. As a result, the actual suppression threshold may be different from the configured one. To determine the suppression threshold that takes effect, see the prompts on the device.

Examples

Set the broadcast suppression threshold to 10000 kbps on GigabitEthernet 3/0/1.

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

```
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] broadcast-suppression kbps 10000
```

Related commands

- **multicast-suppression**
- **unicast-suppression**

mdix-mode

IMPORTANT:

Fiber ports do not support this command.

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 { **automidx** | **mdi**| **mdix** }

undo mdix-mode

Default

Ethernet interfaces operate in **automdix** mode.

Views

Layer 2 Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

automidx: 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

Set GigabitEthernet 3/0/1 to operate in MDI mode.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] mdix-mode mdi
```

multicast-suppression

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

Use **undo multicast-suppression** to restore the default.

Syntax

multicast-suppression { *ratio* | **pps** *max-pps* | **kbps** *max-kbps* }

undo multicast-suppression

Default

Ethernet interfaces do not suppress multicast traffic.

Views

Layer 2 Ethernet interface view, Layer 2 Ethernet subinterface view

Predefined user roles

network-admin

mdc-admin

Parameters

ratio: Sets the multicast suppression threshold as a percentage of the maximum interface rate. The value range for the argument (in percentage) is 0 to 100. The smaller the percentage, the less multicast traffic is allowed to pass through. The argument is always 100. As a result, you cannot suppression multicast traffic by using the argument.

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 1 to 1.4881 × the maximum interface rate. For example, the value range for the argument is 1 to 1488100 on a GE interface.

kbps *max-kbps*: Specifies the maximum number of kilobits of multicast traffic that the Ethernet interface can forward per second. The value range for the argument (in kbps) is 1 to the maximum interface rate.

Usage guidelines

You can use the multicast storm suppression function to limit the size of multicast traffic on an interface. When the multicast traffic on the interface exceeds this threshold, the system drops packets until the traffic drops below this threshold.

When you configure the suppression threshold in pps or kbps, the device converts the configured value into a multiple of a certain step (6400 for **pps** and 50 for **kbps**) supported by the chip. As a result, the actual suppression threshold may be different from the configured one. To determine the suppression threshold that takes effect, see the prompts on the device.

Examples

Set the multicast storm suppression threshold to 10000 kbps on GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] multicast-suppression kbps 10000
```

Related commands

- **broadcast-suppression**
- **unicast-suppression**

port up-mode

Use **port up-mode** to forcibly bring up a fiber GE or 10-GE port.

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

Syntax

port up-mode

undo port up-mode

Views

Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

You can use this command to forcibly bring up a fiber Ethernet port, and enable the port to forward packets unidirectionally over a single link. In this way, transmission links are well utilized.

After you forcibly bring up an Ethernet fiber port, the fiber port stays physically up regardless of whether or not an optical module or fiber connections are present for the port.

Only 10-GE fiber ports operating in LAN mode and GE fiber ports support this command. Copper ports and combo interfaces do not support this command.

To configure this command on a port, make sure the port is operating in bridge mode.

The **port up-mode** command is mutually exclusive with any of the **shutdown**, **speed**, **duplex**, and **loopback** commands.

The fiber port cannot properly forward traffic if you install a transceiver module, 100/1000-Mbps transceiver module, or 100-Mbps transceiver module into the port and configure the **port up-mode** command. To solve the problem, use the **undo port up-mode** command on the fiber port.

Examples

Forcibly bring up the fiber port GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] port up-mode
```

unicast-suppression

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

Use **undo unicast-suppression** to restore the default.

Syntax

unicast-suppression { *ratio* | **pps** *max-pps* | **kbps** *max-kbps* }

undo unicast-suppression

Default

Ethernet interfaces do not suppress unicast traffic.

Views

Layer 2 Ethernet interface view

Predefined user roles

network-admin

mdc-admin

Parameters

ratio: Sets the unicast suppression threshold as a percentage of the maximum interface rate. The value range for the argument (in percentage) is 0 to 100. The smaller the percentage, the less unicast traffic is allowed to pass through. The argument is always 100. As a result, you cannot suppression unicast traffic by using the argument.

pps *max-pps*: Specifies the maximum number of unicast packets that the interface can forward per second. The value range for the *max-pps* argument (in pps) is 1 to 1.4881 × the maximum interface rate. For example, the value range for the argument is 1 to 1488100 on a GE interface.

kbps *max-kbps*: Specifies the maximum number of kilobits of unicast traffic that the Ethernet interface can forward per second. The value range for the argument (in kbps) is 1 to the maximum interface rate.

Usage guidelines

You can use the unicast storm suppression function to limit the size of unicast traffic on an interface. When the unicast traffic on the interface exceeds this threshold, the system discards packets until the unicast traffic drops below this threshold.

When you configure the suppression threshold in pps or kbps, the device converts the configured value into a multiple of a certain step (6400 for **pps** and 50 for **kbps**) supported by the chip. As a result, the actual suppression threshold may be different from the configured one. To determine the suppression threshold that takes effect, see the prompts on the device.

Examples

Set the unicast storm suppression threshold to 10000 kbps on GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] unicast-suppression kbps 10000
```

Related commands

- **broadcast-suppression**
- **multicast-suppression**

Layer 3 Ethernet interface or subinterface commands

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

mdc-admin

Parameters

size: Sets the maximum transmission unit (MTU) in bytes, which is in the range of 64 to 9198.

Usage guidelines

Do not modify the MTU in general cases.

Examples

Set the MTU to 1430 bytes for Layer 3 Ethernet interface GigabitEthernet 3/0/1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1
[Sysname-GigabitEthernet3/0/1] mtu 1430
```

Set the MTU to 1400 bytes for Layer 3 Ethernet subinterface GigabitEthernet 3/0/1.1.

```
<Sysname> system-view
[Sysname] interface GigabitEthernet 3/0/1.1
[Sysname-GigabitEthernet3/0/1.1] mtu 1430
```

Loopback and null interface commands

default

Use **default** to restore the default settings for a loopback or null interface.

Syntax

default

Views

Loopback interface view, null interface view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

CAUTION:

The **default** command might interrupt ongoing network services. Make sure you are fully aware of the impacts of this command before using it on a live network.

This command might fail to restore the default settings for some commands for reasons such as command dependencies and system restrictions. Use the **display this** command in interface view to identify these commands, and then use their **undo** forms or follow the command reference to individually restore their default settings. If your restoration attempt still fails, follow the error message instructions to resolve the problem.

Examples

Restore the default settings for interface loopback 1.

```
<Sysname> system-view
[Sysname] interface loopback 1
[Sysname-LoopBack1] default
```

description

Use **description** to set a description for an interface.

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

Syntax

description *text*

undo description

Default

The description of a loopback or null interface is the *interface name* plus **Interface** (for example, **LoopBack1 Interface**).

Views

Loopback interface view, null interface view

Predefined user roles

network-admin

mdc-admin

Parameters

text: Specifies an interface description, a string of 1 to 80 characters.

Usage guidelines

Configure a description for an interface for easy identification and management purposes.

You can use the **display interface** command to view the configured description.

Examples

Set the description to **for RouterID** for interface loopback 1.

```
<Sysname> system-view
[Sysname] interface loopback 1
[Sysname-LoopBack1] description for RouterID
```

display interface loopback

Use **display interface loopback** to display information about the specified or all existing loopback interfaces.

Syntax

display interface [**loopback** [*interface-number*]] [**brief** [**description**]]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

interface-number: Specifies a loopback interface by its number, which can be the number of any existing loopback interface. If you do not specify this argument, the command displays information about all existing loopback interfaces on the device.

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

description: Displays the full description of the specified interface. When the keyword is not specified, only the first 27 characters of an interface description are displayed if the interface description is longer than 27 characters. When the keyword is specified, all characters of the interface description are displayed.

Usage guidelines

This command is supported only after a loopback interface is created.

If the **loopback** keyword is not specified, the command displays information about all interfaces of the device.

If the **loopback** keyword is specified but the *interface-number* argument is not specified, the command displays information about all existing loopback interfaces.

Examples

Display detailed information about interface loopback 0.

```
<Sysname> display interface loopback 0
LoopBack0 current state: UP
Line protocol current state: UP (spoofing)
Description: LoopBack0 Interface
The Maximum Transmit Unit is 1536
Internet protocol processing : disabled
Physical is Loopback
Last clearing of counters:  Never
    Last 300 seconds input:  0 bytes/sec, 0 bits/sec, 0 packets/sec
    Last 300 seconds output:  0 bytes/sec, 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 drops
    0 packets output, 0 bytes, 0 drops
```

Table 7 Command output

Field	Description
current state	State of the loopback interface: • **UP**—The loopback interface can receive and transmit packets. • **Administratively DOWN**—The interface was manually shut down by using the **shutdown** command.
Line protocol current state	State of the data link layer protocol. If the link layer protocol state of an interface is shown as UP but its link is an on-demand link or not present at all, its protocol attribute includes the spoofing flag.
Description	Description string of the interface.
The Maximum Transmit Unit	MTU of the interface.
Internet protocol processing: disabled	Indicates that the interface cannot process Layer 3 packets (displayed when the interface is not configured with an IP address).
Internet Address is 1.1.1.1/32 Primary	Primary IP address of the interface (displayed when the interface is configured with a primary IP address).
Physical is Loopback	The physical type of the interface is loopback.
Last clearing of counters	Time when statistics on the logical interface were last cleared by using the **reset counters interface** command. If the statistics of the interface have never been cleared by using the **reset counters interface** command since the device started, this field displays **Never**.

Field	Description
Last 300 seconds input: 0 bytes/sec, 0 bits/sec, 0 packets/sec	Average input rate during the last 300 seconds (displayed when the interface supports traffic statistics collection): • **packets/sec**—Average number of packets received per second. • **bytes/sec**—Average number of bytes received per second. • **bits/sec**—Average number of bits received per second.
Last 300 seconds output: 0 bytes/sec, 0 bits/sec, 0 packets/sec	Average output rate over the last 300 seconds (displayed when the interface supports traffic statistics collection): • **packets/sec**—Average number of packets sent per second. • **bytes/sec**—Average number of bytes sent per second. • **bits/sec**—Average number of bits sent per second.
0 packets input, 0 bytes, 0 drops	Amount of incoming traffic in packets and in bytes, and the total number of dropped incoming packets (displayed when the interface supports traffic statistics collection).
0 packets output, 0 bytes, 0 drops	Total number and size (in bytes) of output packets of the interface and the number of dropped packets (displayed when the interface supports traffic statistics collection).

Display brief information about all loopback interfaces.

```
<Sysname> display interface loopback brief
The brief information of interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
Loop1                UP   UP(s)    --               aaaaaaaaaaaaaaaaaaaaaaaaaaa
```

Display brief information about all existing loopback interfaces, including the full description of each loopback interface.

```
<Sysname> display interface loopback brief description
The brief information of interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
Loop1                UP   UP(s)    --               aaaaaaaaaaaaaaaaaaaaaaaaaaa
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
```

Table 8 Command output

Field	Description
The brief information of interface(s) under route mode:	Brief information about loopback interfaces.
Link: ADM - administratively down; Stby - standby	• **ADM**—The interface has been shut down by the network administrator. To recover its physical layer state, run the **undo shutdown** command. • **Stby**—The interface is a standby interface.
Protocol: (s) – spoofing	If the network layer protocol of an interface is UP but its link is an on-demand link or not present at all, this field displays **UP (s)**, where **s** represents the spoofing flag. This attribute is typical of interface Null 0 and loopback interfaces.

Field	Description
Interface	Interface name.
Link	Physical link state of the interface: • **UP**—The link is up. • **DOWN**—The link is physically down. • **ADM**—The link has been administratively shut down. To recover its physical state, run the **undo shutdown** command. • **Stby**—The interface is a standby interface.
Protocol	Protocol connection state of the interface: • **UP**. • **DOWN**. • **UP(s)**—The link of the interface is an on-demand link or not present at all.
Description	Interface description configured by using the **description** command. If the **description** keyword is not specified in the **display interface brief** command, the Description field is of up to 27 characters. If the **description** keyword is specified in the **display interface brief** command, the field displays the full interface description.

Related commands

- **interface loopback**
- **reset counters interface loopback**

display interface null

Use **display interface null** to display information about the null interface.

Syntax

display interface [**null** [**0**]] [**brief** [**description**]]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

0: Specifies interface Null 0.

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

description: Displays the full description of the specified interface. When the keyword is not specified, only the first 27 characters of an interface description are displayed if the interface

description is longer than 27 characters. When the keyword is specified, all characters of the interface description are displayed.

Usage guidelines

The device has only one null interface (Null 0). The null interface number is fixed at 0.

If the **null** keyword is not specified, the command displays information about all interfaces of the device.

If the **null** keyword is specified but the **0** keyword is not specified, the command displays information about interface Null 0, because the device has only one null interface Null 0.

Examples

Display detailed information about interface Null 0.

```
<Sysname> display interface null 0
NULL0 current state: UP
Line protocol current state: UP (spoofing)
Description:  NULL0 Interface
The Maximum Transmit Unit is 1500
Internet protocol processing: disabled
Physical is NULL DEV
Last clearing of counters: Never
    Last 300 seconds input:  0 bytes/sec, 0 bits/sec, 0 packets/sec
    Last 300 seconds output:  0 bytes/sec, 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 drops
    0 packets output, 0 bytes, 0 drops
```

Display brief information about interface Null 0.

```
<Sysname> display interface null 0 brief
The brief information of interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
NULL0                UP   UP(s)    --              aaaaaaaaaaaaaaaaaaaaaaaaaaa
```

Display brief information about interface Null 0 including the full description of the null interface.

```
<Sysname> display interface null 0 brief description
The brief information of interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
NULL0                UP   UP(s)    --              aaaaaaaaaaaaaaaaaaaaaaaaaaa
Aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
```

For the command output, see Table 7 and Table 8.

Related commands

- **interface null**
- **reset counters interface null**

interface loopback

Use **interface loopback** to create a loopback interface and enter loopback interface view.

Use **undo interface loopback** to remove a loopback interface.

Syntax

interface loopback *interface-number*

undo interface loopback *interface-number*

Default

No loopback interface exists.

Views

System view

Predefined user roles

network-admin

mdc-admin

Parameters

interface-number: Specifies a loopback interface by its number, which is in the range of 0 to 1023.

Usage guidelines

The physical layer state and link layer protocols of a loopback interface are always up unless the loopback interface is manually shut down. You can establish a connection to a loopback interface to prevent the connection from being affected by the physical state of the interface and to improve the reliability of the connection. For example, you can configure a loopback interface as the source interface for establishing an FTP connection or use the loopback interface address as the Router ID in BGP.

Examples

Create interface loopback1.

```
<Sysname> system-view
[Sysname] interface loopback 1
[Sysname-LoopBack1]
```

interface null

Use **interface null** to enter null interface view.

Syntax

interface null 0

Default

A device has only one null interface (Null 0), which cannot be created or deleted.

Views

System view

Predefined user roles

network-admin

mdc-admin

Parameters

0: Specifies interface Null 0. The null interface number is fixed at 0.

Examples

Enter Null 0 interface view.

```
<Sysname> system-view
[Sysname] interface null 0
[Sysname-NULL0]
```

reset counters interface loopback

Use **reset counters interface loopback** to clear the statistics on the specified or all loopback interfaces.

Syntax

reset counters interface loopback [*interface-number*]

Views

User view

Predefined user roles

network-admin

mdc-admin

Parameters

interface-number: Specifies a loopback interface by its number, which can be the number of any existing loopback interface. If you do not specify the *interface-number* argument, the command clears the statistics on all loopback interfaces.

Usage guidelines

To determine whether a loopback interface works correctly within a period by collecting the traffic statistics within that period, first use the **reset counters interface** [**loopback** [*interface-number*]] command to clear the statistics, and then have the interface automatically collect the statistics.

This command is available only if at least one loopback interface has been created.

Examples

Clear the statistics on loopback interface Loopback 1.

```
<Sysname> reset counters interface loopback 1
```

Related commands

display interface loopback

reset counters interface null

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

Syntax

reset counters interface [**null** [**0**]]

Views

User view

Predefined user roles

network-admin

mdc-admin

Parameters

0: Specifies the number of the null interface, which is fixed at 0.

Usage guidelines

To determine whether the null interface works correctly within a period by collecting the traffic statistics within that period, first use the **reset counters interface** [**null** [**0**]] command to clear the statistics, and then have the interface automatically collect the statistics.

Examples

Clear the statistics on interface Null 0.

```
<Sysname> reset counters interface null 0
```

Related commands

display interface null

shutdown

Use **shutdown** to shut down a loopback interface.

Use **undo shutdown** to bring up a loopback interface.

Syntax

shutdown

undo shutdown

Default

A loopback interface is up.

Views

Loopback interface view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

Use the **shutdown** command with caution, because the command disconnects the connection of the interface and disables the interface from communicating.

Examples

Shut down interface loopback 1.

```
<Sysname> system-view
[Sysname] interface loopback 1
[Sysname-LoopBack1] shutdown
```

Bulk interface configuration commands

interface range

Use **interface range** to create an interface range and enter the interface range view.

Syntax

interface range *interface-list*

Views

System view

Predefined user roles

network-admin

mdc-admin

Parameters

interface-list: Specifies an interface list in the format of *interface-list* = { *interface-type interface-number* [**to** *interface-type interface-number*] }&<1-5>. The *interface-type interface-number* argument specifies an interface by its type and number. &<1-5> indicates that you can specify up to five interfaces or interface lists. When you specify the **to** keyword in *interface-type interface-number1* **to** *interface-type interface-number2*, the interfaces before and after the **to** keyword must be on the same Ethernet interface card. The last-tier value of the interface number before **to** must not be greater than the one after **to**, and the values of the other tiers of the interface number before **to** must be the same as the one after **to**.

Usage guidelines

Use this command to enter interface range view to bulk configure multiple interfaces with the same feature instead of configuring them one by one. For example, run the **shutdown** command in interface range view to shut down a range of interfaces.

In interface range view, only the commands supported by the first interface are available. The first interface is specified with the **interface range** command. To view these commands in the interface range, enter the interface range view, and then enter **?** at the prompt.

If the application of a command fails on one member interface, the application of the command on the other member interfaces is not affected. In this case, the system displays an error message and continues with the next member interface.

To verify the configuration of the first interface in the interface range, execute the **display this** command in interface range view.

To bulk configure interfaces, follow these guidelines:

- Do not assign an aggregate interface together with any of its member interfaces to an interface range at the same time. Some commands, after being executed on both an aggregate interface and its member interfaces, can break up the aggregation.
- No limit is set on the maximum number of interfaces in an interface range. The more interfaces in an interface range, the longer the command execution time.

Examples

Shut down interfaces GigabitEthernet 3/0/1 through GigabitEthernet 3/0/24 and VLAN interface 2.

```
<Sysname> system-view
[Sysname] interface range GigabitEthernet 3/0/1 to GigabitEthernet 3/0/24 vlan-interface
2
[Sysname-if-range] shutdown
```

interface range name

Use **interface range name** *name* **interface** *interface-list* to create an interface range, configure a name for the interface range, and enter the interface range view.

Use **interface range name** *name* without the **interface** keyword to enter the view of an interface range with the specified name.

Use **undo interface range name** to delete the interface range with the specified name.

Syntax

interface range name *name* [**interface** *interface-list*]

undo interface range name *name*

Views

System view

Predefined user roles

network-admin

mdc-admin

Parameters

name: Specifies an interface range name, a case-sensitive string of 1 to 32 characters.

interface-list: Specifies an interface list in the format of *interface-list* = { *interface-type interface-number* [**to** *interface-type interface-number*] }&<1-5>. The *interface-type interface-number* argument specifies an interface by its type and number. &<1-5> indicates that you can specify up to five interfaces or interface lists. When you specify the **to** keyword in *interface-type interface-number1* **to** *interface-type interface-number2*, the interfaces before and after the **to** keyword must be on the same Ethernet interface card. The last-tier value of the interface number before **to** must not be greater than the one after **to**, and the values of the other tiers of the interface number before **to** must be the same as the one after **to**.

Usage guidelines

You can use this command to assign a name to an interface range and can specify this name rather than the interface range to enter the interface range view.

In interface range view, only the commands supported by the first interface are available. The first interface is specified with the **interface range** command. To view the commands supported by the first interface in the interface range, enter the interface range view and enter a question mark (?) at the command line interface prompt.

Failure of applying a command on one member interface does not affect the application of the command on the other member interfaces. If applying a command on one member interface fails, the system displays an error message and continues with the next member interface.

To verify the configuration of the first interface in the interface range, execute the **display this** command in interface range view.

To view the member interfaces of an interface range, use the **display current-configuration | include "interface range"** command.

To bulk configure interfaces, follow these guidelines:

- Do not assign an aggregate interface and any of its member interfaces to an interface range at the same time. Some commands, after being executed on both an aggregate interface and its member interfaces, can break up the aggregation.
- No limit is set on the maximum number of interfaces in an interface range. The more interfaces in an interface range, the longer the command execution time.
- The maximum number of interface range names is only limited by the system resources. To guarantee bulk interface configuration performance, HP recommends configuring fewer than 1000 interface range names.

Examples

Add GigabitEthernet 3/0/1 through GigabitEthernet 3/0/12 to interface range named **myEthPort**, and enter the interface range view.

```
<Sysname> system-view
[Sysname] interface range name myEthPort interface GigabitEthernet 3/0/1 to GigabitEthernet 3/0/12
[Sysname-if-range-myEthPort]
```

Enter the view of interface range named **myEthPort**.

```
<Sysname> system-view
[Sysname] interface range name myEthPort
[Sysname-if-range-myEthPort]
```

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