# Contents

# Ethernet link aggregation commands

## bandwidth

Use **bandwidth** to set the expected bandwidth for 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**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

Layer 3 aggregate subinterface view

S-channel bundle interface 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 to 10000 kbps for Layer 2 aggregate interface Bridge-Aggregation 1.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] bandwidth 10000
```

## default

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

**Syntax**

**default**

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

Layer 3 aggregate subinterface view

S-channel bundle interface 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 execute 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 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 Layer 2 aggregate interface 1.
```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] 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 *interface-name* **Interface**. For example, the default description of Bridge-Aggregation 1 is **Bridge-Aggregation1 Interface**.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

Layer 3 aggregate subinterface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Parameters**

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

**Examples**

# Configure the description as **connect to the lab** for Layer 2 aggregate interface Bridge-Aggregation 1.
```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] description connect to the lab
```

# display interface

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

**Syntax**

**display interface** [ { **bridge-aggregation** | **route-aggregation** | **schannel-bundle** } [ *interface-number* ] ] [ **brief** [ **description** | **down** ] ]

**Views**

Any view

**Predefined user roles**

network-admin

network-operator

**Parameters**

**bridge-aggregation**: Specifies Layer 2 aggregate interfaces.

**route-aggregation**: Specifies Layer 3 aggregate interfaces.

**schannel-bundle**: Specifies S-channel bundle interfaces.

*interface-number*: Specifies an existing aggregate interface number.

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

**Usage guidelines**

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

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

**Examples**

# Display detailed information about Layer 2 aggregate interface Bridge-Aggregation 1.

```
<Sysname> display interface bridge-aggregation 1
Bridge-Aggregation1
Current state: UP
IP packet frame type: Ethernet II, hardware address: 000f-e207-f2e0
Description: Bridge-Aggregation1 Interface
Bandwidth: 1000 kbps
Unknown-speed mode, unknown-duplex mode
Link speed type is autonegotiation, link duplex type is autonegotiation
PVID: 1
Port link-type: Access
 Tagged VLANs:   None
 UnTagged VLANs: 1
Last clearing of counters: Never
Last 300 seconds input:  6900 packets/sec 885160 bytes/sec    0%
Last 300 seconds output:  3150 packets/sec 404430 bytes/sec     0%
```

```
Input (total):  5364747 packets, 686688416 bytes
        2682273 unicasts, 1341137 broadcasts, 1341337 multicasts, 0 pauses
Input (normal):  5364747 packets, 686688416 bytes
        2682273 unicasts, 1341137 broadcasts, 1341337 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): 1042508 packets, 133441832 bytes
        1042306 unicasts, 0 broadcasts, 202 multicasts, - pauses
Output (normal): 1042508 packets, 133441832 bytes
        1042306 unicasts, 0 broadcasts, 202 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 3 aggregate interface Route-Aggregation 1.

```
<Sysname> display interface route-aggregation 1
Route-Aggregation1
Current state: UP
Line protocol state: UP
Description: Route-Aggregation1 Interface
Maximum transmission unit: 1500
Internet protocol processing: Disabled
IP packet frame type: Ethernet II, hardware address: 0000-0000-0000
IPv6 packet frame type: Ethernet II, hardware address: 0000-0000-0000
Port priority: 0
Last clearing of counters: Never
    Last 300 seconds input rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
    Last 300 seconds output rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 drops
    0 packets output, 0 bytes, 0 drops
```

# Display detailed information about S-channel bundle interface Schannel-Bundle 1.

```
<Sysname> display interface schannel-bundle 1
Schannel-Bundle1
Current state: DOWN
IP packet frame type: Ethernet II, hardware address: 8416-3d70-0100
Description: Schannel-Bundle1 Interface
Unknown-speed mode, unknown-duplex mode
Link speed type is autonegotiation, link duplex type is autonegotiation
PVID: 1
Port link-type: Access
 Tagged VLANs:   None
 Untagged VLANs: 1
Last clearing of counters: Never
Last 300 seconds input:  0 packets/sec 0 bytes/sec -%
Last 300 seconds 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
```

# Display brief information about Layer 2 aggregate interface Bridge-Aggregation 1.

```
<Sysname> display interface bridge-aggregation 1 brief
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
BAGG1              UP    auto    A      A    1
```

# Display brief information about Layer 3 aggregate interface Route-Aggregation 1.

```
<Sysname> display interface route-aggregation 1 brief
Brief information on interfaces in route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface          Link Protocol Primary IP       Description
RAGG1              UP   UP        --
```

# Display brief information about S-channel bundle interface Schannel-Bundle 1.

```
<Sysname> display interface schannel-bundle 1 brief
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
SCH-B1             UP   --        --     A    1
```

**Table 1 Command output**

| Field | Description |
|---|---|
| Bridge-Aggregation1 | Layer 2 aggregate interface name. |
| Route-Aggregation1 | Layer 3 aggregate interface name. |
| Schannel-Bundle 1 | S-channel bundle interface name. |
| Current state | Physical link state of the interface:<br>• **Administratively DOWN**—The interface has been shut down by using the **shutdown** command.<br>• **DOWN**—The interface is administratively up, but its physical state is down (possibly because no physical link exists or the link has failed).<br>• **UP**—The interface is both administratively and physically up. |
| IP packet frame type | IPv4 packet framing format. |

| Field | Description |
| --- | --- |
| Description | Description of the interface. |
| Bandwidth | Expected bandwidth of the interface. This field is not displayed when the bandwidth is 0 kbps. |
| Port priority | Port priority of the interface. |
| Unknown-speed mode, unknown-duplex mode | The interface speed and duplex mode are unknown. |
| Port link-type | Port link type:<br>• Access.<br>• Trunk.<br>• Hybrid. |
| Tagged VLANs | VLAN whose packets are sent out of this interface with a tag. |
| Untagged VLANs | VLAN whose packets are sent out of this interface without a tag. |
| Last clearing of counters | Time when the **reset counters interface** command was last used to clear the interface statistics. This field displays **Never** if the **reset counters interface** command has never been used on the interface since device startup. |
| Last 300 seconds input/output rate | Average input or output rate over the last 300 seconds. |
| Input/Output (total) | Statistics of all packets received or sent on the interface. |
| Input/Output (normal) | Statistics of all normal packets received or sent on the interface. |
| Line protocol state | Data link layer state of the interface:<br>• **UP**.<br>• **DOWN**. |
| 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 **primary** attribute indicates that the address is the primary IP address. |
| Brief information on interfaces in route mode | Brief information about Layer 3 interfaces. |
| Brief information on interfaces in bridge mode | Brief information about Layer 2 interfaces. |
| Interface | Abbreviated interface name. |
| Link | Physical link state of the interface:<br>• **UP**—The interface is physically up.<br>• **DOWN**—The interface is physically down.<br>• **ADM**—The interface has been shut down by using the **shutdown** command. To restore the physical state of the interface, use the **undo shutdown** command.<br>• **Stby**—The interface is a backup interface in standby state. |
| Speed | Speed of the interface, in bps.<br>This field displays the **(a)** flag next to the speed if the speed is automatically negotiated.<br>This field displays **auto** if the interface is configured to autonegotiate its speed but the autonegotiation has not started. |
| Duplex | Duplex mode of the interface: |

| Field | Description |
|---|---|
| | • **A**—Autonegotiation. The interface is configured to autonegotiate its duplex mode but the autonegotiation has not started.<br>• **F**—Full duplex.<br>• **F(a)**—Autonegotiated full duplex.<br>• **H**—Half duplex.<br>• **H(a)**—Autonegotiated half duplex. |
| Type | Link type of the interface:<br>• **A**—Access.<br>• **H**—Hybrid.<br>• **T**—Trunk. |
| Protocol | Data link layer protocol state of the interface:<br>• **UP**—The data link layer protocol of the interface is up.<br>• **DOWN**—The data link layer protocol of the interface is down.<br>• **UP(s)**—The data link layer protocol of the interface is up, but the link is an on-demand link or does not exist. The **(s)** attribute represents the spoofing flag. This value is typical of null interfaces and loopback interfaces. |
| Primary IP | Primary IP address of the interface. This field displays two hyphens (**--**) if the interface does not have an IP address. |
| Cause | Cause for the physical link state of an interface to be **DOWN**. |

# display lacp system-id

Use **display lacp system-id** to display the local system ID.

**Syntax**

**display lacp system-id**

**Views**

Any view

**Predefined user roles**

network-admin

network-operator

**Usage guidelines**

You can use the **lacp system-priority** command to change the LACP priority of the local system. The LACP priority value is specified in decimal format in the **lacp system-priority** command. However, it is displayed in hexadecimal format in the output from the **display lacp system-id** command.

**Examples**

# Display the local system ID.
```
<Sysname> display lacp system-id
Actor System ID: 0x8000, 0000-fc00-6504
```

| Field | Description |
|---|---|
| Actor System ID: 0x8000, 0000-fc00-6504 | Local system ID, which contains the system LACP priority (0x8000 in this sample output) and the system MAC address (0000-FC00-6504 in this sample output). |

**Related commands**

lacp system-priority

# display link-aggregation load-sharing mode

Use **display link-aggregation load-sharing mode** to display global or group-specific link-aggregation load sharing modes.

**Syntax**

**display link-aggregation load-sharing mode** [ **interface** [ { **bridge-aggregation** | **route-aggregation** | **schannel-bundle** } *interface-number* ] ]

**Views**

Any view

**Predefined user roles**

network-admin

network-operator

**Parameters**

**bridge-aggregation**: Specifies Layer 2 aggregate interfaces.

**route-aggregation**: Specifies Layer 3 aggregate interfaces.

**schannel-bundle**: Specifies S-channel bundle interfaces.

*interface-number*: Specifies an existing aggregate interface number.

**Usage guidelines**

If you do not specify the **interface** keyword, the command displays the global link-aggregation load sharing modes.

If you specify the **interface** keyword, but do not specify an interface, the command displays all group-specific load sharing modes.

The **bridge-aggregation**, **route-aggregation**, or **schannel-bundle** keyword is available only when the corresponding aggregate interfaces exist on the device.

**Examples**

# Display the default global link-aggregation load sharing modes.

```
<Sysname> display link-aggregation load-sharing mode
MAC-in-MAC traffic load-sharing mode:
Default
Link-Aggregation Load-Sharing Algorithm:
Default
Link-Aggregation Load-Sharing Seed:
Default
Link-aggregation load-sharing mode:
Layer 2 traffic: packet type-based sharing
```

```
Layer 3 traffic: packet type-based sharing
```

# Display the set global link-aggregation load sharing mode.

```
<Sysname> display link-aggregation load-sharing mode
MAC-in-MAC traffic load-sharing mode:
inner
Link-Aggregation Load-Sharing Algorithm:
Algorithm 2
Link-Aggregation Load-Sharing Seed:
0x3ff
Link-aggregation load-sharing mode:
destination-mac address, source-mac address
```

# Display the default link-aggregation load sharing modes of Layer 2 aggregation group 10.

```
<Sysname> display link-aggregation load-sharing mode interface bridge-aggregation 10
Bridge-Aggregation10 load-sharing mode:
Layer 2 traffic: packet type-based sharing
Layer 3 traffic: packet type-based sharing
```

# Display the set link-aggregation load sharing mode of Layer 2 aggregation group 10.

```
<Sysname> display link-aggregation load-sharing mode interface bridge-aggregation 10
Bridge-Aggregation10 load-sharing mode:
destination-mac address, source-mac address
```

**Table 3 Command output**

| Field | Description |
|---|---|
| MAC-in-MAC traffic load-sharing mode | Global load sharing mode for MAC-in-MAC traffic. <br> By default, this field displays **Default**. If you have set the global load sharing mode for MAC-in-MAC traffic, this field displays the set mode. |
| Link-Aggregation Load-Sharing Algorithm | Link aggregation load sharing algorithm. <br> By default, this field displays **Default**. If you have configured the load sharing algorithm, this field displays the configured algorithm. |
| Link-Aggregation Load-Sharing Seed | Link aggregation load sharing hash seed. <br> By default, this field displays **Default**. If you have configured the load sharing hash seed, this field displays the configured seed. |
| Link-aggregation load-sharing mode | Global link-aggregation load sharing mode. <br> By default, this field displays the link-aggregation load sharing modes for Layer 2 and Layer 3 traffic. <br> If you have set the global link-aggregation load sharing mode, this field displays the set mode. |
| Bridge-Aggregation10 load-sharing mode | Link-aggregation load sharing mode of Layer 2 aggregation group 10. <br> By default, this field displays the global link-aggregation load sharing modes. <br> If you have set a link-aggregation load sharing mode for this aggregation group, this field displays the set mode. |
| Route-Aggregation10 load-sharing mode | Link-aggregation load sharing mode of Layer 3 aggregation group 10. <br> By default, this field displays the global link-aggregation load sharing modes. |

| Field | Description |
|---|---|
| | If you have set a link-aggregation load sharing mode for this aggregation group, this field displays the set mode. |
| Schannel-Bundle1 load-sharing mode | Link-aggregation load sharing mode of S-channel bundle group 1.<br><br>By default, this field displays the global link-aggregation load sharing modes.<br><br>If you have set a link-aggregation load sharing mode for this bundle group, this field displays the configured mode. |
| Layer 2 traffic: packet type-based sharing | Default link-aggregation load sharing mode for Layer 2 traffic. In this sample output, Layer 2 traffic is load shared based on the packet type. |
| Layer 3 traffic: packet type-based sharing | Default link-aggregation load sharing mode for Layer 3 traffic. In this sample output, Layer 3 traffic is load shared based on the packet type. |
| MPLS traffic   : mpls-label1, mpls-label2 | Default link-aggregation load sharing mode for MPLS traffic. In this sample output, MPLS traffic is load shared based on Layer 1 and Layer 2 MPLS labels. |
| destination-mac address, source-mac address | User-configured link-aggregation load sharing mode. In this sample output, traffic is load shared based on source and destination MAC addresses. |

# display link-aggregation load-sharing path

Use **display link-aggregation load-sharing path** to display forwarding information for the specified traffic flow.

**Syntax**

**display link-aggregation load-sharing path interface** { **bridge-aggregation** | **route-aggregation** } *interface-number* **ingress-port** *interface-type interface-number* [ **route** ] { { **destination-ip** *ip-address* | **destination-ipv6** *ipv6-address* } | { **source-ip** *ip-address* | **source-ipv6** *ipv6-address* } | **destination-mac** *mac-address* | **destination-port** *port-id* | **ethernet-type** *type-number* | **ip-protocol** *protocol-id* | **source-mac** *mac-address* | **source-port** *port-id* | **vlan** *vlan-id* } *

**Views**

Any view

**Predefined user roles**

network-admin

network-operator

**Parameters**

**bridge-aggregation**: Specifies Layer 2 aggregate interfaces.

**route-aggregation**: Specifies Layer 3 aggregate interfaces.

*interface-number*: Specifies an existing aggregate interface by its number.

**ingress-port** *interface-type interface-number*: Specifies an ingress port by its type and number. The ingress port must be a physical port.

**route**: Displays forwarding information for Layer 3 traffic. If you do not specify this keyword, the command displays forwarding information for Layer 2 traffic.

**destination-ip** *ip-address*: Specifies a destination IPv4 address.

**destination-ipv6** *ipv6-address*: Specifies a destination IPv6 address.

**source-ip** *ip-address*: Specifies a source IPv4 address.

**source-ipv6** *ipv6-address*: Specifies a source IPv6 address.

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

**destination-port** *port-id*: Specifies a destination port number in the range of 1 to 65535.

**ethernet-type** *type-number*: Specifies an Ethernet type code in the range of 1 to 65535.

**ip-protocol** *protocol-id*: Specifies an IP protocol by its ID in the range of 0 to 255.

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

**source-port** *port-id*: Specifies a source port number in the range of 1 to 65535.

**vlan** *vlan-id*: Specifies a VLAN by its ID in the range of 1 to 4094.

## Usage guidelines

A parameter specified in the command might not be used for selecting the egress port. The **Load sharing parameters** field displays the parameters that are used in egress port selection. For example, you can specify both the **destination-mac** *mac-address* and **destination-ip** *ip-address* options. If only the destination MAC address is used for selecting the egress port, the **Load sharing parameters** field does not display the **destination-ip** parameter.

If a parameter required for selecting the egress port is not specified, the default value of the parameter is used. If the parameter does not have any default values, the parameter is set to 0.

## Examples

# Display forwarding information for the specified traffic flow to be sent out of Layer 2 aggregate interface Bridge-Aggregation 1.

```
<Sysname> display link-aggregation load-sharing path interface bridge-aggregation 1
ingress-port ten-gigabitethernet 1/0/1 destination-mac 0000-fc00-0001 source-mac
0000-fc00-0002 source-ip 10.100.0.2 destination-ip 10.100.0.1
Load sharing mode: destination-mac, source-mac, source-ip, destination-ip
Unspecified parameters are set to 0.
Load-sharing parameters:
  Ingress port: Ten-GigabitEthernet1/0/1
  Destination MAC: 0000-fc00-0001
  Source MAC: 0000-fc00-0002
  Destination IP: 10.100.0.1
  Source IP: 10.100.0.2
Egress port: Ten-GigabitEthernet1/0/3
```

**Table 4 Command output**

| Field | Description |
|---|---|
| Load sharing mode: | Load sharing mode set for the aggregation group:<br>• **destination-mac**—Traffic is load shared based on destination MAC addresses.<br>• **source-mac**—Traffic is load shared based on source MAC addresses.<br>• **destination-ip**—Traffic is load shared based on destination IP addresses.<br>• **source-ip**—Traffic is load shared based on source IP addresses.<br>• **destination-port**—Traffic is load shared based on destination ports. |

| Field | Description |
|---|---|
| | • **source-port**—Traffic is load shared based on source ports.<br>• **mpls-label1**—Traffic is load shared based on Layer 1 MPLS labels.<br>• **mpls-label2**—Traffic is load shared based on Layer 2 MPLS labels.<br>• **ingress-port**—Traffic is load shared based on ingress ports.<br>• **packet type-based sharing**—Traffic is load shared automatically based on packet types. If no load sharing mode is set, this field also displays **packet type-based sharing**.<br>• **per-packet**—Traffic is load shared on a per-packet basis. |
| Load sharing parameters | Parameters that are used in egress port selection. |
| Egress port | Egress port of the specified traffic flow. If no egress port is found, this field displays **N/A**. |

# display link-aggregation member-port

Use **display link-aggregation member-port** to display detailed link aggregation information for the specified member ports.

**Syntax**

**display link-aggregation member-port** [ *interface-list* | **auto** ]

**Views**

Any view

**Predefined user roles**

network-admin

network-operator

**Parameters**

*interface-list*: Specifies a list of link aggregation member ports, in the format *interface-type interface-number1* [ **to** *interface-type interface-number2* ]. The value for the *interface-number2* argument must be equal to or greater than the value for the *interface-number1* argument.

**auto**: Specifies all link aggregation member ports that are enabled with automatic assignment.

**Usage guidelines**

A member port in a static aggregation group cannot obtain information about the peer group. For such member ports, the command displays the port number, port priority, and operational key of only the local end.

**Examples**

# Display detailed link aggregation information for Ten-GigabitEthernet 1/0/1, which is a member port of a static aggregation group.

```
<Sysname> display link-aggregation member-port ten-gigabitethernet 1/0/1
Flags: A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
       D -- Synchronization, E -- Collecting, F -- Distributing,
       G -- Defaulted, H -- Expired


Ten-GigabitEthernet1/0/1:
Aggregate Interface: Bridge-Aggregation1
Port Number: 1
```

```
Port Priority: 32768

Oper-Key: 1
```

# Display detailed link aggregation information for Ten-GigabitEthernet 1/0/2, which is a member port of a dynamic aggregation group.

```
<Sysname> display link-aggregation member-port ten-gigabitethernet 1/0/2

Flags: A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
       D -- Synchronization, E -- Collecting, F -- Distributing,
       G -- Defaulted, H -- Expired


Ten-GigabitEthernet1/0/2:
Aggregate Interface: Bridge-Aggregation10
Local:
    Port Number: 2
    Port Priority: 32768
    Oper-Key: 2
    Flag: {ACDEF}
Remote:
    System ID: 0x8000, 000f-e267-6c6a
    Port Number: 26
    Port Priority: 32768
    Oper-Key: 2
    Flag: {ACDEF}
Received LACP Packets: 5 packet(s)

Illegal: 0 packet(s)

Sent LACP Packets: 7 packet(s)
```

# Display detailed information about all link aggregation member ports that are enabled with automatic assignment.

```
<Sysname> display link-aggregation member-port auto

Flags: A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
       D -- Synchronization, E -- Collecting, F -- Distributing,
       G -- Defaulted, H -- Expired


Ten-GigabitEthernet1/0/3:
Preference Aggregation Interface: Bridge-Aggregation11
Aggregate Interface: Bridge-Aggregation11
Local:
    Port Number: 3
    Port Priority: 32768
    Oper-Key: 1
    Flag: {ACDEF}
Remote:
    System ID: 0x8000, a057-75a2-0100
    Port Number: 3
    Port Priority: 32768
    Oper-Key: 1
    Flag: {ACDEF}
Received LACP Packets: 3 packet(s)

Illegal: 0 packet(s)
```

```
Sent LACP Packets: 6 packet(s)
```

**Table 5 Command output**

| Field | Description |
|-------|-------------|
| Flags | LACP state flags. This field is one byte long, represented by ABCDEFGH from the least significant bit to the most significant bit. A letter appears when its bit is 1 and does not appear when its bit is 0. <br>• **A**—Indicates whether LACP is active on the port. 1 indicates active. 0 indicates passive. <br>• **B**—Indicates the LACP timeout interval. 1 indicates the short timeout interval. 0 indicates the long timeout interval. <br>• **C**—Indicates whether the sending system considers that the link is aggregatable. 1 indicates yes. 0 indicates no. <br>• **D**—Indicates whether the sending system considers that the link has been aggregated. 1 indicates yes. 0 indicates no. <br>• **E**—Indicates whether the sending system considers that the link can collect frames. 1 indicates yes. 0 indicates no. <br>• **F**—Indicates whether the sending system considers that the link can distribute frames. 1 indicates yes. 0 indicates no. <br>• **G**—Indicates whether the RX state machine of the sending system is in default state. 1 indicates yes. 0 indicates no. <br>• **H**—Indicates whether the RX state machine of the sending system is in expired state. 1 indicates yes. 0 indicates no. |
| Aggregate Interface | Aggregate interface to which the member port belongs. |
| Preferred Aggregate Interface | Aggregate interface to which you prefer to assign the member port during automatic assignment. |
| Local | Information about the local end. |
| Oper-key | Operational key. |
| Flag | LACP protocol state flag. |
| Remote | Information about the peer end. |
| System ID | Peer system ID, containing the system LACP priority and the system MAC address. |
| Received LACP Packets | Total number of LACP packets received. |
| Illegal | Total number of illegal packets. |
| Sent LACP Packets | Total number of LACP packets sent. |

# display link-aggregation summary

Use **display link-aggregation summary** to display brief information about all aggregation groups.

**Syntax**

**display link-aggregation summary**

**Views**

Any view

**Predefined user roles**

network-admin

network-operator

## Usage guidelines

Static link aggregation groups cannot obtain information about the peer groups. As a result, the **Partner ID** field displays nothing for a static link aggregation group.

## Examples

# Display brief information about all aggregation groups.

```
<Sysname> display link-aggregation summary
Aggregate Interface Type:
BAGG -- Bridge-Aggregation, BLAGG -- Blade-Aggregation, RAGG -- Route-Aggregation
Aggregation Mode: S -- Static, D -- Dynamic
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Actor System ID: 0x8000, 000f-e267-6c6a


AGG         AGG    Partner ID             Selected  Unselected  Individual  Share
Interface   Mode                          Ports     Ports       Ports       Type
-------------------------------------------------------------------------------
RAGG10      S      None                   1         0           0           NonS
BAGG20      D      0x8000,00e0-fcff-ff01  2         0           0           Shar
SCH-B1      S      None                   0         0           0           Shar
```

**Table 6 Command output**

| Field | Description |
|---|---|
| Aggregate Interface Type | Aggregate interface type:<br>• **BAGG**—Layer 2.<br>• **RAGG**—Layer 3.<br>• **SCH-B**—S-channel bundle. |
| Aggregation Mode | Aggregation group type:<br>• **S**—Static.<br>• **D**—Dynamic. |
| Loadsharing Type | Load sharing type:<br>• **Shar**—Load-sharing.<br>• **NonS**—Non-load-sharing. |
| Actor System ID | Local system ID, which contains the local system LACP priority and the local system MAC address. |
| AGG Interface | Type and number of the aggregate interface. |
| AGG Mode | Aggregation group type. |
| Partner ID | System ID of the peer system, which contains the peer system LACP priority and the peer system MAC address. |
| Selected Ports | Total number of Selected ports. |
| Unselected Ports | Total number of Unselected ports. |
| Individual Ports | Total number of Individual ports. |
| Share Type | Load sharing type. |

# display link-aggregation verbose

Use **display link-aggregation verbose** to display detailed information about the aggregation groups that correspond to the specified aggregate interfaces.

**Syntax**

**display link-aggregation verbose** [ { **bridge-aggregation** | **route-aggregation** | **schannel-bundle** } [ *interface-number* ] ]

**Views**

Any view

**Predefined user roles**

network-admin

network-operator

**Parameters**

**bridge-aggregation**: Specifies Layer 2 aggregate interfaces.

**route-aggregation**: Specifies Layer 3 aggregate interfaces.

**schannel-bundle**: Specifies S-channel bundle interfaces.

*interface-number*: Specifies an existing aggregate interface by its number.

**Usage guidelines**

If you do not specify an aggregate interface type, the command displays detailed information about all aggregation groups.

If you specify an aggregate interface type but do not specify an interface number, the command displays detailed information about all aggregation groups of the specified type.

The **bridge-aggregation**, **route-aggregation**, or **schannel-bundle** keyword is available only when the corresponding aggregate interfaces exist on the device.

This command does not display the interfaces that are enabled with automatic assignment if they have not joined an aggregation group.

**Examples**

# Display detailed information about Layer 2 aggregation group 10, which is a dynamic aggregation group.

```
<Sysname> display link-aggregation verbose bridge-aggregation 10
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Port Status: S -- Selected, U -- Unselected, I -- Individual
Port: A -- Auto port, M -- Management port, R -- Reference port
Flags:  A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
        D -- Synchronization, E -- Collecting, F -- Distributing,
        G -- Defaulted, H -- Expired

Aggregate Interface: Bridge-Aggregation10
Aggregation Mode: Dynamic
Loadsharing Type: Shar
Management VLANs: None
System ID: 0x8000, 000f-e267-6c6a
Local:
  Port                 Status   Priority Index    Oper-Key            Flag
```

```
  XGE1/0/1                  S        32768    61       2                      {ACDEF}
  XGE1/0/2                  S        32768    62       2                      {ACDEF}
  XGE1/0/3                  S        32768    63       2                      {ACDEF}
Remote:
  Actor                 Priority Index    Oper-Key SystemID          Flag
  XGE1/0/1(R)           32768    111      2        0x8000, 000f-e267-57ad {ACDEF}
  XGE1/0/2              32768    112      2        0x8000, 000f-e267-57ad {ACDEF}
  XGE1/0/3              32768    113      2        0x8000, 000f-e267-57ad {ACDEF}
```

# Display detailed information about Layer 2 aggregation group 20, which is a static aggregation group.

```
<Sysname> display link-aggregation verbose bridge-aggregation 20
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Port Status: S -- Selected, U -- Unselected, I -- Individual
Port: A -- Auto port, M -- Management port, R -- Reference port
Flags:  A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
        D -- Synchronization, E -- Collecting, F -- Distributing,
        G -- Defaulted, H -- Expired

Aggregate Interface: Bridge-Aggregation20
Aggregation Mode: Static
Loadsharing Type: Shar
Management VLANs: None
  Port               Status  Priority Oper-Key
  XGE1/0/1(R)        S       32768    1
  XGE1/0/2           S       32768    1
  XGE1/0/3           S       32768    1
```

# Display detailed information about S-channel bundle group 1, which is a static bundle group.

```
<Sysname> display link-aggregation verbose schannel-bundle 1
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Port Status: S -- Selected, U -- Unselected, I -- Individual
Port: A -- Auto port, M -- Management port, R -- Reference port
Flags:  A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
        D -- Synchronization, E -- Collecting, F -- Distributing,
        G -- Defaulted, H -- Expired

Aggregate Interface: Schannel-Bundle1
Aggregation Mode: Static
Loadsharing Type: NonS
Management VLANs: None
  Port               Status  Priority Oper-Key
  S-Ch1/0/1:1(R)     S       32768    1
  S-Ch1/0/1:2        S       32768    1
  S-Ch1/0/1:3        S       32768    1
```

**Table 7 Command output**

| Field | Description |
|---|---|
| Loadsharing Type | Load sharing type:<br>• **Shar**—Load-sharing. |

| Field | Description |
|---|---|
| | • **NonS**—Non-load-sharing. |
| Port Status | Port state:<br>• **Selected**.<br>• **Unselected**.<br>• **Individual**. |
| Port | Port type:<br>• **Auto port**—The port is enabled with automatic assignment.<br>• **Management port**—The port is a management port.<br>• **Reference port**—The port is a reference port. |
| Flags | LACP state flags. This field is one byte long, represented by ABCDEFGH from the least significant bit to the most significant bit. A letter appears when its bit is 1 and does not appear when its bit is 0.<br>• **A**—Indicates whether LACP is active on the port. 1 indicates active. 0 indicates passive.<br>• **B**—Indicates the LACP timeout interval. 1 indicates the short timeout interval. 0 indicates the long timeout interval.<br>• **C**—Indicates whether the sending system considers that the link is aggregatable. 1 indicates yes. 0 indicates no.<br>• **D**—Indicates whether the sending system considers that the link has been aggregated. 1 indicates yes. 0 indicates no.<br>• **E**—Indicates whether the sending system considers that the link can collect frames. 1 indicates yes. 0 indicates no.<br>• **F**—Indicates whether the sending system considers that the link can distribute frames. 1 indicates yes. 0 indicates no.<br>• **G**—Indicates whether the RX state machine of the sending system is in default state. 1 indicates yes. 0 indicates no.<br>• **H**—Indicates whether the RX state machine of the sending system is in expired state. 1 indicates yes. 0 indicates no. |
| Aggregate Interface | Name of the aggregate interface. |
| Aggregation Mode | Aggregation group type:<br>• **S**—Static.<br>• **D**—Dynamic. |
| Management VLANs | Management VLANs. If no management VLANs are specified, this field displays **None**. |
| System ID | Local system ID, containing the local system LACP priority and the local system MAC address. |
| Local | Information about the local end:<br>• **Port**—Port type and number.<br>• **Status**—Port state, which can be Selected, Unselected, or Individual.<br>• **Priority**—Port priority.<br>• **Index**—Port index.<br>• **Oper-Key**—Operational key.<br>• **Flag**—LACP state flag.<br>**NOTE:**<br>For static aggregation groups, the **Flag** field is not displayed. |
| Remote | Information about the peer end:<br>• **Actor**—Type and number of the local port. This field displays the **(R)** flag next to the port if its peer port is the reference port.<br>• **Priority**—Priority of the peer port. |

| Field | Description |
|---|---|
| | • **Index**—Index of the peer port. <br> • **Oper-Key**—Operational key of the peer port. <br> • **System ID**—System ID of the peer end. <br> • **Flag**—LACP state flag of the peer end. |

# interface bridge-aggregation

Use **interface bridge-aggregation** to create a Layer 2 aggregate interface and enter its view, or enter the view of an existing Layer 2 aggregate interface.

Use **undo interface bridge-aggregation** to delete a Layer 2 aggregate interface.

**Syntax**

**interface bridge-aggregation** *interface-number* [ **pex** ]

**undo interface bridge-aggregation** *interface-number*

**Default**

No Layer 2 aggregate interfaces exist.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

*interface-number*: Specifies a Layer 2 aggregate interface number. The value range for the *interface-number* argument is 1 to 2048.

**pex**: Creates a Layer 2 extended-link aggregate interface. If you specify this keyword, the Layer 2 extended-link aggregation group can contain only extended ports that are on the PEXs in the same PEX group and at the same tier. If you do not specify this keyword, the aggregation group cannot contain PEX extended ports. For more information about PEXs, see *Virtual Technologies Configuration Guide*.

**Usage guidelines**

When you create a Layer 2 aggregate interface, the system automatically creates a Layer 2 aggregation group with the same number. The aggregation group operates in static aggregation mode by default.

Deleting a Layer 2 aggregate interface also deletes the Layer 2 aggregation group. At the same time, the member ports of the aggregation group, if any, leave the aggregation group.

If the number of Layer 2 aggregate interfaces that you create without specifying the **pex** keyword reaches the hardware limit, the system displays a message about resource insufficiency. In such cases, you can attempt to create more Layer 2 aggregate interfaces by specifying the **pex** keyword.

Do not specify the **pex** keyword when you create Layer 2 aggregate interface Bridge-Aggregation 1.

**Examples**

# Create Layer 2 aggregate interface Bridge-Aggregation 1, and enter its view.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1]
```

# interface route-aggregation

Use **interface route-aggregation** to create a Layer 3 aggregate interface or subinterface and enter its view, or enter the view of an existing Layer 3 aggregate interface or subinterface.

Use **undo interface route-aggregation** to delete a Layer 3 aggregate interface or subinterface.

## Syntax

**interface route-aggregation** { *interface-number* | *interface-number.subnumber* }

**undo interface route-aggregation** { *interface-number* | *interface-number.subnumber* }

## Default

No Layer 3 aggregate interfaces or subinterfaces exist.

## Views

System view

## Predefined user roles

network-admin

## Parameters

*interface-number*: Specifies a Layer 3 aggregate interface number. The value range for the *interface-number* argument is 1 to 1024.

*interface-number.subnumber*: Specifies a subinterface of a Layer 3 aggregate interface. The *interface-number* argument specifies the main interface number. The *subnumber* argument specifies the subinterface number and is separated from the main interface number by a dot (.). The value range for the *subnumber* argument is 1 to 4094.

## Usage guidelines

When you create a Layer 3 aggregate interface, the system automatically creates a Layer 3 aggregation group with the same number. The Layer 3 aggregation group operates in static aggregation mode by default.

Deleting a Layer 3 aggregate interface also deletes the Layer 3 aggregation group and all its aggregate subinterfaces. At the same time, the member ports of the aggregation group, if any, leave the aggregation group.

Deleting a Layer 3 aggregate subinterface does not affect the state of the main interface and the corresponding aggregation group.

## Examples

# Create Layer 3 aggregate interface Route-Aggregation 1 and enter its view.

```
<Sysname> system-view
[Sysname] interface route-aggregation 1
[Sysname-Route-Aggregation1]
```

# Create Layer 3 aggregate subinterface Route-Aggregation 1.1 and enter its view.

```
<Sysname> system-view
[Sysname] interface route-aggregation 1.1
[Sysname-Route-Aggregation1.1]
```

# interface schannel-bundle

Use **interface schannel-bundle** to create an S-channel bundle interface and enter its view, or enter the view of an existing S-channel bundle interface.

Use **undo interface schannel-bundle** to delete an S-channel bundle interface.

**Syntax**

**interface schannel-bundle** *interface-number*

**undo interface schannel-bundle** *interface-number*

**Default**

No S-channel bundle interfaces exist.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

*interface-number*: Specifies an S-channel bundle interface number in the range of 1 to 1024.

**Usage guidelines**

When you create an S-channel bundle interface, the system automatically creates an S-channel bundle group with the same number as the interface. By default, this S-channel bundle group operates in static aggregation mode.

Deleting an S-channel bundle interface also deletes the S-channel bundle group. At the same time, the member ports of the bundle group, if any, leave the bundle group.

**Examples**

# Create S-channel bundle interface Schannel-Bundle 1 and enter its view.

```
<Sysname> system-view
[Sysname] interface schannel-bundle 1
[Sysname-Schannel-Bundle1]
```

# lacp edge-port

Use **lacp edge-port** to configure an aggregate interface as an edge aggregate interface.

Use **undo lacp edge-port** to restore the default.

**Syntax**

**lacp edge-port**

**undo lacp edge-port**

**Default**

An aggregate interface does not operate as an edge aggregate interface.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Usage guidelines**

Use this command on the aggregate interface that connects the device to a server if dynamic link aggregation is configured only on the device. This feature improves link reliability by enabling all member ports of the aggregation group to forward packets.

This command takes effect only on an aggregate interface corresponding to a dynamic aggregation group.

Link-aggregation traffic redirection cannot operate correctly on an edge aggregate interface.

**Examples**

# Configure Layer 2 aggregate interface Bridge-Aggregation 1 as an edge aggregate interface.
```
<Sysname> System-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] lacp edge-port
```

# lacp mode

Use **lacp mode passive** to configure LACP to operate in passive mode on a port.

Use **undo lacp mode** to restore the default.

**Syntax**

**lacp mode passive**

**undo lacp mode**

**Default**

LACP operates in active mode on a port.

**Views**

Layer 2 Ethernet interface view

Layer 3 Ethernet interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Usage guidelines**

This command takes effect only on member ports of dynamic aggregation groups.

When LACP is operating in passive mode on a local member port and its peer port, both ports cannot send LACPDUs. When LACP is operating in active mode on either end of a link, both ports can send LACPDUs.

**Examples**

# Configure LACP to operate in passive mode on Ten-GigabitEthernet 1/0/1.
```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] lacp mode passive
```

# lacp period short

Use **lacp period short** to set the short LACP timeout interval (3 seconds) on an interface.

Use **undo lacp period** to restore the default.

**Syntax**

**lacp period short**

**undo lacp period**

**Default**

The LACP timeout interval is the long timeout interval (90 seconds) on an interface.

**Views**

Layer 2 Ethernet interface view

Layer 3 Ethernet interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Usage guidelines**

To avoid traffic interruption during an ISSU, do not set the short LACP timeout interval before performing the ISSU. For more information about ISSU, see *Fundamentals Configuration Guide.*

**Examples**

# Set the short LACP timeout interval (3 seconds) on Ten-GigabitEthernet 1/0/1.

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

# lacp select speed

Use **lacp select speed** to configure a dynamic aggregation group to use port speed as the prioritized criterion for reference port selection.

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

**Syntax**

**lacp select speed**

**undo lacp select speed**

**Default**

Port ID is the prioritized criterion for reference port selection in a dynamic aggregation group.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Usage guidelines**

△ **CAUTION:**
Changing reference port selection criteria might cause transient traffic interruption. As a best practice, shut down the aggregate interface before you use this command.

This command enables a dynamic aggregation group to select a high-speed member port as the reference port.

Execute this command at both ends of the aggregate link so the peer aggregation systems use the same criteria for reference port selection.

This command takes effect only on dynamic aggregate interfaces.

**Examples**

# Specify port speed as the prioritized criterion for reference port selection on Layer 2 dynamic aggregate interface Bridge-Aggregation 1.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation mode dynamic
[Sysname-Bridge-Aggregation1] lacp select speed
```

# lacp system-mac

Use **lacp system-mac** to set the LACP system MAC address for S-MLAG.

Use **undo lacp system** to restore the default.

**Syntax**

**lacp system-mac** *mac-address*

**undo lacp system-mac**

**Default**

The LACP system MAC address is the bridge MAC address of the device.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

*mac-address*: Specifies a MAC address in the format of H-H-H. The MAC address cannot be an all-zero, all-F, or multicast MAC address.

**Usage guidelines**

All S-MLAG devices must use the same LACP system MAC address.

The LACP system MAC address configured by using this command takes effect only on aggregate interfaces in S-MLAG groups. Aggregate interfaces not in S-MLAG groups do not use the configured LACP system MAC address to send LACPDUs. To identify the LACP system MAC address used by a link aggregation group, examine the **System ID** field in the output from the **display link-aggregation verbose** command.

**Examples**

# Set the LACP system MAC address for S-MLAG to **0001-0001-0001**.

```
<Sysname> system-view
[Sysname] lacp system-mac 1-1-1
```

**Related commands**

**display link-aggregation verbose**

# lacp system-number

Use **lacp system-number** to set the LACP system number for S-MLAG used by the local device.

Use **undo lacp system-number** to restore the default.

**Syntax**

**lacp system-number** *number*

**undo lacp system-number**

**Default**

The LACP system number is not set.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

*number*: Specifies a number in the range of 1 to 3.

**Usage guidelines**

You must assign a unique LACP system number to each S-MLAG device.

The LACP system number configured by using this command takes effect only on aggregate interfaces in S-MLAG groups. Aggregate interfaces not in S-MLAG groups do not use the configured LACP system number in LACPDUs. To view the LACP system number in LACPDUs, examine the **Index** field in the output from the **display link-aggregation verbose** command.

**Examples**

# Set the LACP system number to 1.

```
<Sysname> system-view
[Sysname] lacp system-number 1
```

**Related commands**

**display link-aggregation verbose**

# lacp system-priority

Use **lacp system**-**priority** to set the system LACP priority.

Use **undo lacp system-priority** to restore the default.

**Syntax**

**lacp system-priority** *priority*

**undo lacp system-priority**

**Default**

The system LACP priority is 32768.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

*priority*: Specifies the system LACP priority in the range of 0 to 65535. The smaller the value, the higher the system LACP priority.

## Examples

# Set the system LACP priority to 64.

```
<Sysname> system-view
[Sysname] lacp system-priority 64
```

## Related commands

**link-aggregation port-priority**

# lacp transparent enable

Use **lacp transparent enable** to enable transparent LACPDU transmission on an interface.

Use **undo lacp transparent enable** to disable transparent LACPDU transmission on an interface.

## Syntax

**lacp transparent enable**

**undo lacp transparent enable**

## Default

Transparent LACPDU transmission is disabled.

## Views

Layer 2 Ethernet interface view

Layer 3 Ethernet interface view

## Predefined user roles

network-admin

## Usage guidelines

To establish a dynamic aggregation between two remote CEs, use transparent LACPDU transmission on the PEs to which the CEs attached.

On the PEs, enable transparent LACPDU transmission on the interfaces that transmit traffic between CEs and PEs and between PEs.

Do not use an interface for link aggregation if you enable transparent LACPDU transmission on that interface. With transparent LACPDU transmission enabled, an interface cannot be selected for aggregation.

## Examples

# Enable transparent LACPDU transmission on Ten-GigabitEthernet 1/0/1.

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

# link-aggregation bfd ipv4

Use **link-aggregation bfd ipv4** to enable BFD for an aggregation group.

Use **undo link-aggregation bfd** to disable BFD for an aggregation group.

## Syntax

**link-aggregation bfd ipv4 source** *ip-address* **destination** *ip-address*

**undo link-aggregation bfd**

**Default**

BFD is disabled for an aggregation group.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

**Predefined user roles**

network-admin

**Parameters**

**source** *ip-address*: Specifies the unicast source IP address of BFD sessions. The source IP address cannot be 0.0.0.0.

**destination** *ip-address*: Specifies the unicast destination IP address of BFD sessions. The destination IP address cannot be 0.0.0.0.

**Usage guidelines**

Make sure the source and destination IP addresses are consistent at the two ends of an aggregate link. For example, if you execute **link-aggregation bfd ipv4 source** 1.1.1.1 **destination** 2.2.2.2 on the local end, execute **link-aggregation bfd ipv4 source** 2.2.2.2 **destination** 1.1.1.1 on the peer end. The source and destination IP addresses cannot be the same.

The BFD parameters configured on an aggregate interface take effect on all BFD sessions established by the member ports in its aggregation group. BFD on a link aggregation supports only control packet mode for session establishment and maintenance. The two ends of an established BFD session can only operate in **Asynchronous** mode.

As a best practice, do not configure BFD for any protocols on a BFD-enabled aggregate interface.

Make sure the number of member ports in a BFD-enabled aggregation group is less than or identical to the number of BFD sessions supported by the device. If the aggregation group contains more member ports than the supported sessions, some Selected ports might change to the Unselected state.

If the number of BFD sessions differs between the two ends of an aggregate link, check their settings for inconsistency in the maximum number of Selected ports. You must make sure the two ends have the same setting for the maximum number of Selected ports.

**Examples**

# Enable BFD for Layer 2 aggregation group 1, and specify the source and destination IP addresses as 1.1.1.1 and 2.2.2.2 for BFD sessions.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation bfd ipv4 source 1.1.1.1 destination
2.2.2.2
```

# link-aggregation global load-sharing algorithm

Use **link-aggregation global load-sharing algorithm** to configure a link aggregation load sharing algorithm.

Use **undo link-aggregation global load-sharing algorithm** to restore the default.

**Syntax**

**link-aggregation global load-sharing algorithm** *algorithm-number*

**undo link-aggregation global load-sharing algorithm**

**Default**

Algorithm 5 is used.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

**algorithm** *algorithm-number*: Specifies an algorithm by its number in the range of 1 to 8.

**Usage guidelines**

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

If the device fails to load share traffic flows across all Selected ports, you can specify algorithm 1 to 13 in sequence until the problem is solved.

**Examples**

# Specify algorithm 1 as the link aggregation load sharing algorithm.

```
<Sysname> system-view
[Sysname] link-aggregation global load-sharing algorithm 1
```

**Related commands**

**display link-aggregation load-sharing mode**

**link-aggregation global load-sharing mode**

**link-aggregation global load-sharing seed**

**link-aggregation load-sharing mode**

# link-aggregation global load-sharing minm

Use **link-aggregation global load-sharing minm** to set the global load sharing mode for MAC-in-MAC traffic.

Use **undo link-aggregation global load-sharing minm** to restore the default.

**Syntax**

**link-aggregation global load-sharing minm** { **inner** | **outer** }

**undo link-aggregation global load-sharing minm**

**Default**

MAC-in-MAC traffic is load shared based on the inner frame header, and source and destination ports.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

**inner**: Specifies the inner frame header, and source and destination ports. The inner frame header contains the source and destination customer MAC addresses, VLAN ID, and Ethernet type.

**outer**: Specifies the outer frame header, and source and destination ports. The outer frame header contains the I-SID, and source and destination backbone MAC addresses.

### Usage guidelines

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

For more information about MAC-in-MAC, see PBB configuration in *Layer 2—LAN Switching Configuration Guide*.

### Examples

# Set the global load sharing mode to load share MAC-in-MAC traffic based on the inner frame header, and source and destination ports.

```
<Sysname> system-view
[Sysname] link-aggregation global load-sharing minm inner
```

# link-aggregation global load-sharing mode

Use **link-aggregation global load-sharing mode** to set the global link-aggregation load sharing mode.

Use **undo link-aggregation global load-sharing mode** to restore the default.

### Syntax

**link-aggregation global load-sharing mode** { **destination-ip** | **destination-mac** | **destination-port** | **ingress-port** | **mpls-label1** | **mpls-label2** | **source-ip** | **source-mac** | **source-port** } *

**undo link-aggregation global load-sharing mode**

### Default

The device selects a load sharing mode for packets depending on their packet type, as follows:

- Layer 3 (or IP) packets (frames with a value of 0x0800 or 0x86DD in the EtherType field) are load shared based on the following information:
  - Source and destination IP addresses.
  - Source and destination TCP/UDP port numbers.
  - IP protocol number.
- Layer 2 packets (frames with a different value than 0x0800 and 0x86DD in the EtherType field) are load shared based on the following information:
  - Source and destination MAC addresses.
  - EtherType value.
  - VLAN tag.
  - Mod ID.
  - Incoming and outgoing port numbers.

### Views

System view

### Predefined user roles

network-admin

### Parameters

**destination-ip**: Load shares traffic based on destination IP addresses.

**destination-mac**: Load shares traffic based on destination MAC addresses.

**destination-port**: Load shares traffic based on destination ports.

**ingress-port**: Load shares traffic based on ingress ports.

**mpls-label1**: Load shares MPLS traffic based on Layer 1 labels.

**mpls-label2**: Load shares MPLS traffic based on Layer 2 labels.

**source-ip**: Load shares traffic based on source IP addresses.

**source-mac**: Load shares traffic based on source MAC addresses.

**source-port**: Load shares traffic based on source ports.

### Usage guidelines

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

If an unsupported load sharing mode is set, an error prompt appears.

In system view, the switch supports the following load sharing modes:

- Load sharing mode automatically determined based on the packet type.
- Source IP address.
- Destination IP address.
- Source MAC address.

---

**NOTE:**

Packets cannot be load shared based on source MAC addresses when the destination IP addresses of the packets match multiport ARP entries. For more information about multiport ARP entries, see *Layer 3—IP Services Configuration Guide*.

---

- Destination MAC address.
- Layer 1 MPLS label.
- Layer 2 MPLS label.
- Source IP address and destination IP address.
- Source IP address and source port.
- Destination IP address and destination port.
- Layer 1 MPLS label and Layer 2 MPLS label.
- Source IP address, source port, destination IP address, and destination port.
- Any combination of ingress port, source MAC address, and destination MAC address.

### Examples

\# Set the global load sharing mode to load share packets based on destination MAC addresses.

```
<Sysname> system-view
[Sysname] link-aggregation global load-sharing mode destination-mac
```

### Related commands

**link-aggregation load-sharing mode**

# link-aggregation global load-sharing seed

Use **link-aggregation global load-sharing seed** to configure a link aggregation load sharing hash seed.

Use **undo link-aggregation global load-sharing seed** to restore the default.

### Syntax

**link-aggregation global load-sharing seed** *seed-number*

**undo link-aggregation global load-sharing seed**

**Default**

Hash seed 0 is used.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

**seed** *seed-number*: Specifies a seed in the range of 0 to ffffffff.

**Usage guidelines**

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

You can configure only the algorithm or the hash seed, or both. You can combine an algorithm with different hash seeds to obtain different effects.

**Examples**

# Specify 1023 (3FF in hexadecimal format) as the link aggregation load sharing hash seed.

```
<Sysname> system-view
[Sysname] link-aggregation global load-sharing seed 3FF
```

**Related commands**

- **display link-aggregation load-sharing mode**
- **link-aggregation global load-sharing algorithm**
- **link-aggregation global load-sharing mode**
- **link-aggregation load-sharing mode**

# link-aggregation ignore speed

Use **link-aggregation ignore speed** to configure an aggregation group to ignore port speed in setting the aggregation states of member ports.

Use **undo link-aggregation ignore speed** to restore the default.

**Syntax**

**link-aggregation ignore speed**

**undo link-aggregation ignore speed**

**Default**

An aggregation group does not ignore port speed in setting the aggregation states of member ports.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

**Predefined user roles**

network-admin

**Usage guidelines**

This command allows ports at a different speed than the reference port to become Selected by ignoring the port speed during operational key calculation.

You must configure the same port speed ignoring setting at the two ends of a static configuration to ensure that the peer ports are placed in the same aggregation state. This requirement does not apply to a dynamic aggregation, on which the two ends negotiate the aggregation state of the peer ports automatically.

### Examples

# Configure Layer 2 aggregation group 1 to ignore port speed in setting the aggregation states of member ports.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation ignore speed
```

# link-aggregation ignore vlan

Use **link-aggregation ignore vlan** to configure a Layer 2 aggregate interface to ignore the specified VLANs.

Use **undo link-aggregation ignore vlan** to remove the specified ignored VLANs for a Layer 2 aggregate interface.

### Syntax

**link-aggregation ignore vlan** *vlan-id-list*

**undo link-aggregation ignore vlan** *vlan-id-list*

### Default

A Layer 2 aggregate interface does not ignore any VLANs.

### Views

Layer 2 aggregate interface view

### Predefined user roles

network-admin

### Parameters

*vlan-id-list*: Specifies a space-separated list of up to 10 VLAN items. Each item specifies a VLAN ID or a range of VLAN IDs in the form of *vlan-id1* to *vlan-id2*. The value range for VLAN IDs is 1 to 4094. The value for the *vlan-id2* argument must be equal to or greater than the value for the *vlan-id1* argument.

### Usage guidelines

This command takes effect only when the link type of the Layer 2 aggregate interface is hybrid or trunk.

With this command configured, a Layer 2 aggregate interface ignores the permitted VLAN and VLAN tagging mode configuration of the specified VLANs when choosing Selected ports.

### Examples

# Configure Layer 2 aggregate interface **bridge-aggregation 1** to ignore VLAN 50.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation ignore vlan 50
```

# link-aggregation lacp traffic-redirect-notification enable

Use **link-aggregation lacp traffic-redirect-notification enable** to enable link-aggregation traffic redirection.

Use **undo link-aggregation lacp traffic-redirect-notification enable** to disable link-aggregation traffic redirection.

### Syntax

**link-aggregation lacp traffic-redirect-notification enable**

**undo link-aggregation lacp traffic-redirect-notification enable**

### Default

Link-aggregation traffic redirection is disabled.

### Views

System view

Layer 2 aggregate interface view

Layer 3 aggregate interface view

### Predefined user roles

network-admin

### Usage guidelines

This feature redirects traffic on a Selected port to the remaining available Selected ports of an aggregation group if one of the following events occurs:

- The port is shut down by using the **shutdown** command.
- The slot that hosts the port reboots, and the aggregation group spans multiple slots.

This feature ensures zero packet loss for known unicast traffic, but does not protect unknown unicast traffic.

This feature applies only to dynamic link aggregation groups.

To prevent traffic interruption, enable link-aggregation traffic redirection on devices at both ends of the aggregate link.

To prevent packet loss that might occur when a slot reboots, do not enable spanning tree together with link-aggregation traffic redirection.

Link-aggregation traffic redirection cannot operate correctly on an edge aggregate interface.

Global link-aggregation traffic redirection settings take effect on all aggregation groups. A link aggregation group preferentially uses the group-specific link-aggregation traffic redirection settings. If group-specific link-aggregation traffic redirection is not configured, the group uses the global link-aggregation traffic redirection settings.

As a best practice, enable link-aggregation traffic redirection on aggregate interfaces. If you enable this feature globally, communication with a third-party peer device might be affected if the peer is not compatible with this feature.

### Examples

# Enable link-aggregation traffic redirection.

```
<Sysname> system-view
[Sysname] link-aggregation lacp traffic-redirect-notification enable
```

# link-aggregation load-sharing ignore

Use **link-aggregation load-sharing ignore** to specify ignored packet fields for default link-aggregation load sharing.

Use **undo link-aggregation load-sharing ignore** to restore the default.

**Syntax**

**link-aggregation load-sharing ignore** { **destination-ip** | **destination-mac** | **destination-port** | **ethernet-type** | **ingress-port** | **ip-protocol** | **mpls-label1** | **mpls-label2** | **mpls-label3** | **source-ip** | **source-mac** | **source-port** | **vlan-id** } *

**undo link-aggregation load-sharing ignore**

**Default**

No ignored packet fields are specified for default link-aggregation load sharing.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

**destination-ip**: Specifies the destination IP address.

**destination-mac**: Specifies the destination MAC address.

**destination-port**: Specifies the destination port.

**ethernet-type**: Specifies the EtherType value.

**ingress-port**: Specifies the ingress port.

**ip-protocol**: Specifies IP protocol type.

**mpls-label1**: Specifies Layer 1 MPLS label.

**mpls-label2**: Specifies Layer 2 MPLS label.

**mpls-label3**: Specifies Layer 3 MPLS label.

**source-ip**: Specifies the source IP address.

**source-mac**: Specifies the source MAC address.

**source-port**: Specifies the source port.

**vlan-id**: Specifies the VLAN ID.

**Usage guidelines**

In default load sharing mode, an aggregation group might fail to load share traffic in a balanced manner. To resolve the problem, you can configure the device to ignore specific packet fields for link-aggregation load sharing. The specified packet field values are ignored in load sharing calculation.

**Examples**

# Configure the device to ignore the EtherType value for default link-aggregation load sharing.

```
<Sysname> system-view
[Sysname] link-aggregation load-sharing ignore ethernet-type
```

**Related commands**

**link-aggregation global load-sharing mode**

# link-aggregation load-sharing mode

Use **link-aggregation load-sharing mode** to set the link-aggregation load sharing mode for an aggregation group.

Use **undo link-aggregation load-sharing mode** to restore the default.

**Syntax**

**link-aggregation load-sharing mode** { { **destination-ip** | **destination-mac** | **source-ip** | **source-mac** } * | **flexible** | **per-packet** }

**undo link-aggregation load-sharing mode**

**Default**

The group-specific load sharing mode is the same as the global load sharing mode.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

**Predefined user roles**

network-admin

**Parameters**

**destination-ip**: Distributes traffic based on destination IP addresses.

**destination-mac**: Distributes traffic based on destination MAC addresses.

**source-ip**: Distributes traffic based on source IP addresses.

**source-mac**: Distributes traffic based on source MAC addresses.

**flexible**: Distributes traffic flexibly based on the packet types (Layer 2 protocol packet, IPv4 packet, IPv6 packet, or MPLS packet).

**per-packet**: Distributes traffic on a per-packet basis.

**Usage guidelines**

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

If an unsupported load sharing mode is set, an error prompt appears.

In aggregate interface view, the switch supports the following load sharing modes:

- Load sharing mode automatically determined based on the packet type.
- Per-packet load sharing.
- Source IP address.
- Destination IP address.
- Source MAC address.

> **NOTE:**
>
> Packets cannot be load shared based on source MAC addresses when the destination IP addresses of the packets match multiport ARP entries. For more information about multiport ARP entries, see *Layer 3—IP Services Configuration Guide*.

- Destination MAC address.
- Destination IP address and source IP address.
- Destination MAC address and source MAC address.

**Examples**

# Configure Layer 2 aggregation group 1 to load share packets based on destination MAC addresses.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation load-sharing mode destination-mac
```

**Related commands**

link-aggregation global load-sharing mode

# link-aggregation load-sharing mode local-first

Use **link-aggregation load-sharing mode local-first** to enable local-first load sharing for link aggregation.

Use **undo link-aggregation load-sharing mode local-first** to disable local-first load sharing for link aggregation.

**Syntax**

link-aggregation load-sharing mode local-first

undo link-aggregation load-sharing mode local-first

**Default**

Local-first load sharing is enabled for link aggregation.

**Views**

System view

**Predefined user roles**

network-admin

**Usage guidelines**

After you disable local-first load sharing, the packets will be load shared among all Selected ports of the aggregate interface on all IRF member devices.

On a VXLAN network, you must enable local-first load sharing on the transport-facing interface for a VXLAN tunnel if that interface is one of the following types:

- Layer 3 aggregate interface.
- VLAN interface for a VLAN that contains Layer 2 aggregate interfaces.

For more information about VXLAN, see *VXLAN Configuration Guide*.

**Examples**

# Disable local-first load sharing for link aggregation.

```
<Sysname> system-view
[Sysname] undo link-aggregation load-sharing mode local-first
```

# link-aggregation management-port

Use **link-aggregation management-port** to configure a management port for an aggregation group.

Use **undo link-aggregation management-port** to restore the default.

**Syntax**

link-aggregation management-port

undo link-aggregation management-port

**Default**

A port does not act as a management port.

**Views**

Layer 2 Ethernet interface view

**Predefined user roles**

network-admin

**Usage guidelines**

You can execute this command on multiple member ports of an aggregation group. The system chooses the member port with the smallest port number as the management port of the aggregation group.

**Examples**

# Configure Ten-GigabitEthernet 1/0/1 as the management port of its aggregation group.

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

# link-aggregation management-subnet

Use **link-aggregation management-subnet** to specify a link aggregation management subnet.

Use **undo link-aggregation management-subnet** to remove a link aggregation management subnet.

**Syntax**

**link-aggregation management-subnet** *ip-address* { *mask* | *mask-length* }

**undo link-aggregation management-subnet** *ip-address* { *mask* | *mask-length* }

**Default**

No link aggregation management subnets are specified.

**Views**

System view

**Predefined user roles**

network-admin

**Parameters**

*ip-address*: Specifies an IP address in dotted decimal notation.

*mask*: Specifies the subnet mask in dotted decimal notation.

*mask-length*: Specifies the mask length. The value range is 0 to 32.

**Usage guidelines**

Typically, an aggregate interface distributes traffic across its Selected member ports. The uplink and downlink traffic of a host might be distributed to different member ports. To make sure the bidirectional traffic of a subnet traverses the same member port, you can exclude that subnet from load sharing by specifying it as a link aggregation management subnet.

When a link aggregate interface receives an ARP packet from the management subnet, the device looks up the sender IP address in the ARP table for a matching entry.

- If no matching entry exists, the device creates an ARP entry on the aggregation member port from which the packet came in. This mechanism ensures that the returned downlink traffic will be forwarded out of the member port that received the uplink traffic.

- If an ARP entry already exists on a different port than the link aggregate interface or its member ports, the device does not update that ARP entry. Instead, the device broadcasts an ARP request out of all ports to relearn the ARP entry.

When a link aggregate interface sends an ARP packet to the management subnet, the device sends the packet out of all Selected member ports of the link aggregate interface.

You can configure a maximum of 20 management subnets.

To ensure correct packet forwarding, delete all ARP entries of a subnet before you specify it as a management subnet or after you remove it from the management subnet list.

If you are using link aggregation management subnets, do not use the following features:

- DRNI. For more information, see *Layer 2—LAN Switching Configuration Guide*.
- ARP snooping. For more information, see *Layer 3—IP Services Configuration Guide*.
- MPLS L2VPN. For more information, see *MPLS Configuration Guide*.

## Examples

# Specify 22.1.1.1/8 as a link aggregation management subnet.

```
<Sysname> system-view
[Sysname] link-aggregation management-subnet 22.1.1.1 255.0.0.0
```

# link-aggregation management-vlan

Use **link-aggregation management-vlan** to specify link aggregation management VLANs.

Use **undo link-aggregation management-vlan** to remove link aggregation management VLANs.

## Syntax

**link-aggregation management-vlan** *vlan-id-list*

**undo link-aggregation management-vlan** *vlan-id-list*

## Default

No link aggregation management VLANs are specified.

## Views

System view

## Predefined user roles

network-admin

## Parameters

*vlan-id-list*: Specifies a space-separated list of up to 10 link aggregation management VLAN items. Each item specifies a VLAN ID or a range of VLAN IDs in the form of *vlan-id1* to *vlan-id2*. The value range for VLAN IDs is 1 to 4094. The value for the *vlan-id2* argument must be equal to or greater than the value for the *vlan-id1* argument.

## Usage guidelines

If you execute this command multiple times, the system allows all specified management VLANs whose total number cannot exceed 64.

You cannot specify VLAN 1 as a link aggregation management VLAN.

## Examples

# Specify VLAN 2 and VLAN 3 as link aggregation management VLANs.

```
<Sysname> system-view
[Sysname] link-aggregation management-vlan 2 3
```

# link-aggregation mode

Use **link-aggregation mode dynamic** to configure an aggregation group to operate in dynamic aggregation mode and enable LACP.

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

**Syntax**

**link-aggregation mode dynamic**

**undo link-aggregation mode**

**Default**

An aggregation group operates in static aggregation mode.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Usage guidelines**

When you change the aggregation mode, make sure you understand the impact of the change on services.

Aggregation mode change might cause Selected member ports to become Unselected.

If a dynamic aggregation group contains member ports enabled with automatic assignment, changing the aggregation mode to static also disables automatic assignment on those member ports.

**Examples**

# Configure Layer 2 aggregation group 1 to operate in dynamic aggregation mode.
```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation mode dynamic
```

# link-aggregation port-priority

Use **link-aggregation port-priority** to set the port priority of an interface.

Use **undo link-aggregation port-priority** to restore the default.

**Syntax**

**link-aggregation port-priority** *priority*

**undo link-aggregation port-priority**

**Default**

The port priority of an interface is 32768.

**Views**

Layer 2 Ethernet interface view

Layer 3 Ethernet interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Parameters**

*priority*: Specifies the port priority in the range of 0 to 65535. The smaller the value, the higher the port priority.

**Examples**

# Set the port priority to 64 for Layer 2 Ethernet interface Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] link-aggregation port-priority 64
```

# Set the port priority to 64 for Layer 3 Ethernet interface Ten-GigabitEthernet 1/0/2.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/2
[Sysname-Ten-GigabitEthernet1/0/2] link-aggregation port-priority 64
```

**Related commands**

**lacp system-priority**

# link-aggregation selected-port maximum

Use **link-aggregation selected-port maximum** to set the maximum number of Selected ports allowed in an aggregation group.

Use **undo link-aggregation selected-port maximum** to restore the default.

**Syntax**

**link-aggregation selected-port maximum** *max-number*

**undo link-aggregation selected-port maximum**

**Default**

The maximum number of Selected ports allowed in an aggregation group is 32.

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Parameters**

*max-number*: Specifies the maximum number of Selected ports allowed in an aggregation group. The value range for this argument is 1 to 32.

**Usage guidelines**

Executing this command might cause some of the Selected ports in an aggregation group to become Unselected ports.

The maximum number of Selected ports allowed in the aggregation groups must be the same for the local and peer ends.

The maximum number of Selected ports allowed in an aggregation group is limited by one of the following values, whichever value is smaller:

- Maximum number set by using the **link-aggregation selected-port maximum** command.

- Maximum number of Selected ports allowed by the link aggregation capability.

You can implement backup between two ports by performing the following tasks:

- Assigning two ports to an aggregation group.

- Setting the maximum number of Selected ports to 1 for the aggregation group.

Then, only one Selected port is allowed in the aggregation group at any point in time, while the Unselected port acts as a backup port.

### Examples

# Set the maximum number of Selected ports to 5 for Layer 2 aggregation group 1.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation selected-port maximum 5
```

### Related commands

**link-aggregation selected-port minimum**

# link-aggregation selected-port minimum

Use **link-aggregation selected-port minimum** to set the minimum number of Selected ports in an aggregation group.

Use **undo link-aggregation selected-port minimum** to restore the default.

### Syntax

**link-aggregation selected-port minimum** *min-number*

**undo link-aggregation selected-port minimum**

### Default

The minimum number of Selected ports in an aggregation group is not specified.

### Views

Layer 2 aggregate interface view

Layer 3 aggregate interface view

S-channel bundle interface view

### Predefined user roles

network-admin

### Parameters

*min-number*: Specifies the minimum number of Selected ports in an aggregation group required to bring up the aggregate interface. The value range for this argument is 1 to 32.

### Usage guidelines

Executing this command might cause all member ports in the aggregation group to become Unselected ports.

The minimum number of Selected ports allowed in the aggregation groups must be the same for the local and peer ends.

### Examples

# Set the minimum number of Selected ports to 3 for Layer 2 aggregation group 1.

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

```
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] link-aggregation selected-port minimum 3
```

**Related commands**

> **link-aggregation selected-port maximum**

# port s-mlag group

Use **port s-mlag group** to assign an aggregate interface to an S-MLAG group.

Use **undo port s-mlag group** to restore the default.

**Syntax**

> **port s-mlag group** *group-id*
>
> **undo port s-mlag group**

**Default**

> An aggregate interface is not in any S-MLAG group.

**Views**

> Layer 2 aggregate interface view

**Predefined user roles**

> network-admin

**Parameters**

> *group-id*: Specifies an S-MLAG group number in the range of 1 to 1024.

**Usage guidelines**

> You can assign only Layer 2 aggregate interfaces in dynamic mode to an S-MLAG group.
>
> Each S-MLAG group can contain only one aggregate interface on each device.
>
> The aggregate interfaces in an S-MLAG group cannot be used as DR interfaces or IPPs in DRNI. For more information about DR interfaces and IPPs, see DRNI configuration in *Layer 2—LAN Switching Configuration Guide*.

**Examples**

> # Assign Bridge-Aggregation 1 to S-MLAG group 1.
> ```
> <Sysname> system-view
> [Sysname] interface bridge-aggregation 1
> [Sysname-Bridge-Aggregation1] port s-mlag group 1
> ```

# mac-address

Use **mac-address** to change the MAC address of a Layer 3 aggregate interface or subinterface.

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

**Syntax**

> **mac-address** *mac-address*
>
> **undo mac-address**

**Default**

> All Layer 3 aggregate interfaces and subinterfaces on the device use the same default MAC address.

**Views**

Layer 3 aggregate interface view

Layer 3 aggregate subinterface view

**Predefined user roles**

network-admin

**Parameters**

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

**Usage guidelines**

The default MAC address of Layer 3 aggregate interfaces and subinterfaces varies by device. You can use the **display interface** command to view the MAC address of a Layer 3 aggregate interface or subinterface.

Do not use this command on a border gateway of a VXLAN or EVPN network.

The bridge MAC address of the device and its subsequent higher 169 consecutive MAC addresses are reserved. To avoid forwarding failure, do not assign a reserved MAC address to an aggregate interface or subinterface.

To avoid forwarding failure after an IRF master/subordinate switchover, do not assign the IRF bridge MAC address to an aggregate interface or subinterface. For more information about the IRF bridge MAC address, see *Virtual Technologies Configuration Guide*.

**Examples**

# Set the MAC address to 0001-0001-0002 for Layer 3 aggregate interface Route-Aggregation 1.

```
<Sysname> system-view
[Sysname] interface route-aggregation 1
[Sysname-Route-Aggregation1] mac-address 1-1-2
```

# mtu

Use **mtu** to set the MTU for a Layer 3 aggregate interface or subinterface.

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

**Syntax**

**mtu** *size*

**undo mtu**

**Default**

The MTU for Layer 3 aggregate interfaces and subinterfaces is 1500 bytes.

**Views**

Layer 3 aggregate interface view

Layer 3 aggregate subinterface view

**Predefined user roles**

network-admin

**Parameters**

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

**Examples**

# Set the MTU to 1430 bytes for Layer 3 aggregate interface Route-Aggregation 1.

```
<Sysname> system-view
[Sysname] interface route-aggregation 1
[Sysname-Route-Aggregation1] mtu 1430
```

**Related commands**

> **display interface**

# port bridge enable

Use **port bridge enable** to enable port bridging on a Layer 2 aggregate interface.

Use **undo port bridge enable** to disable port bridging on a Layer 2 aggregate interface.

**Syntax**

> **port bridge enable**

> **undo port bridge enable**

**Default**

Port bridging is disabled on a Layer 2 aggregate interface.

**Views**

Layer 2 aggregate interface view

**Predefined user roles**

network-admin

**Usage guidelines**

By default, the device drops a packet if its outgoing interface is the incoming interface where the packet arrived. Port bridging enables a Layer 2 aggregate interface to reflect a packet back when it is both the incoming and outgoing interfaces of that packet.

**Examples**

# Enable port bridging on Bridge-Aggregation 1.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] port bridge enable
```

# port link-aggregation group

Use **port link-aggregation group** to assign an interface to an aggregation group.

Use **undo port link-aggregation group** to remove an interface from the aggregation group to which it belongs.

**Syntax**

> **port link-aggregation group** { *group-id* [ **force** ] | **auto** [ *group-id* ] }

> **undo port link-aggregation group**

**Default**

An interface does not belong to any aggregation group.

**Views**

Layer 2 Ethernet interface view

Layer 3 Ethernet interface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Parameters**

*group-id*: Specifies an aggregation group by its aggregate interface number. For Layer 2 aggregation groups, the value range for the *number* argument is 1 to 2048. For Layer 3 aggregation groups, the value range for the *number* argument is 1 to 1024.

**force**: Enables the current interface to synchronize the attribute configurations from the aggregate interface. If you do not specify this keyword, the current interface does not synchronize attribute configurations from the aggregate interface when it joins the aggregation group. This keyword is supported only on Layer 2 Ethernet interfaces.

**auto**: Enables automatic assignment.

**Usage guidelines**

A Layer 2 Ethernet interface can be assigned only to a Layer 2 aggregation group. A Layer 3 Ethernet interface can be assigned only to a Layer 3 aggregation group. An S-channel interface can be assigned only to an S-channel bundle group.

An interface can belong to only one aggregation group.

The **force** keyword takes effect only when you assign the interface to an aggregation group. It cannot be saved in the running configuration or a configuration file.

Automatic assignment is available only on Layer 2 and Layer 3 Ethernet interfaces.

When you enable automatic assignment, you can specify a preferred aggregation group, which must be in dynamic mode.

The device assigns the interface to the preferred aggregation group as long as the LACPDUs received on the interface match the peer information of the reference port in the group.

If you do not specify a preferred group or if the preferred group match fails, the device attempts to select a matching group from the existing dynamic aggregation groups. If no match is found, the device creates a dynamic aggregation group based on the LACPDUs and assigns the interface to that aggregation group.

**Examples**

# Assign Layer 2 Ethernet interface Ten-GigabitEthernet 1/0/1 to Layer 2 aggregation group 1.

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

# Assign Layer 3 Ethernet interface Ten-GigabitEthernet 1/0/2 to Layer 3 aggregation group 2.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/2
[Sysname-Ten-GigabitEthernet1/0/2] port link-aggregation group 2
```

# reset counters interface

Use **reset counters interface** to clear statistics for the specified aggregate interfaces.

**Syntax**

**reset counters interface** [ { **bridge-aggregation** | **route-aggregation** | **schannel-bundle** } [ *interface-number* ] ]

**Views**

User view

**Predefined user roles**

network-admin

**Parameters**

**bridge-aggregation**: Specifies Layer 2 aggregate interfaces.

**route-aggregation**: Specifies Layer 3 aggregate interfaces.

**schannel-bundle**: Specifies S-channel bundle interfaces.

*interface-number*: Specifies an existing aggregate interface number.

**Usage guidelines**

Use this command to clear history statistics before you collect traffic statistics for a time period.

If you do not specify an aggregate interface type, the command clears statistics for all interfaces in the system.

If you specify only an aggregate interface type, the command clears statistics for all aggregate interfaces of the specified type.

The **bridge-aggregation**, **route-aggregation**, or **schannel-bundle** keyword is available only when the corresponding aggregate interfaces exist on the device.

**Examples**

# Clear statistics for Layer 2 aggregate interface Bridge-Aggregation 1.

```
<Sysname> reset counters interface bridge-aggregation 1
```

# reset lacp statistics

Use **reset lacp statistics** to clear LACP statistics for the specified link aggregation member ports.

**Syntax**

**reset lacp statistics** [ **interface** *interface-list* ]

**Views**

User view

**Predefined user roles**

network-admin

**Parameters**

**interface** *interface-list*: Specifies a list of link aggregation member ports, in the format *interface-type interface-number1* [ **to** *interface-type interface-number2* ]. The value for the *interface-type interface-number1* argument must be equal to or greater than the value for the *interface-type interface-number2* argument. If you do not specify any member ports, the command clears LACP statistics for all member ports.

**Examples**

# Clear LACP statistics for all link aggregation member ports.

```
<Sysname> reset lacp statistics
```

**Related commands**

**display link-aggregation member-port**

# shutdown

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

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

**Syntax**

**shutdown**

**undo shutdown**

**Views**

Layer 2 aggregate interface view

Layer 3 aggregate interface view

Layer 3 aggregate subinterface view

S-channel bundle interface view

**Predefined user roles**

network-admin

**Usage guidelines**

Shutting down or bringing up a Layer 3 aggregate interface shuts down or brings up its subinterfaces. Shutting down or bringing up a Layer 3 aggregate subinterface does not affect its main interface.

**Examples**

# Bring up Layer 2 aggregate interface Bridge-Aggregation 1.

```
<Sysname> system-view
[Sysname] interface bridge-aggregation 1
[Sysname-Bridge-Aggregation1] undo shutdown
```