1 Aggregate Port Commands

Command	Function
aggregate bfd-detect	Enable the bidirectional forwarding detection (BFD) function of an aggregate port (AP) member port.
aggregateport algorithm mode	Configure the load balancing algorithm mode for all APs.
aggregateport capacity mode	Configure the capacity mode of an AP.
aggregateport load-balance	Configure the global load balancing algorithm of APs or the load balancing algorithm of a specified AP.
aggregateport member linktrap	Enable the LinkTrap notification sending function of member ports of an AP.
aggregateport member minimum	Configure the minimum number of member ports of an AP or the action to be triggered when the number of member ports of an AP is less than the minimum number.
aggregateport primary-port	Configure a member port of an AP as a preferred port.
clear lacp counters	Clear the Link Aggregation Control Protocol (LACP) packet statistics from an LACP AP member port.
debug lacp	Enable the LACP debugging function.
hash-disturb	Configure a load balancing hash disturbance factor.
hash-symmetrical	Configure the load balancing hash synchronization factor.
interface aggregateport	Configure the Ethernet AP or enter the interface configuration mode of Ethernet AP.
ipv4 field	Configure the load balancing mode of IPv4 packets in the specified enhanced load balancing profile.
ipv6 field	Configure the load balancing mode of IPv6 packets in the specified enhanced load balancing profile.
l2 field	Configure the load balancing mode of L2 packets in the specified enhanced load balancing profile.
lacp device	Configure the device ID of LACP.

lacp individual-port enable	Enable the LCAP independent port function.
lacp individual-timeout period	Configure the timeout period of an LACP independent port.
lacp port-priority	Configure the port priority of an LACP AP member port.
lacp short-timeout	Configure the timeout mode of an LACP AP member port to the short timeout mode.
lacp short-timeout period	Configure the timeout period of the LACP system in short timeout mode.
lacp system-id	Configure the LACP system ID.
lacp system-priority	Configure the LACP system priority.
load-balance-profile	Rename the enhanced load balancing profile and enter the enhanced load balancing profile mode.
port-group	Configure an Ethernet physical port as a member port of a static AP.
show aggregateport load-balance	View the global load balancing information of an AP.
show aggregateport summary	Display the configuration of an AP.
show aggregateport capacity	Display the capacity mode and capacity usage of the current AP.
show lacp counters	Display the packet statistics of an LACP AP member port.
show lacp summary	Display the state of an LACP AP.
show load-balance-profile	Display the configuration of the enhanced load balancing mode.

1.1 aggregate bfd-detect

Function

Run the **aggregate bfd-detect** command to enable the bidirectional forwarding detection (BFD) function of an aggregate port (AP) member port.

Run the **no** form of this command to disable the BFD function of an AP member port.

The BFD function of an AP member port is disabled by default.

Syntax

aggregate bfd-detect { **ipv4** *source-ipv4-address destination-ipv4-address* | **ipv6** *source-ipv6-address destination-ipv6-address* }

no aggregate bfd-detect { **ipv4** | **ipv6** }

Parameter Description

ipv4: Enables IPv4 BFD. You can enable IPv4 BFD when the IPv4 address is used on the AP.

Ipv6: Enables IPv6 BFD. You can enable IPv6 BFD when the IPv6 address is used on the AP.

source-ipv4-address: Source IPv4 address, that is, the IP address configured on the AP.

destination-ipv4-address: Destination IPv4 address, that is, the IP address configured on the peer AP.

source-ipv6-address: Source IPv6 address, that is, the IP address configured on the AP.

destination-ipv6-address: Destination IPv6 address, that is, the IP address configured on the peer AP.

Command Modes

AP interface configuration mode

Default Level

14

Usage Guidelines

To enable the BFD function of an AP member port, you need to configure BFD parameters. For details, see “BFD” in “Configuring Reliability”.

When a device supports both IPv4 BFD and IPv6 BFD, IPv4 BFD and IPv6 BFD can be enabled at the same time on the AP.

Note

After the BFD function is enabled for the link aggregation group on the AP, BFD sessions are automatically set up on the member ports in forwarding state in the AP.

Examples

The following example enables the BFD function for the member ports of AP1, and configures the local IP address for BFD as 1.0.0.1, the remote IP address as 1.0.0.2, the minimum sending interval as 50 milliseconds, the minimum receiving interval as 50 milliseconds, and the detection timeout multiplier as 3.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface aggregateport 1
Hostname(config-if-Aggregateport 1)# ip address 1.0.0.1
Hostname(config-if-Aggregateport 1)# aggregate bfd-detect ipv4 1.0.0.1 1.0.0.2
Hostname(config-if-Aggregateport 1)# bfd interval 50 min_rx 50 multiplier 3
```

Notifications

When the source IP address or destination IP address is invalid, the following notification will be displayed:

```
% Invalid IP address.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.2 aggregateport algorithm mode

Function

Run the **aggregateport algorithm mode** command to configure the load balancing algorithm mode for all APs.

Run the **no** form of this command to restore the default value of the load balancing algorithm mode for all APs.

The type number of the algorithm mode is 11 by default.

Syntax

aggregateport algorithm mode *algorithm-number*

no aggregateport algorithm mode

Parameter Description

algorithm-number: Type number of the algorithm mode. The value ranges from 3 to 11.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

(Optional) This command is configured when the load balancing algorithm mode needs to be changed.

You can run the **no aggregateport algorithm mode** command to restore the default algorithm mode.

Examples

The following example sets the load balancing algorithm mode to 3.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# aggregateport algorithm mode 3
```

Notifications

When the algorithm mode fails to be configured, the following notification will be displayed:

```
Set algorithm mode failed.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.3 aggregateport capacity mode

Function

Run the **aggregateport capacity mode** command to configure the capacity mode of an AP.

Run the **no** form of this command to restore the default value of the capacity mode of an AP.

By default, the maximum number of an AP is 128, and the maximum number of member ports per aggregateport is 8.

Syntax

aggregateport capacity mode *capacity-mode*

no aggregateport capacity mode

Parameter Description

capacity-mode: Capacity mode to be configured. The supported capacity mode is 128*8.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

When the capacity mode configuration is supported, the system provides several configurable capacity modes for users.

Examples

The following example sets the maximum number of APs to 128, and the maximum number of member ports of an AP to 8.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# aggregateport capacity mode 128*8
```

Notifications

When the existing maximum AP number of the current system exceeds the maximum number of APs to be configured, the following notification will be displayed:

```
% Set aggregateport capacity mode failed.aggregateport 129 have been created,
cannot set maximum aggregateport number to128.
```

When the current number of member ports in AP 1 exceeds the maximum number of member ports to be configured, the following notification will be displayed:

```
% Set aggregateport capacity mode failed. current aggregateport member count of
aggregateport 1 more than 9.
```

When the link aggregation capacity mode has been configured and you need to save the configuration and restart the system to enable the configuration, the following notification will be displayed:

```
% Warning: please save configuration and restart the device for the configuration
to take effect!
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.4 aggregateport load-balance

Function

Run the **aggregateport load-balance** command to configure the global load balancing algorithm of APs or the load balancing algorithm of a specified AP.

Run the **no** form of this command to restore the default value of the global load balancing algorithm of APs or restore the load balancing algorithm of a specified AP to the global load balancing algorithm.

By default, for a device on which an AP is created as a L2 AP by default, load is distributed according to the source MAC addresses and destination MAC addresses of the incoming packets. For a device on which an AP is created as a L3 AP by default, load is distributed according to the source IP addresses and destination IP addresses of the incoming packets. For the device that is provided with a CB type line card and supports the enhanced load balancing mode, the AP sets the corresponding packet type field according to the enhanced load balancing profile to distribute load.

Syntax

aggregateport load-balance { **dst-mac** | **src-mac** | **src-dst-mac** | **dst-ip** | **src-ip** | **src-dst-ip** | **src-dst-ip-l4port** | **enhanced profile** *profile-name*

no aggregateport load-balance

Parameter Description

dst-mac: Indicates that load is distributed according to the destination MAC addresses of incoming packets. On each link of the AP, packets with the same destination MAC address are sent to the same port, and packets with different destination MAC addresses are distributed to different ports.

src-mac: Indicates that load is distributed according to the source MAC addresses of the incoming packets. On each link of the AP, packets with different source MAC addresses are distributed to different ports, and packets with the same source MAC address use the same port.

src-dst-ip: Indicates that the load is distributed according to the source IP address and destination IP address. Packets with different source IP addresses and destination IP addresses are forwarded through different ports. Packets with the same source IP address and destination IP address are forwarded through the same link. You are advised to adopt this load balancing mode under L3 conditions.

dst-ip: Indicates that load is distributed according to the destination IP addresses of the incoming packets. On each link of the AP, packets with the same destination IP address are sent to the same port, and packets with different destination IP addresses are distributed to different ports.

src-ip: Indicates that load is distributed according to the source IP addresses of the incoming packets. On each link of the AP, packets with different source IP addresses are distributed to different ports, and packets with the same source IP address use the same port.

src-dst-mac: Indicates that load is distributed according to the source MAC addresses and destination MAC addresses. Packets with different source MAC addresses and destination MAC addresses are forwarded through different ports. Packets with the same source MAC address and destination MAC address are forwarded through the same link.

src-dst-ip-l4port: Indicates that load is distributed according to the source IP address and the destination IP address, as well as the source L4 port number and the destination L4 port number.

enhanced profile *profile-name*: Configures the corresponding packet type field according to **profile-name** to distribute load.

Command Modes

Global configuration mode

Interface configuration mode

Default Level

14

Usage Guidelines

The load balancing algorithm is configured in the interface configuration mode of the specified AP. After the configuration takes effect, the newly configured load balancing algorithm will operate on the AP. You `can use the **no aggregateport load-balance** command in the interface configuration mode of the AP to disable the load balancing algorithm configured on this AP. After that, the global load balancing algorithm configured on the current device for link aggregation takes effect.

Examples

The following example configures a destination MAC address-based load balancing algorithm for link aggregation.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# aggregateport load-balance dst-mac
```

The following example configures a destination MAC address-based load balancing algorithm on AP 1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface aggregateport 1
Hostname(config-if-AggregatePort 1)# aggregateport load-balance dst-mac
```

Notifications

N/A

Common Errors

N/A

Platform Description

Specification

The **src-dst-ip-l4port** and **src-dst-ip-src-dst-l4port** commands both indicate the load balancing mode based on the source and destination IP addresses and L4 source and destination port numbers of packets. The **src-dst-ip-l4port** command is applicable to all the products supporting this load balancing mode, while the **src-dst-ip-src-dst-l4port** command is applicable only to some products.

Related Commands

N/A

1.5 aggregateport member linktrap

Function

Run the **aggregateport member linktrap** command to enable the LinkTrap notification sending function of member ports of an AP.

Run the **no** form of this command to disable the LinkTrap notification sending function of member ports of an AP.

The LinkTrap notification sending function of member ports of an AP is disabled by default.

Syntax

aggregateport member linktrap

no aggregateport member linktrap

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

In interface configuration mode, you cannot use the [**no**] **snmp trap link-status** command to enable or disable the LinkTrap notification sending function of member ports of an AP. Instead, in global configuration mode, you can use the [**no**] **aggregateport member linktrap** command to enable this function.

Examples

The following example enables the LinkTrap notification sending function of member ports of an AP.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# aggregateport member linktrap
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.6 aggregateport member minimum

Function

Run the **aggregateport member minimum** command to configure the minimum number of member ports of an AP or the action to be triggered when the number of member ports of an AP is less than the minimum number.

Run the **no** form of this command to delete the minimum number of member ports of an AP or the action to be triggered when the number of member ports of an AP is less than the minimum number.

By default, the minimum number of member ports of an AP is 1, and no action is configured.

Syntax

aggregateport member minimum { *port-number* | **action shutdown** }

no aggregateport member minimum [**action**]

Parameter Description

port-number: Minimum number of member ports. The value range is from 1 to 8.

shutdown: Indicates that the AP will be shut down if the number of member ports of an AP is less than the minimum number.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

(Optional) This command is configured to specify the minimum number of the member ports of an aggregation group.

For a static AP, the same configuration is required for the peer end; otherwise it may cause the local AP to be **Down** and the peer AP to be **Up**.

Examples

The following example sets the minimum number of member ports of AP 1 to 2.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface aggregatePort 1
Hostname(config-if-AggregatePort 1)# aggregateport member minimum 2
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.7 aggregateport primary-port

Function

Run the **aggregateport primary-port** command to configure a member port of an AP as a preferred port.

Run the **no** form of this command to restore the default value of the preferred member port of an AP.

No preferred port is configured by default.

Syntax

aggregateport primary-port

no aggregateport primary-port

Parameter Description

N/A

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

Only one preferred port can be configured for one AP.

Examples

The following example configures the member port GigabitEthernet 0/1 of AP 1 as the preferred port.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# port-group 1 mode active
Hostname(config-if-GigabitEthernet 0/1)# aggregateport primary-port
```

Notifications

When a non-member port is configured as the preferred port, the following notification will be displayed:

```
% The interface gigabitEthernet 0/1 is not aggregateport member.
```

When more than two preferred ports are configured for one AP, the following notification will be displayed:

```
% Already specified gigabitEthernet 0/1 as primary port for aggregateport 1
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.8 clear lacp counters

Function

Run the **clear lacp counters** command to clear the Link Aggregation Control Protocol (LACP) packet statistics from an LACP AP member port.

Syntax

clear lacp counters [*key-number* | *interface-type interface-number*]

Parameter Description

key-name: Number of the specified LACP AP. The value range is from 1 to 128.

interface-type interface-number: Interface type and interface number of the specified LACP AP member port.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

You can run the **show lacp counters** command in privileged EXEC mode to view the LACP packet statistics, and run the **clear lacp counters** command in privileged EXEC mode to clear the LACP packet statistics. You can specify the interface number of a specific member port or AP. If no interface is specified, the LACP packet statistics of all the LACP AP member ports will be cleared.

Examples

The following example clears the LACP packet statistics of the member port GigabitEthernet 0/1.

```
Hostname> enable
Hostname# configure terminal
Hostname# clear lacp counters GigabitEthernet 0/1
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.9 debug lacp

Function

Run the **debug lacp** command to enable the LACP debugging function.

Run the **no** form of this command to disable the LACP debugging function.

The debugging function is enabled by default.

Syntax

debug lacp { **cache-database** | **cli** | **ef-packet** | **thread** | **pkt-agent** | **pkt-statis** | **pkt-thread** | **packet** | **event** | **ha** | **realtime** | **stm** | **timer** | **all** }

no debug lacp { **cache-database** | **cli** | **ef-packet** | **thread** | **pkt-agent** | **pkt-statis** | **pkt-thread** | **packet** | **event** | **ha** | **realtime** | **stm** | **timer** | **all** }

Parameter Description

cache-database: Database operation debugging.

cli: Command processing debugging.

ef-packet: LACP packet linkage path debugging.

thread: Process scheduling debugging.

pkt-agent: Agent thread packet debugging.

pkt-statis: Packet statistics debugging.

pkt-thread: Agent thread scheduling debugging.

packet: LACP packet sending and receiving debugging.

event: LACP event processing debugging.

ha: Master-slave backup processing debugging.

realtime: Debugging information record file.

stm: State machine debugging.

timer: Internal timer debugging.

all: Enables all LACP debugging.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example enables the LACP packet sending and receiving debugging functions.

```
Hostname> enable
Hostname# configure terminal
Hostname# debug lacp packet
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.10 hash-disturb

Function

Run the **hash-disturb** command to configure a load balancing hash disturbance factor.

Run the **no** form of this command to disable the load balancing hash disturbance function.

The load balancing hash disturbance function is disabled by default.

Syntax

hash-disturb *factor-string*

no hash-disturb

Parameter Description

factor-string: Disturbance factor.

Command Modes

Enhanced load balancing profile configuration mode

Default Level

14

Usage Guidelines

(Optional) You can run this command when an AP needs to be specified for multiple devices of the same type to balance packets of the same type, and run the **no hash-disturb** command to disable the hash disturbance function.

It is not guaranteed that either configuration affects the balancing effect. If there is no expected effect, the other value can be configured.

Examples

The following example configures hash disturbance factor A.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# load-balance-profile
Hostname(config-load-balance-profile)# hash-disturb A
```

Notifications

When the hash disturbance factor fails to be configured, the following notification will be displayed:

```
% Set hash-disturb failed.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.11 hash-symmetrical

Function

Run the **hash-symmetrical** command to configure the load balancing hash synchronization factor.

Run the **no** form of this command to disable the load balancing hash synchronization function.

The load balancing hash synchronization factor is not configured by default.

Syntax

hash-symmetrical { **ipv4** | **ipv6** }

no hash-symmetrical { **ipv4** | **ipv6** }

Parameter Description

ipv4: Indicates that the load balancing hash synchronization function is enabled for IPv4 packets.

ipv6: Indicates that the load balancing hash synchronization function is enabled for IPv6 packets.

Command Modes

Enhanced load balancing profile configuration mode

Default Level

14

Usage Guidelines

You can run the **hash-symmetrical** { **ipv4** | **ipv6** } command to enable the hash synchronization function when the same path needs to be specified for the uplink and downlink streams of a certain packet type..

Examples

The following example disables the hash synchronization function for IPv6 packets.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# load-balance-profile
Hostname(config-load-balance-profile)# no hash-symmetrical ipv6
```

Notifications

When the balancing hash synchronization function for IPv4 packets fails to be enabled, the following notification will be displayed:

```
% Set hash-symmetrical ipv4 failed.
```

When the balancing hash synchronization function for IPv6 packets fails to be enabled, the following notification will be displayed:

```
% Set hash-symmetrical ipv6 failed.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.12 interface aggregateport

Function

Run the **interface aggregateport** command to configure the Ethernet AP or enter the interface configuration mode of Ethernet AP.

Run the **no** form of this command to delete an Ethernet AP.

No AP is configured by default.

Syntax

interface aggregateport *ap-number*

no interface aggregateport *ap-number*

Parameter Description

ap-number: Number of an AP. The value ranges from 1 to 128,.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

If an AP has been created, the system automatically enters the interface configuration mode of the AP when the **interface aggregateport** command is configured. If no AP is created, an AP will be created first when the **interface aggregateport** command is configured. If the AP is created successfully, the system will enter the interface configuration mode of the AP.

Examples

The following example creates AP 1 and enters its interface configuration mode.

```
Hostname> enable
Hostname# configure terminal
```

```
Hostname(config)# interfaces aggregateport 1
Hostname(config-if-Aggregateport 1)#
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.13 ipv4 field

Function

Run the **ipv4 field** command to configure the load balancing mode of IPv4 packets in the specified enhanced load balancing profile.

Run the **no** form of this command to restore the default configuration.

The load balancing mode of IPv4 packets is a combination of **src-ip**, **dst-ip**, **l4-src-port** and **l4-dst-port** by default.

Syntax

ipv4 field [**src-ip**] [**dst-ip**] [**protocol**] [**l4-src-port**] [**l4-dst-port**] [**src-port**] [**dst-port**]

no ipv4 field

Parameter Description

src-ip: Indicates that the load is distributed according to the source IP addresses of incoming IPv4 packets.

dst-ip: Indicates that the load is distributed according to the destination IP addresses of incoming IPv4 packets.

protocol: Indicates that the load is distributed according to the protocol types of incoming IPv4 packets.

l4-src-port: Indicates that the load is distributed according to the L4 source port numbers of incoming IPv4 packets.

l4-dst-port: Indicates that the load is distributed according to the L4 destination port numbers of incoming IPv4 packets.

src-port: Indicates that the load is distributed according to the source port numbers of incoming IPv4 packets.

Command Modes

Enhanced load balancing profile configuration mode

Default Level

14

Usage Guidelines

You need to create an enhanced load balancing profile before running this command.

Examples

The following example sets the load balancing mode of IPv4 packets in the enhanced load balancing profile APL to **src-ip**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# load-balance-profile apl
Hostname(config-load-balance-profile)# ipv4 field src-ip
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.14 ipv6 field

Function

Run the **ipv6 field** command to configure the load balancing mode of IPv6 packets in the specified enhanced load balancing profile.

Run the **no** form of this command to restore the default configuration.

The load balancing mode of IPv6 packets is a combination of **src-ip**, **dst-ip**, **l4-src-port** and **l4-dst-port** by default.

Syntax

ipv6 field [**src-ip**] [**dst-ip**] [**protocol**] [**l4-src-port**] [**l4-dst-port**] [**src-port**]

no ipv6 field

Parameter Description

src-ip: Indicates that the load is distributed according to the source IP addresses of incoming IPv6 packets.

dst-ip: Indicates that the load is distributed according to the destination IP addresses of incoming IPv6 packets.

protocol: Indicates that the load is distributed according to the protocol types of incoming IPv6 packets.

l4-src-port: Indicates that the load is distributed according to the L4 source port numbers of incoming IPv6 packets.

l4-dst-port: Indicates that the load is distributed according to the L4 destination port numbers of incoming IPv6 packets.

src-port: Indicates that the load is distributed according to the source port numbers of incoming IPv6 packets.

Command Modes

Enhanced load balancing profile configuration mode

Default Level

14

Usage Guidelines

You need to create an enhanced load balancing profile before running this command.

Examples

The following example sets the load balancing mode of IPv6 packets in the enhanced load balancing profile APL to **src-ip**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# load-balance-profile apl
Hostname(config-load-balance-profile)# ipv6 field src-ip
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.15 l2 field

Function

Run the **l2 field** command to configure the load balancing mode of L2 packets in the specified enhanced load balancing profile.

Run the **no** form of this command to restore the default configuration.

The load balancing mode of L2 packets is a combination of **src-mac** and **dst-mac** by default.

Syntax

l2 field [**src-mac**] [**dst-mac**] [**src-port**]

no l2 field

Parameter Description

src-mac: Indicates that the load is distributed according to the source MAC addresses of incoming L2 packets.

dst-mac: Indicates that the load is distributed according to the destination MAC addresses of incoming L2 packets.

src-port: Indicates that the load is distributed according to the source port numbers of incoming L2 packets.

Command Modes

Enhanced load balancing profile configuration mode

Default Level

14

Usage Guidelines

You need to create an enhanced load balancing profile before running this command.

Examples

The following example sets the load balancing mode of L2 packets to **src-mac** and **src-port**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# load-balance-profile apl
Hostname(config-load-balance-profile)# l2 field src-mac src-port
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.16 lacp device

Function

Run the **lacp device** command to configure the device ID of LACP.

Run the **no** form of this command to cancel the configured device ID.

The device ID is 0 by default.

Syntax

lacp device *device-id*

no lacp device

Parameter Description

device-id: Device ID of LACP. The value range is from 0 to 3.

Command Modes

AP interface configuration mode

Default Level

14

Usage Guidelines

(Optional) You can run this command when the LACP ports of multiple (a maximum of four) independent devices need to negotiate with the LACP port of a specific device.

This command must be used together with the **lacp system-id** command

Examples

The following example sets the device ID of AP 1 to 1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface aggregatePort 1
Hostname(config-if-AggregatePort 1)# lacp device 1
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.17 lacp individual-port enable

Function

Run the **lacp individual-port enable** command to enable the LCAP independent port function.

Run the **no** form of this command to restore the default configuration.

The LACP independent port function is disabled by default.

Syntax

lacp individual-port enable

no lacp individual-port enable

Parameter Description

N/A

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

(Optional) You can run this command to convert an LACP AP member port to a common physical port when the LACP AP member port cannot perform LACP negotiation.

This command is used to enable the independent port function. After the function is enabled, when a member port fails to receive the LACP packet sent by the peer end within the timeout period of the independent port and the negotiation fails, the member port enters the independent port state (that is, is converted to a common physical port).

Examples

The following example enables GigabitEthernet 0/1 as an independent port.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface GigabitEthernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# port-group 1 mode active
Hostname(config-if-GigabitEthernet 0/1)# lacp individual-port enable
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.18 lacp individual-timeout period

Function

Run the **lacp individual-timeout period** command to configure the timeout period of an LACP independent port.

Run the **no** form of this command to restore the default configuration.

The timeout period of an LACP independent port is 90s by default.

Syntax

lacp individual-timeout period *time*

no lacp individual-timeout period

Parameter Description

time: Timeout period of the independent port, in seconds. The value range is from 10 to 90.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

(Optional) You can run this command to adjust the timeout period of an independent port for the LACP independent port function.

This command is used to configure the timeout period for the independent port function. Its configuration affects only ports with the LACP independent port function enabled.

Configuring the timeout period of an independent port will not affect existing independent ports.

A member port that fails to receive the LACP packet sent by the peer end within the timeout period of an independent port enters the independent port state (that is, is converted to a common physical port).

In long timeout mode, the LACP packet is sent every 30s. The timeout period should be longer than 30s so as not to affect the normal LACP negotiation. You are advised to configure the timeout period at least twice the period of LACP packet sending. In short timeout mode, the timeout period is not limited.

Examples

The following example sets the timeout period of an independent port to 60s.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# lacp individual-timeout period 60
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.19 lacp port-priority

Function

Run the **lacp port-priority** command to configure the port priority of an LACP AP member port.

Run the **no** form of this command to restore the port priority of the LACP AP member port.

The priority of the LACP AP member port is 32768 by default.

Syntax

lacp port-priority *Priority*

no lacp port-priority

Parameter Description

Priority: LACP port priority of the port. The value range is from 0 to 65535. A smaller value indicates a higher priority.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example sets the LACP port priority of GigabitEthernet 0/1 to 4096.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitEthernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# lacp port-priority 4096
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.20 lacp short-timeout

Function

Run the **lacp short-timeout** command to configure the timeout mode of an LACP AP member port to the short timeout mode.

Run the **no** form of this command to restore the timeout mode of the LACP AP member port to the long timeout mode.

The timeout mode of an LACP AP member port is long timeout by default.

Syntax

lacp short-timeout

no lacp short-timeout

Parameter Description

N/A

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

In long timeout mode, the port sends an LACP packet every 30 seconds, and a timeout occurs if no packet is received within 90 seconds.

In short timeout mode, the port sends an LACP packet every 1 second, and a timeout occurs if no packet is received within 3 seconds.

Examples

The following example configures the LACP port timeout mode of GigabitEthernet 0/1 to the short timeout mode.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitEthernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# lacp short-timeout
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.21 lacp short-timeout period

Function

Run the **lacp short-timeout period** command to configure the timeout period of the LACP system in short timeout mode.

Run the **no** form of this command to restore the default configuration.

The timeout period of the LACP system in short timeout mode is 3 seconds by default.

Syntax

lacp short-timeout period *interval*

no lacp short-timeout period

Parameter Description

interval: Timeout period in short timeout mode, in seconds. The value ranges from 3 to 90.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

You can run this command to configure the timeout period in short timeout mode.

Examples

The following example sets the timeout period of the LACP system in short timeout mode to 4 seconds.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# lacp short-timeout period 4
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.22 lacp system-id

Function

Run the **lacp system-id** command to configure the LACP system ID.

Run the **no** form of this command to restore the default LACP system ID.

The LACP system ID is the system ID (MAC address) of the device by default.

Syntax

lacp system-id *system-id*

no lacp system-id

Parameter Description

system-id: LACP system ID of the port, a valid unicast MAC address.

Command Modes

AP interface configuration mode

Default Level

14

Usage Guidelines

(Optional) You can run this command when the LACP ports of multiple (a maximum of four) independent devices need to negotiate with the LACP port of a specific device.

The command must be used together with the **lacp device** command.

Examples

The following example sets the LACP system ID to 0000.1236.54ab.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface aggregatePort 1
Hostname(config-if-AggregatePort 1)#lacp system-id 0000.1236.54ab
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.23 lacp system-priority

Function

Run the **lacp system-priority** command to configure the LACP system priority.

Run the **no** form of this command to restore the LACP system priority.

The LACP system priority of a port is 32768 by default.

Syntax

lacp system-priority *system-priority*

no lacp system-priority

Parameter Description

system-priority: LACP system priority of a port. The value range is from 0 to 65535.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example sets the LACP system priority to 4096.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# lacp system-priority 4096
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.24 load-balance-profile

Function

Run the **load-balance-profile** command to rename the enhanced load balancing profile and enter the enhanced load balancing profile mode.

Run the **default** form of this command to restore the current profile to the default load balancing configuration, with the profile name unchanged.

The name of the enhanced load balancing profile is **default** by default.

Syntax

load-balance-profile *profile-name*

default load-balance-profile *profile-name*

Parameter Description

profile-name: Profile name, which includes a maximum of 31 characters.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

By default, the device is configured with an enhanced load balancing profile named **default**, which cannot be configured or deleted. You can directly enter the default enhanced load balancing profile mode using the **load-balance-profile default** command, or rename the enhanced load balancing profile using the **load-balance-profile** *profile-name* command.

Examples

The following example creates and enters an enhanced load balancing profile named APL.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# load-balance-profile apl
Hostname(config-load-balance-profile)#
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.25 port-group

Function

Run the **port-group** command to configure an Ethernet physical port as a member port of a static AP.

Run the **port-group mode** command to configure a physical port as a member port of an LACP AP.

Run the **no** form of this command to delete the AP member attribute of the port.

By default, the Ethernet physical port does not belong to any static AP or LACP AP.

Syntax

port-group *port-group-number*

port-group *key-number* **mode** { **active** | **passive** }

no port-group

Parameter Description

port-group-number: Number of the member port group of the static AP, that is, the interface number of the static AP. The value ranges from 1 to 128.

key-number: Number of the member port group of the LACP AP, that is, the interface number of the LACP AP. The value ranges from 1 to 128.

active: Indicates that the port will initiate LACP aggregation operation.

passive: Indicates that the port will not actively initiate LACP aggregation operation, but will passively participate in LACP aggregation operation after receiving LACP packets from a neighbor.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

When you run the **port-group** command to add a port to an AP, if the AP does not exist, it will be automatically created. When the layer of the physical port is different from that of the AP, the physical port cannot be added to the AP.

Examples

The following example configures GigabitEthernet 0/1 as a member port of static AP 1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# port-group 1
```

The following example configures GigabitEthernet 0/1 as a member port of LACP AP 1 and sets the aggregation mode to active mode.

```
Hostname> enable
Hostname# configure terminal
```

```
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# port-group 1 mode active
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.26 show aggregateport load-balance

Function

Run the **show aggregateport load-balance** command to view the global load balancing information of an AP.

Syntax

show aggregateport load-balance

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the configuration of global load-balance.

```
Hostname> enable
Hostname# show aggregateport load-balance
Load-balance     : Source MAC and Destination MAC
Algorithm mode
 current: 11, default: 11
```

Table 1-1Output Fields of the show aggregateport load-balance Command

Field	Description
Load-balance	Indicates the global load balancing mode.
Algorithm mode	Hash balancing algorithm mode: ● **current**: Indicates the current effective value. ● **default**: Indicates the default value of the device.
	●

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.27 show aggregateport summary

Function

Run the **show aggregateport summary** command to display the configuration of an AP.

Syntax

show aggregateport [*aggregate-port-number*] **summary**

Parameter Description

aggregate-port-number:-port-number: Number of the AP. The value range is from 1 to 128. If the port number is not specified, the information of all APs will be displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If no interface number of an AP is specified, the information of all APs will be displayed.

If the system does not support configuring the load balancing mode based on AP, the **Load-balance** field will not be displayed.

Examples

The following example displays the configuration of AP 1.

```
Hostname> enable
Hostname# show aggregateport 1 summary
AggregatePort  MaxPorts        SwitchPort Mode    Load balance
Ports
Ag1            8               Enabled    ACCESS  dst-mac
Gi0/1
```

Table 1-1Output Fields of the show aggregateport summary Command

Field	Description
AggregatePort	Indicates the interface name of the AP.
MaxPorts	Indicates the maximum number of ports that can be supported in an AP.
SwitchPort	Indicates whether the AP is a L2 port. **Enabled** indicates that it is a L2 port, and **Disabled** indicates that it is not a L2 port.
Mode	Indicates L2 port attributes of the AP, including **ACCESS**, **TRUNK**, **TUNNEL**, **HYBRID**, **UPLINK**, **HOST**, and **PROMIS**. When the AP is not a L2 port, the field is blank.
Load balance	Indicates the load balancing mode of the AP.
Ports	Indicates the name of the AP member port.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.28 show aggregateport capacity

Function

Run the **show aggregateport capacity** command to display the capacity mode and capacity usage of the current AP.

Syntax

show aggregateport capacity

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the capacity mode and capacity usage of the current AP.

```
Hostname> enable
Hostname# show aggregateport capacity
AggregatePort Capacity Information:
Configuration Capacity Mode: 128*8.
Effective Capacity Mode    : 128*8.
Available Capacity         : 128*8.
Total Number: 128, Used: 1, Available: 127.
```

Table 1-1 Output Fields of the show aggregateport capacity Command

Field	Description
Configuration Capacity Mode	Indicates the currently configured capacity mode
Effective Capacity Mode	Indicates the currently effective capacity mode.
Available Capacity	Indicates the currently available capacity mode.
Total Number	Indicates the maximum number of available APs in the current system. **Used** indicates the number of used APs, and **Available** indicates the number of remaining available APs.

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.29 show lacp counters

Function

Run the **show lacp counters** command to display the packet statistics of an LACP AP member port.

Syntax

show lacp counters [*key-number*]

Parameter Description

key- number: Number of the specified LACP AP. The value range is from 1 to 128. If the port number is not specified, the information of all ports will be displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If **key-number** is not specified, the LACP packet statistics of all the LACP AP member ports will be displayed.

Examples

The following example displays the LACP packet statistics of member ports of LACP AP 1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# show lacp counters 1
LACP PDU Pakcet Statistics
Aggregate port 1:
Port          InPkts    OutPkts
Gi0/1          6121      6132
```

Table 1-1Output Fields of the show lacp counters Command

Field	Description
Aggregate port 2	Indicates the AP ID.
Port	Indicates the LACP AP member port name.
InPkts	Indicates the number of LACP PDU packets received by the member port.
OutPkts	Indicates the number of LACP PDU packets sent by the member port.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.30 show lacp summary

Function

Run the **show lacp summary** command to display the state of an LACP AP.

Syntax

show lacp summary [*key-number*]

Parameter Description

key-number: Number of a specified LACP AP. The value range is from 1 to 128. If the port number is not specified, the information of all LACP APs will be displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If **key-number** is not specified, the state information of all LACP APs will be displayed.

Examples

The following example displays the state information of LACP AP 1.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# show lacp summary 1
System Id:32768,00d0.f8fb.0002
Flags:  S - Device is requesting Slow LACPDUs
F - Device is requesting Fast LACPDUs.
A - Device is in active mode.        P - Device is in passive mode.
Aggregate port 1:
Local information:
LACP port       Oper    Port     Port
Port     Flags     State     Priority        Key     Number  State
```

```
Gi0/1     SA        bndl        4096         0x3     0x1      0x3d
Gi0/2     SA        bndl        4096         0x3     0x2      0x3d
Gi0/3     SA        bndl        4096         0x3     0x3      0x3d
Partner information:
LACP port                 Oper    Port     Port
Port     Flags     Priority      Dev ID       Key     Number   State
Gi0/1     SA        61440     00d0.f800.0002   0x3     0x1      0x3d
Gi0/2     SA        61440     00d0.f800.0002   0x3     0x2      0x3d
Gi0/3     SA        61440     00d0.f800.0002   0x3     0x3      0x3d
```

Table 1-1Output Fields of the show lacp summary Command

Field	Description
System Id	Indicates the system ID, namely, the system MAC address.
Aggregate port 1	Indicates the name of the AP.
Local information	Indicates the information about the local LACP AP member port.
Port	Indicates the LACP AP member port name.
Flags	Indicates the configuration of member ports. For details, see the description of SFAP in the displayed notification.
State	Indicates the member port negotiation state: **bndl** indicates successful negotiation, **susp** indicates negotiation failure, and **down** indicates the **Down** state of the port link.
LACP port Priority	Indicates the port priority of the LACP AP member port.
Oper Key	Indicates the aggregation group number of the LACP AP member port.
Port Number	Indicates the number of the LACP AP member port.
Port State	Indicates the port state details of the LACP AP member port.
Partner information	Indicates the information about the peer LACP AP member port.
Port	Indicates the name of the local port connected to the peer end.
Flags	Indicates the configuration of the peer LACP AP member port, which is the same as the above **Flags**.
LACP port Priority	Indicates the port priority of the peer LACP AP member port, which is the same as the above **LACP port Priority**.
Dev ID	Indicates the ID of the device system where the peer LACP AP member port is, that is, the MAC address of the peer device.
Oper Key	Indicates the aggregation group number of the peer LACP AP member port, which is the same as the above **Oper Key**.
Port Number	Indicates the number of the peer LACP AP member port, which is the same as the

Field	Description
	above **Port Number**.
Port State	Indicates the port state details of the peer LACP AP member port, which is the same as the above **Port State**.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.31 show load-balance-profile

Function

Run the **show load-balance-profile** command to display the configuration of the enhanced load balancing mode.

Syntax

show load-balance-profile [*profile-name*]

Parameter Description

profile-name: Profile name.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If *profile-name* is not specified, the information of all the enhanced load balancing profiles will be displayed.

Examples

The following example displays the enhanced load balancing configuration of the profile module0.

```
Hostname> enable
Hostname# show load-balance-profile module0
Load-balance-profile: module0
```

```
Packet    Hash Field:
     IPv4: src-ip dst-ip
    IPv6: src-ip dst-ip
    L2  : src-mac dst-mac
```

Table 1-1Output Fields of the show load-balance-profile Command

Field	Description
Load-balance-profile	Indicates the name of the enhanced load balancing profile.
IPv4	Indicates the balancing configuration of IPv4 packets in the enhanced load balancing profile.
IPv6	Indicates the balancing configuration of IPv6 packets in the enhanced load balancing profile.
L2	Indicates the balancing configuration of L2 packets in the enhanced load balancing profile.

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A