H3C S12500-X & S12500X-AF Switch Series

TRILL Command Reference

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Preface

The H3C S12500-X & S12500X-AF documentation set includes 17 command references. These references describe the commands and command syntax options available for the H3C S12500-X & S12500X-AF Switch Series running Release 1135 and later.

The *TRILL Command Reference* describes TRILL configuration commands.

This preface includes:

Audience

This documentation is intended for:

- Network planners
- Field technical support and servicing engineers
- Network administrators working with the S12500-X & S12500X-AF series

Conventions

This section describes the conventions used in this documentation set.

Command conventions

Convention	Description
Boldface	**Bold** text represents commands and keywords that you enter literally as shown.
Italic	*Italic* text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x | y | ... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[x | y | ...]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x | y | ... } *	Asterisk marked braces enclose a set of required syntax choices separated by vertical bars, from which you select at least one.
[x | y | ...] *	Asterisk marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in Boldface. For example, the **New User** window appears; click **OK**.
>	Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**.

Symbols

Convention	Description
⚠ WARNING	An alert that calls attention to important information that if not understood or followed can result in personal injury.
△ CAUTION	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
ⓘ IMPORTANT	An alert that calls attention to essential information.
NOTE	An alert that contains additional or supplementary information.
TIP	An alert that provides helpful information.

Network topology icons

	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the access controller engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a mesh access point.
	Represents omnidirectional signals.
	Represents directional signals.
	Represents a security product, such as a firewall, UTM, multiservice security gateway, or load-balancing device.
	Represents a security card, such as a firewall, load-balancing, NetStream, SSL VPN, IPS, or ACG card.

Port numbering in examples

The port numbers in this document are for illustration only and might be unavailable on your device.

Obtaining documentation

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TRILL commands

TRILL requires a license to run on the device. For information about feature licensing, see *Fundamentals Configuration Guide*.

auto-cost enable

Use **auto-cost enable** to enable automatic link cost calculation for TRILL ports.

Use **undo auto-cost enable** to disable automatic link cost calculation for TRILL ports.

Syntax

auto-cost enable

undo auto-cost enable

Default

Automatic link cost calculation is enabled for TRILL ports.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

The link cost of a TRILL port can be automatically calculated by the system or manually set.

- A manually set link cost takes precedence over a calculated link cost.
- If no link cost is set and automatic link cost calculation is enabled, the calculated link cost takes effect.
- If no link cost is set and automatic link cost calculation is disabled, the default link cost of 2000 is used.

The system automatically calculates the link cost of a TRILL port by using the following formula: link cost = 20000000000000/interface baud rate.

Examples

Disable automatic link cost calculation for TRILL ports.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] undo auto-cost enable
```

Related commands

trill cost

display trill adjacent-table

Use **display trill adjacent-table** to display TRILL Layer 2 adjacency table information.

Syntax

display trill adjacent-table [**count** | **nickname** *nickname* **interface** *interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

count: Displays the number of entries.

nickname *nickname* **interface** *interface-type interface-number*: Specifies an interface on an RB. The *nickname* argument represents the nickname of the RB, a hexadecimal number in the range of 0x1 to 0xFFFE. The *interface-type interface-number* argument represents the type and number of the interface. If you do not specify the options, the command displays information about all RBs on each interface.

Examples

Display all entries in the TRILL Layer 2 adjacency table.

```
<Sysname> display trill adjacent-table
NextHop     MAC address       Interface
0x899b      00e0-fc58-123a    XGE1/0/1
```

Display the number of entries in the TRILL Layer 2 adjacency table.

```
<Sysname> display trill adjacent-table count
Total number of TRILL ADJ entries: 1
```

Table 1 Command output

Field	Description
NextHop	Nickname of the next-hop RB.
MAC address	MAC address of the next-hop RB.
Interface	Outgoing port of frames.
Total number of TRILL ADJ entries	Number of entries in the TRILL Layer 2 adjacency table.

display trill brief

Use **display trill brief** to display brief TRILL information.

Syntax

display trill brief

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Examples

Display brief TRILL information.

```
<Sysname> display trill brief
Network entity: 00.00a0.fc00.5806.00
Nickname: 0xfa1b
Nickname priority: 64
Tree-root priority: 32768
L3-nickname: 0x5de1
L3-nickname priority: 64
L3-tree-root priority: 1
Cost style: Wide
Maximum allowed LSP received: 1492
Maximum allowed LSP originated: 1458
Maximum unicast load-balancing: 8
Overload status: None
Overload remaining time: N/A
Device role: Normal
Timers:
  LSP-max-age: 1200s
  LSP-refresh: 900s
  Interval between SPFs: 10s  10ms  20ms
```

Table 2 Command output

Field	Description
Network entity	Name of the network entity.
Nickname	Nickname of the RB for Layer 2 forwarding. The Layer 2 forwarding nickname can be configured by using the **nickname** command. The RB forwards a packet based on the MAC address table if the packet meets the following conditions: • The destination MAC address of the packet is the MAC address of the RB. • The egress nickname of the packet is the Layer 2 forwarding nickname of the RB. If TRILL Layer 3 forwarding is disabled for a VLAN, the RB uses its Layer 2 forwarding nickname as the ingress nickname for TRILL encapsulation.
Nickname priority	Priority for the RB to hold the Layer 2 forwarding nickname.
Tree-root priority	Priority for the RB with the Layer 2 forwarding nickname to be a TRILL distribution tree root.

Field	Description
L3-nickname	Nickname of the RB for Layer 3 forwarding. The Layer 3 forwarding nickname is automatically generated by the system and is not user configurable. The RB forwards a packet based on the routing table or the ARP table if the packet meets the following conditions: • The destination MAC address of the packet is the MAC address of the RB. • The egress nickname of the packet is the Layer 3 forwarding nickname of the RB. If TRILL Layer 3 forwarding is enabled for a VLAN, the RB uses its Layer 3 forwarding nickname as the ingress nickname for TRILL encapsulation. This field is available only when TRILL Layer 3 forwarding is enabled on the RB.
L3-nickname priority	Priority for the RB to hold the Layer 3 forwarding nickname. This field is available only when TRILL Layer 3 forwarding is enabled on the RB.
L3-tree-root priority	Priority for the RB with the Layer 3 forwarding nickname to be a TRILL distribution tree root. This field is available only when TRILL Layer 3 forwarding is enabled on the RB.
Cost style	Cost type, which must be Wide.
Maximum allowed LSP received	Maximum length of LSPs that can be received.
Maximum allowed LSP originated	Maximum length of LSPs that can be originated.
Maximum unicast load-balancing	Maximum number of TRILL unicast equal-cost routes.
Overload status	Reason why the Overload bit is set: • **Config**—The Overload bit is set through configuration. • **GR**—The Overload bit is set during graceful restart. • **GR/Config**—The Overload bit is set through configuration during graceful restart of the **Start** type. • **None**—The Overload bit has not been set through configuration.
Device role	Device role: • **Normal**—Common RB. • **Access**—Access layer device.
Overload remaining time	Lifetime of the set Overload bit, in seconds. If the lifetime has not been set or the lifetime has expired, this field displays **N/A**.
Timers	TRILL timers.
LSP-max-age	LSP maximum age (in seconds).
LSP-refresh	LSP refresh interval (in seconds).
Interval between SPFs	Maximum SPF calculation interval (in seconds), minimum SPF calculation interval (in milliseconds), and SPF calculation incremental interval (in milliseconds).

display trill fib

Use **display trill fib** to display TRILL Layer 2 FIB table information.

Syntax

display trill fib [**count** | **nickname** *nickname*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

count: Displays the number of entries.

nickname *nickname*: Specifies an RB by its nickname, a hexadecimal number in the range of 0x1 to 0xFFFE. If you do not specify an RB, the command displays TRILL Layer 2 FIB entries destined for all RBs.

Examples

Display all entries in the TRILL Layer 2 FIB table.

```
<Sysname> display trill fib
Flags: T-Transit, E-Egress
Destination   HopCount   NextHop   Interface                Flags
0xfa1b        63         N/A       N/A                      E
0x899b        63         0x2a5c    XGE1/0/1                 T
```

Display the number of entries in the TRILL Layer 2 FIB table.

```
<Sysname> display trill fib count
Total number of TRILL FIB destinations: 1
Total number of TRILL FIB entries: 2
```

Table 3 Command output

Field	Description
Destination	Nickname of the destination RB.
HopCount	Number of hops to the destination RB.
NextHop	Nickname of the next-hop RB.
Interface	Outgoing port of frames.
Total number of TRILL FIB destinations	Number of destination RBs in the TRILL Layer 2 FIB table.
Total number of TRILL FIB entries	Number of entries in the TRILL Layer 2 FIB table.

display trill graceful-restart status

Use **display trill graceful-restart status** to display GR status information for TRILL.

Syntax

display trill graceful-restart status

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Examples

Display GR status information for TRILL.

```
<Sysname> display trill graceful-restart status
Restart status: RESTARTING
Restart phase: LSDB synchronization
Restart interval: 300s
T3 remaining time: 140s
Total number of interfaces: 1
Number of waiting LSPs: 3
T2 remaining time: 55s
  Interface: Ten-GigabitEthernet1/0/1
    T1 remaining time: 2s
    RA received: Y
    CSNP received: N
    T1 expiration number: 1
```

Table 4 Command output

Field	Description
Restart status	Restart status: • **COMPLETE**—GR is completed. • **RESTARTING**—GR of the Restart type is in process. • **STARTING**—GR of the Start type is in process.
Restart phase	Restart phase: • **Finish**—GR is completed. • **LSDB synchronization**—T2 synchronization phase. • **LSDB generation**—LSP generation phase. • **MCS synchronization**—Layer 2 multicast data synchronization phase. • **SPF**—Route calculation phase.
Restart interval	Restart interval in seconds.
T3 remaining time	Remaining time of the T3 timer (in seconds). The initial value is 65535 seconds. The value of this field is updated according to the remaining time in the RA packet.
Total number of interfaces	Total number of interfaces in the process.
T2 remaining time	Remaining time of the T2 timer (in seconds). For GR of the Restart type, the initial value of the field is fixed at 60 seconds. For GR of the Start type, the initial value is the value set by using the **graceful-restart interval** command (by default, 300 seconds).
Interface	Port name.
T1 remaining time	Remaining time of the T1 timer (in seconds). The initial value of the field is 3 seconds.

Field	Description
RA received	RA received flag bit: • **Y**—Set. • **N**—Not set.
CSNP received	CSNP received flag bit: • **Y**—Set. • **N**—Not set.
T1 expiration number	Number of T1 timer expiration times. The maximum value of the field is 10.

display trill ingress-route

Use **display trill ingress-route** to display TRILL ingress forwarding information.

Syntax

display trill ingress-route [**vlan** *vlan-list*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

vlan *vlan-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 *vlan-id2* must be equal to or greater than the value for *vlan-id1*. If you do not specify a VLAN, this command displays the TRILL ingress forwarding information for all VLANs.

Usage guidelines

This command is available in Release 1138P01 and later versions.

Examples

Display TRILL ingress forwarding information for all VLANs.

```
<Sysname> display trill ingress-route
Total number of VLANs: 1

-------------------------------------
VLAN ID:
  1
List of local ports(in total: 1):
  XGE1/0/1
-------------------------------------
VLAN ID:
  1
Root nickname:
  0x5801
```

```
List of remote ports(in total: 2):
  XGE1/0/3
  XGE1/0/4
```

Table 5 Command output

Field	Description
List of local ports(in total: 1)	Local ingress port list and total port number.
Root nickname	Nickname of root bridge in the VLAN's distribution tree.
List of remote ports(in total: 2)	Egress port list and total port number.

display trill interface

Use **display trill interface** to display TRILL port information.

Syntax

display trill interface [*interface-type interface-number* | **verbose**]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

interface-type interface-number: Specifies an interface by its type and number. If you do not specify an interface, the command displays information about all TRILL ports.

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

Examples

Display brief information about all TRILL ports.

```
<Sysname> display trill interface
Interface                   Protocol state   DRB  Cost      Link type
--------------------------------------------------------------------------
Ten-GigabitEthernet1/0/1    UP               Yes  2000      Access
```

Display detailed information about all TRILL ports.

```
<Sysname> display trill interface verbose
Interface: Ten-GigabitEthernet1/0/1
Circuit ID: 0x01
Protocol state: UP
Nickname: 0xfa1b
MTU: 1470
DRB: Yes
Designated VLAN: 1
Link type: Access
```

```
CSNP timer: 10s
Hello timer: 10s
Hello multiplier: 3
LSP timer: 10ms
LSP transmit-throttle count: 5
Cost: 2000
AVF inhibited timer: 30s
Priority: 64
Track index: None
Track state: NotReady
Active AVF:
  1-3, 5, 58
Inhibited AVF: None
```

Table 6 Command output

Field	Description
Circuit ID	Circuit ID of a physical interface.
Protocol state	State of TRILL: • **UP**. • **DOWN**.
Nickname	Nickname of the RB.
MTU	MTU (in bytes) of the link.
DRB	Whether the RB is elected as a DRB: • **Yes**—The RB is elected as a DRB. • **No**—The RB is not elected as a DRB. • **Down**—The interface is down and does not participate in DRB election.
Designated VLAN	Effective designated VLAN. The value **65535** indicates that the port is down or no VLAN is allowed on the port.
Link type	TRILL port type: • **Access**. • **Hybrid**. • **Trunk**.
CSNP timer	CSNP interval in seconds.
Hello timer	Hello interval in seconds.
Hello multiplier	Hello multiplier.
LSP timer	Minimum LSP interval in milliseconds.
LSP transmit-throttle count	Maximum number of LSPs transmitted per interval.
Cost	Link cost of the port.
AVF inhibited time	AVF inhibition time in seconds.
Priority	DRB priority.
Track index	Track entries associated with the TRILL port. If the TRILL port is not associated with any track entries, this field displays **None**. **NOTE:** The switch does not support associating a TRILL port with a track entry in the current software version.

Field	Description
Track state	Track entry state: • **NotReady**—The interface is not associated with any track entries, or the Track module is not connected. • **Positive**—The tracked interface operates correctly. • **Negative**—The tracked interface is abnormal. **NOTE:** The switch does not support associating a TRILL port with a track entry in the current software version.
Active AVF	VLANs for which the RB is specified as the AVF by the DRB on the port. If the RB is not specified as the AVF for any VLANs, this field displays **None**.
Inhibited AVF	VLANs whose AVFs are inhibited on the port. If no such VLAN exists on the port, this field displays **None**.

display trill l3-forwarding active-vlan

Use **display trill l3-forwarding active-vlan** to display the VLANs whose TRILL Layer 3 forwarding status is active.

Syntax

display trill l3-forwarding active-vlan

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Usage guidelines

This command is available in Release 1138P01 and later versions.

The TRILL Layer 3 forwarding status is active for a VLAN that meets the following requirements:

- TRILL Layer 3 forwarding is enabled both globally and for the VLAN.
- The VLAN interface is up.

Examples

Display the VLANs whose TRILL Layer 3 forwarding status is active.

```
<Sysname> display trill l3-forwarding active-vlan
Active VLANs:
1, 3, 5, 10-20
```

display trill l3-forwarding adjacent-table

Use **display trill l3-forwarding adjacent-table** to display TRILL Layer 3 adjacency table information.

Syntax

display trill l3-forwarding adjacent-table [**count** | **nickname** *nickname* **interface** *interface-type interface-number* **mac** *mac-address*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

count: Displays the number of entries.

nickname *nickname* **interface** *interface-type interface-number* **mac** *mac-address*: Specifies the nickname of the next-hop RB and the MAC address of the RB directly connected to the specified outgoing port. The *nickname* argument specifies the nickname of the next-hop RB, a hexadecimal number in the range of 0x1 to 0xFFFE. The *interface-type interface-number* argument specifies an outgoing port by its type and number. The *mac-address* argument specifies the MAC address of the RB directly connected to the outgoing port.

Usage guidelines

This command is available in Release 1138P01 and later versions.

If you do not specify any parameters, the command displays all entries in the TRILL Layer 3 adjacency table.

Examples

Display all entries in the TRILL Layer 3 adjacency table.

```
<Sysname> display trill l3-forwarding adjacent-table
NextHop     MAC address       Interface
0x899b      00e0-fc58-123a    XGE1/0/1
```

Display the specified TRILL Layer 3 adjacency entry.

```
<Sysname> display trill l3-forwarding adjacent-table nickname 0x899b interface
Ten-GigabitEthernet 1/0/1 mac 00e0-fc58-123a
NextHop     MAC address       Interface
0x899b      00e0-fc58-123a    XGE1/0/1
```

Display the number of entries in the TRILL Layer 3 adjacency table.

```
<Sysname> display trill l3-forwarding adjacent-table count
Total number of TRILL L3 ADJ entries: 3
```

Table 7 Command output

Field	Description
NextHop	Nickname of the next-hop RB. The next-hop RB can be directly or indirectly connected.
MAC address	MAC address of the RB directly connected to the outgoing port.
Interface	Outgoing port of TRILL Layer 3 traffic.
Total number of TRILL L3 ADJ entries	Number of entries in the TRILL Layer 3 adjacency table.

display trill l3-forwarding fib

Use **display trill l3-forwarding fib** to display TRILL Layer 3 FIB table information.

Syntax

display trill l3-forwarding fib [**count** | **nickname** *nickname*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

count: Displays the number of entries.

nickname *nickname*: Specifies an RB by its nickname, a hexadecimal number in the range of 0x1 to 0xFFFE.

Usage guidelines

This command is available in Release 1138P01 and later versions.

If you do not specify any parameters, the command displays all entries in the TRILL Layer 3 FIB table.

Examples

Display all entries in the TRILL Layer 3 FIB table.

```
<Sysname> display trill l3-forwarding fib
Flags: T-Transit, E-Egress
Destination   HopCount   NextHop   Interface               Flags
0xfa1b        63         N/A       N/A                     E
0x899b        63         0x2a5c    XGE1/0/1                T
```

Display the number of entries in the TRILL Layer 3 FIB table.

```
<Sysname> display trill l3-forwarding fib count
Total number of TRILL L3 FIB destinations: 1
Total number of TRILL L3 FIB entries: 2
```

Table 8 Command output

Field	Description
Destination	Nickname of the destination RB.
HopCount	Number of hops to the destination RB.
NextHop	Nickname of the next-hop RB. If the destination is the local RB, this field displays **N/A**.
Interface	Outgoing port of TRILL Layer 3 traffic. If the destination is the local RB, this field displays **N/A**.
Flags	Flags: • **T**—Transit. • **E**—Egress.

Field	Description
Total number of TRILL L3 FIB destinations	Number of destination RBs in the TRILL Layer 3 FIB table.
Total number of TRILL L3 FIB entries	Number of entries in the TRILL Layer 3 FIB table.

display trill l3-forwarding interface

Use **display trill l3-forwarding interface** to display TRILL Layer 3 forwarding status for VLAN interfaces.

Syntax

display trill l3-forwarding interface [**vlan-interface** *interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

vlan-interface *interface-number*: Specifies a VLAN interface by its number in the range of 1 to 4094. If you do not specify a VLAN interface, this command displays information about all the VLAN interfaces whose VLANs are enabled with TRILL Layer 3 forwarding.

Usage guidelines

This command is available in Release 1138P01 and later versions.

The TRILL Layer 3 forwarding status is active for a VLAN interface only when the following requirements are met:

- TRILL Layer 3 forwarding is enabled both globally and for the VLAN.
- The VLAN interface is up.

Examples

Displays VLAN interfaces that are enabled with TRILL Layer 3 forwarding.

```
<Sysname> display trill l3-forwarding interface
Total number of Vlan-interfaces: 5

Interface           Protocol   Track ID   Track state   Flag   Forwarding
------------------------------------------------------------------------------
Vlan-interface1     UP         None       None          True   Active
Vlan-interface2     UP         1          NotReady      True   Active
Vlan-interface3     UP         512        Positive      False  Inactive
Vlan-interface4     DOWN       1024       Negative      True   Inactive
Vlan-interface1024  DOWN       1024       Positive      True   Inactive
```

Table 9 Command output

Field	Description
Total number of Vlan-interfaces	Total number of the VLAN interfaces whose VLANs are enabled with TRILL Layer 3 forwarding.
Interface	Interface name.
Protocol	Data link layer protocol state of the VLAN interface: • **UP**—The data link layer protocol of the interface is up. • **DOWN**—The data link layer protocol of the interface is down.
Track ID	Track entry number. **NOTE:** The switch does not support associating a TRILL port with a track entry in the current software version.
Track state	Track entry state: • **NotReady**—The interface is not associated with any track entries, or the Track module is not connected. • **Positive**—The tracked interface operates correctly. • **Negative**—The tracked interface is abnormal. • **None**—The track entry does not exist. **NOTE:** The switch does not support associating a TRILL port with a track entry in the current software version.
Flag	Whether TRILL Layer 3 forwarding is enabled for the corresponding VLAN: • **True**—Enabled. • **False**—Disabled.
Forwarding	TRILL Layer 3 forwarding status of the corresponding VLAN: • **Active**. • **Inactive**.

display trill l3-forwarding neighbor-table

Use **display trill l3-forwarding neighbor-table** to display TRILL Layer 3 neighbor table information.

Syntax

display trill l3-forwarding neighbor-table

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Usage guidelines

This command is available in Release 1138P01 and later versions.

Examples

Display TRILL Layer 3 neighbor table information.

```
<Sysname> display trill l3-forwarding neighbor-table
Total number of neighbors: 1

Neighbor   MAC address       Interface
-------------------------------------
0x899b     00e0-fc58-123a    XGE1/0/1
```

Table 10 Command output

Field	Description
Total number of neighbors	Total number of neighbors, including directly and indirectly connected neighbors.
Neighbor	Nickname of the neighbor.
MAC address	MAC address of the next-hop RB to the neighbor.
Interface	Outgoing port.

display trill l3-forwarding unicast-route

Use **display trill l3-forwarding unicast-route** to display TRILL Layer 3 unicast routing table information.

Syntax

display trill l3-forwarding unicast-route [**nickname** *nickname*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

nickname *nickname*: Specifies an RB by its nickname, a hexadecimal number in the range of 0x1 to 0xFFFE. If do not specify an RB, the command displays TRILL Layer 3 unicast routes for all destination RBs.

Usage guidelines

This command is available in Release 1138P01 and later versions.

Examples

Display all entries in the TRILL Layer 3 unicast routing table.

```
<Sysname> display trill l3-forwarding unicast-route
Destinations: 2        Unicast routes: 2

Destination   Neighbor ID     MAC address     Interface
-----------------------------------------------------------
```

```
0xfa1b        0x0000          N/A             N/A
0x899b        0x01F5          00e0-fc58-123a  XGE1/0/1
```

Table 11 Command output

Field	Description
Destinations	Number of destination RBs.
Unicast routes	Number of unicast routes.
Destination	Nickname of the destination RB.
Neighbor ID	Neighbor ID associated with the next hop.
MAC address	MAC address of the next-hop RB. If the destination is the local RB, this field displays **N/A**.
Interface	Outgoing port. If the destination is the local RB, this field displays **N/A**.

display trill lsdb

Use **display trill lsdb** to display TRILL LSDB information.

Syntax

display trill lsdb [**local** | **lsp-id** *lsp-id* | **verbose**] *

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

local: Specifies locally originated LSPs.

lsp-id *lsp-id*: Specifies an LSP by its ID. The *lsp-id* argument is in the format of **SYSID.Pseudonode ID-fragment num**. **SYSID** is the system ID of the originating node or pseudo-node, and **fragment num** is the fragment number of the LSP. If you do not specify an LSP, the command displays information about all LSPs.

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

Examples

Display brief information about the TRILL LSDB.

```
<Sysname> display trill lsdb
Flags: * - Self LSP
LSP ID                 Seq num     Checksum  Holdtime  Length    Overload
-------------------------------------------------------------------------
00a0.fc00.5806.00-00*  0x00000005  0xd315    361       78        0
```

Display detailed information about the TRILL LSDB.

```
<Sysname> display trill lsdb verbose
```

```
LSP ID: 00a0.fc00.5806.00-00*
Sequence number: 0x00000005
Checksum: 0xd315
Holdtime: 1145s
Length: 78
Overload: 0
Source: 00a0.fc00.5806.00
TRILL version: 0x00
Nickname:
  Nickname: 0xfa1b
  Priority: 64
  Tree-root priority: 32768
Trees:
  Compute trees number: 1
  Max compute trees number: 15
  Used trees number: 1
Tree identifiers:
  0x899b
Trees used identifiers:
  0x899b
Interested VLANs:
  Start: 4, End: 4, M4: 0, M6: 0
  Start: 5, End: 6, M4: 1, M6: 0
Neighbor:
  ID: 00e0.fc58.123a.01, Cost: 2000
Group address:
  VLAN ID: 2
  Group MAC address: 0100-5e01-0101
```

Table 12 Command output

Field	Description
LSP ID	LSP ID. An asterisk (*) after an ID indicates that the LSP is locally originated.
Seq num/Sequence number	Sequence number of the LSP.
Checksum	Checksum of the LSP.
Holdtime	Remaining lifetime of the LSP (in seconds).
Length	LSP length.
Overload	Whether the Overload bit is set in the LSP: • **0**—Not set. • **1**—Set.
Source	Number of the originating RB.
TRILL version	Highest TRILL version supported by the originating RB.
Nickname	Nickname information for the originating RB: • **Nickname**—Nickname of the RB. • **Priority**—Priority to hold the nickname. • **Tree-root priority**—Priority to be a TRILL distribution tree root.

Field	Description
Trees	TRILL distribution tree computation information for the originating RB: • **Compute trees number**—Number of TRILL distribution trees that the RB wants all RBs to compute. • **Max compute trees number**—Maximum number of TRILL distribution trees that the RB can compute. • **Used trees number**—Number of TRILL distribution trees to use when the RB is an ingress RB.
Tree identifiers	TRILL distribution trees that the originating RB requires other RBs to compute when the originating RB has the highest priority to be the distribution tree root.
Trees used identifiers	TRILL distribution trees used by the originating RB when the RB is an ingress RB.

Interested VLANs	Information about the VLANs that use the originating RB as the AVF:
	• **Start**—Start VLAN ID.
	• **End**—End VLAN ID.
	• **M4**—Whether an IPv4 multicast router exists in the VLAN range:
	  ○ **0**—Exists.
	  ○ **1**—Does not exist.
	• **M6**—Whether an IPv6 multicast router exists in the VLAN range:
	  ○ **0**—Exists.
	  ○ **1**—Does not exist.

Neighbor	Neighbor information for the originating RB: • **ID**—ID of the neighbor. • **Cost**—Cost of the link to the neighbor.
Group address	Multicast MAC address information for the originating RB: • **VLAN ID**—ID of the VLAN to which the multicast MAC addresses belong. • **Group MAC address**—Multicast group listeners.

display trill mfib ingress

Use **display trill mfib ingress** to display ingress entries in the TRILL MFIB table.

Syntax

display trill mfib ingress [**vlan** *vlan-id* [**local-entry** | **remote-entry**]]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

vlan *vlan-id*: Specifies a VLAN by its ID in the range of 1 to 4094. If you do not specify a VLAN, the command displays information about all VLANs.

local-entry: Specifies local ingress entries. The frames sent by the ports in the local ingress entries do not need TRILL encapsulation.

remote-entry: Specifies remote ingress entries. The frames sent by the ports in the remote ingress entries need TRILL encapsulation.

Usage guidelines

If neither **local-entry** or **remote-entry** is specified, this command displays information about local and remote ingress entries.

Examples

Display all ingress entries in the TRILL MFIB table.

```
<Sysname> display trill mfib ingress
------------------------------------------------------------------------
Ingress type: Local entry
  VLAN ID: 1
  Ports:
    XGE1/0/1
------------------------------------------------------------------------
Ingress type: Remote entry
  VLAN ID: 1
  RootNickName: 0x5092
  Ports:
    XGE1/0/2
```

Table 13 Command output

Field	Description
Ingress type	Type of ingress entries: • **Local entry**. • **Remote entry**.
VLAN ID	VLAN ID of the entry.
RootNickName	Nickname of the root bridge.
Ports	Ports of the entry.

display trill mfib transit

Use **display trill mfib transit** to display egress entries in the TRILL MFIB table.

Syntax

display trill mfib transit [**nickname** *nickname* [**prune-entry** | **rpf-entry** | **vlan** *vlan-id* [**mac** *mac-address*]]]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

nickname *nickname*: Specifies an RB by its nickname, a hexadecimal number in the range of 0x1 to 0xFFFE. If no RB is specified, the command displays information about all RBs.

prune-entry: Specifies pruned entries. If you do not specify this keyword, the command displays information about all entries.

rpf-entry: Specifies RPF entries. If you do not specify this keyword, the command displays information about all entries.

vlan *vlan-id*: Specifies a VLAN by its ID in the range of 1 to 4094. If no VLAN is specified, the command displays information about all VLANs.

mac *mac-address*: Specifies a MAC address. If no MAC address is specified, the command displays information about all MAC addresses.

Examples

Display all egress entries in the TRILL MFIB table.

```
<Sysname> display trill mfib transit
------------------------------------------------------------------------
Transit type: RPF entry
  RootNickName: 0x5092
  InNickName: 0x5092
  Port: XGE1/0/1
------------------------------------------------------------------------
Transit type: RB entry
  RootNickName: 0x5092
  Flag: Egress/Transit
  Ports:
    XGE1/0/1
------------------------------------------------------------------------
Transit type: VLAN RB entry
  RootNickName: 0x5092
  VLAN ID: 1
  Flag: Egress/Transit
  Ports:
    XGE1/0/1
```

Table 14 Command output

Field	Description
Transit type	Type of egress entries: • **RB entry**. • **RPF entry**. • **VLAN RB entry**—RB entries of the specified VLAN. • **MAC VLAN RB entry**—RB entries of the specified VLAN and MAC address.
RootNickName	Nickname of the root bridge.
InNickName	Nickname of the ingress RB.
VLAN ID	VLAN ID of the entry.
MAC address	MAC address of the entry.

Field	Description
Flag	Entry type: • **Egress**—Egress entries. • **Transit**—Transit entries. • **Egress/Transit**—Both transit and egress entries.
Port/Ports	Ports of the entry.

display trill multicast-route

Use **display trill multicast-route** to display TRILL multicast routing table information, which includes the next-hop outgoing port list for multidestination frames based on multicast distribution trees.

Syntax

display trill multicast-route [**tree-root** *nickname* [**vlan** *vlan-list* [**mac-address** *mac-address*]]]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

tree-root *nickname*: Specifies a TRILL distribution tree by its root RB's nickname, a hexadecimal number in the range of 0x0 to 0xFFFF. If you do not specify this option, the command displays multicast routing table information for all TRILL distribution trees.

vlan *vlan-list*: Specifies a space-separated list of up to 10 VLAN items. Each VLAN item specifies a VLAN ID or a range of VLAN IDs in the form of *start-vlan-id* **to** *end-vlan-id*, where the end VLAN ID must be greater than the start VLAN ID. Valid VLAN IDs are from 1 to 4094. If no VLAN is specified, the command displays information about all VLANs.

mac-address *mac-address*: Specifies a MAC address. If no MAC address is specified, the command displays information about all MAC addresses.

Examples

Display all entries in the TRILL multicast routing table.

```
<Sysname> display trill multicast-route
Root                          Flag
-------------------------------------
0x899b                        Valid
```

Display multicast routing information for the TRILL distribution tree that is rooted at the RB 0x899B.

```
<Sysname> display trill multicast-route tree-root 899b
Root: 0x899b
LocalRcvFlag: True
List of VLANs:
  1 to 10, 13, 40, 60 to 85, 200, 1001
List of outgoing ports (4 in total):
```

```
  XGE1/0/1
  XGE1/0/2
  XGE1/0/3
  XGE1/0/4
```

Display multicast routing information for VLAN 1's distribution tree that is rooted at the RB 0x899B.

```
<Sysname> display trill multicast-route tree-root 899b vlan 1
Root: 0x899b
VLAN: 1
LocalRcvFlag: False
List of outgoing ports (3 in total):
  XGE1/0/1
  XGE1/0/2
  XGE1/0/3
List of IPv4 multicast-router ports (2 in total):
  XGE1/0/1
  XGE1/0/2
List of MAC addresses (4 in total):
  0000-1111-00ee
  00ff-1111-00ff
  00ef-1111-00ef
  0000-111f-00ff
```

Display multicast routing information for VLAN 1's distribution tree that is rooted at the RB 0x899B and the MAC address 0011-11FF-0022.

```
<Sysname> display trill multicast-route tree-root 899b vlan 1 mac-address 0011-11ff-0022
Root: 0x899b
VLAN: 1
MAC address: 0011-11ff-0022
LocalRcvFlag: True
List of outgoing ports (2 in total):
  XGE1/0/3
  XGE1/0/4
```

Table 15 Command output

Field	Description
Root	Nickname of the TRILL distribution tree's root RB.
VLAN	ID of the VLAN.
Flag	Whether the root bridge is valid: • **Invalid**. • **Valid**.
LocalRcvFlag	Local receiving flag: • **False**—The local end does not de-encapsulate the TRILL frame. • **True**—The local end de-encapsulates the TRILL frame and forwards the frame.
List of outgoing ports (4 in total)	Outgoing port list and total port number. If no outgoing port exists, this field displays **None**.
List of VLANs (2 in total)	VLAN list and total VLAN number. If no VLAN exists, this field displays **None**.

Field	Description
List of IPv4 multicast-router ports (2 in total)	Port list of the IPv4 multicast router and total port number.
List of MAC addresses (4 in total)	MAC address list and total MAC address number.

display trill neighbor-table

Use **display trill neighbor-table** to display TRILL Layer 2 neighbor table information.

Syntax

display trill neighbor-table

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Examples

Display TRILL Layer 2 neighbor table information.

```
<Sysname> display trill neighbor-table
Total number of nexthops: 3

NextHop   MAC address       Interface
--------------------------------------------------------------------------
0x899b    00e0-fc58-123a    XGE1/0/1
```

Table 16 Command output

Field	Description
NextHop	Nickname of the next-hop RB.
MAC address	MAC address of the next-hop RB.
Interface	Outgoing port.

display trill peer

Use **display trill peer** to display TRILL neighbor statistics.

Syntax

display trill peer [**interface** *interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

interface *interface-type interface-number*: Specifies an interface by its type and number. If you do not specify an interface, the command displays information about all interfaces.

Examples

Display TRILL neighbor statistics for Ten-GigabitEthernet 1/0/1.

```
<Sysname> display trill peer interface ten-gigabitethernet 1/0/1
System ID: 00e0.fc58.123a
Interface: Ten-GigabitEthernet1/0/1
Circuit ID: 00e0.fc58.123a.01
State: Up
Holdtime: 8s
DRB priority: 64
Nickname: 0x899b
Uptime: 00:38:15
```

Table 17 Command output

Field	Description
System ID	System ID of the neighbor.
Interface	Local TRILL port directly connected to the neighbor.
Circuit ID	LSP number of the pseudonode.
State	Neighbor state: • **Up**. • **Down**.
Holdtime	Remaining holding time (in seconds) of the adjacency. If no Hello frame is received from a neighbor within the holding time, the neighbor is considered invalid. When a Hello frame is received from a neighbor within the holding time, the holding time is restarted.
DRB priority	DRB priority of the neighbor port.
Nickname	Nickname of the neighbor.
Uptime	Time for which the adjacency has been held.

display trill rpf-table

Use **display trill rpf-table** to display TRILL RPF check table information.

Syntax

display trill rpf-table tree-root *nickname*

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

tree-root *nickname*: Specifies a TRILL distribution tree by its root RB's nickname, a hexadecimal number in the range of 0x0 to 0xFFFF.

Usage guidelines

The RB uses the TRILL RPF check table to check whether the incoming port of a multidestination frame is valid. The egress RB for a multidestination frame is the root bridge of the frame's distribution tree. The RB checks the RPF check table for the frame's expected incoming port based on the frame's egress and ingress RB nicknames. If the frame is not received on the expected incoming port, the RB considers the frame invalid and drops it.

Examples

Display TRILL RPF check table entries for the TRILL distribution tree that is rooted at the RB 0x899B.

```
<Sysname> display trill rpf-table tree-root 899b
Ingress-nickname           Expected-rcv-ports
-------------------------------------------
0x1fff                     XGE1/0/1
0x1ff0                     XGE1/0/2
0x0ffe                     XGE1/0/3
```

Table 18 Command output

Field	Description
Ingress-nickname	Nickname of the ingress RB.
Expected-rcv-ports	Expected incoming port.

display trill topology

Use **display trill topology** to display TRILL topology information.

Syntax

display trill topology [**verbose**]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

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

Usage guidelines

This command is available in Release 1138P01 and later versions.

Examples

Display brief TRILL topology information.

```
<Sysname> display trill topology
                        TRILL topology information
                        --------------------------
    Flags: O-Node is overloaded          R-Node is directly reachable
           D-Node or link is to be deleted

SPF node          Node flag    SPF link               Link cost  Link flag
------------------------------------------------------------------------------
0011.2200.0201.00 -/-/-
                               -->0011.2200.0301.01   20000      -
0011.2200.0301.01 -/R/-
                               -->0011.2200.0201.00   0          -
                               -->0011.2200.0301.00   0          -
0011.2200.0301.00 -/-/-
                               -->0011.2200.0301.01   20000      -
```

Display detailed TRILL topology information.

```
<Sysname> display trill topology verbose
                        TRILL topology information
                        --------------------------
    Flags: O-Node is overloaded          R-Node is directly reachable
           D-Node or link is to be deleted

SPF node: 0011.2200.0201.00
  Node flag: -/-/-
  SPF links count: 1
  -->0011.2200.0301.01
    Link cost: 20000
    Link flag: -
    Link sources: 1
     Link source 1
       Type: Adjacent       Interface: N/A
       Cost: 20000          NextHop: N/A

SPF node: 0011.2200.0301.01
  Node flag: -/R/-
  SPF links: 2
  -->0011.2200.0201.00
    Link cost: 0
    Link flag: -
    Link sources count: 1
     Link source 1
       Type: Remote         Interface: N/A
       Cost: 0              NextHop: N/A
```

```
  -->0011.2200.0301.00
    Link cost: 0
    Link flag: -
    Link sources: 1
     Link source 1
       Type: Remote         Interface: XGE1/0/1
       Cost: 0              NextHop: 0x0002

SPF node: 0011.2200.0301.00
  Node flag: -/-/-
  SPF links: 1
  -->0011.2200.0301.01
    Link cost: 20000
    Link flag: -
    Link sources: 1
     Link source 1
       Type: Remote         Interface: N/A
       Cost: 20000          NextHop: N/A
```

Table 19 Command output

Field	Description
SPF node	SPF node ID.
Node flag	Flag that indicates the node state: • **O**—The node is in overload state and is not usable. • **R**—The node is directly connected. • **D**—The node is to be deleted.
SPF links	Number of SPF links.
Link flag	Flag that indicates the link state. If the link is to be deleted, this filed displays **D**.
Link sources	Number of link sources.
Link source 1	Information about a link source.
Type	Link source type: • **Adjacent**—The link source is a neighbor. • **Remote**—The link source is not a neighbor.
Cost	Link cost from the RB to the link source.

display trill unicast-route

Use **display trill unicast-route** to display TRILL Layer 2 unicast routing table information.

Syntax

display trill unicast-route [**nickname** *nickname*] [**verbose**]

Views

Any view

Predefined user roles

network-admin

network-operator

mdc-admin

mdc-operator

Parameters

nickname *nickname*: Specifies an RB by its nickname, a hexadecimal number in the range of 0x1 to 0xFFFE. If no RB is specified, the command displays information about all RBs.

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

Examples

Display brief information about all entries in the TRILL Layer 2 unicast routing table.

```
<Sysname> display trill unicast-route
Destinations: 2        Unicast routes: 2

Destination    Interface                NextHop
--------------------------------------------
0xfa1b         N/A                      N/A
0x899b         XGE1/0/1                 Direct
```

Display detailed information about all entries in the TRILL Layer 2 unicast routing table.

```
<Sysname> display trill unicast-route verbose
Destinations: 2        Unicast routes: 2

Destination: 0xfa1b
NextHop count: 0            Neighbor ID: 0x0000

Destination: 0x899b
NextHop count: 1             Neighbor ID: 0x0101
Interface: XGE1/0/1          NextHop: Direct
```

Table 20 Command output

Field	Description
Destinations	Number of destination RBs.
Unicast routes	Number of unicast routes.
Destination	Nickname of the destination RB.
Interface	Outgoing port.
NextHop	Nickname of the next-hop RB.
NextHop count	Number of next hops.
Neighbor ID	Neighbor ID associated with the next hop.

flash-flood

Use **flash-flood** to enable TRILL LSP fast advertisement.

Use **undo flash-flood** to disable TRILL LSP fast advertisement.

Syntax

flash-flood [**flood-count** *flooding-count* | **max-timer-interval** *flooding-interval*] *

undo flash-flood

Default

TRILL LSP fast advertisement is disabled.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

flood-count *flooding-count*: Specifies the maximum number of LSPs that can be fast advertised. The value range for the *flooding-count* argument is 1 to 15, and the default value is 5.

max-timer-interval *flooding-interval*: Specifies the delay before fast advertisement is performed. The value range for the *flooding-interval* argument is 0 to 50000 milliseconds. The default value is 0, which indicates that LSP fast advertisement is performed without delay.

Usage guidelines

This command is available in Release 1138P01 and later versions.

LSP fast advertisement enables TRILL to immediately advertise the specified number of LSPs that invoke SPF calculation. This mechanism improves network convergence time.

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

Examples

Enable TRILL LSP fast advertisement, set the maximum number to 10 for fast advertised LSPs, and set the advertisement delay to 10 milliseconds.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] flash-flood flood-count 10 max-timer-interval 10
```

flush-policy difference

Use **flush-policy difference** to enable incremental flush for TRILL multicast routing entries.

Use **undo flush-policy difference** to restore the default.

Syntax

flush-policy difference

undo flush-policy difference

Default

Incremental flush is disabled for TRILL multicast routing entries.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command is available in Release 1138P01 and later versions.

TRILL multicast routing entries are classified into three levels according to the following key combinations:

- **RB**—Root bridge of a TRILL distribution tree.
- **RB+VLAN**—Root bridge and VLAN of a TRILL distribution tree.
- **RB+VLAN+MAC**—Root bridge and VLAN of a TRILL distribution tree and a MAC address.

An entry that is identified by fewer keys is at a higher level.

The incremental flush feature enables the device to compare the outgoing port list and local receiving flag of an entry with its next higher level entry. If the two entries have the same outgoing port list and local receiving flag, the higher level entry is issued to the TRILL FIB. For example, if entry RB 2 and entry RB 2+VLAN 10 have the same outgoing port list and local receiving flag, entry RB 2 is issued.

This feature reduces the number of flushed entries in the scenarios where an entry and its next higher level entry have the same outgoing port list and local receiving flag. Enabling this feature in other scenarios causes the system to issue a large number of entries at the same time and degrades performance.

Examples

Enable incremental flush for TRILL multicast routing entries.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] flush-policy difference
```

graceful-restart

Use **graceful-restart** to enable GR for TRILL.

Use **undo graceful-restart** to disable GR for TRILL.

Syntax

graceful-restart

undo graceful-restart

Default

GR is disabled for TRILL.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Examples

Enable GR for TRILL.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] graceful-restart
```

graceful-restart interval

Use **graceful-restart interval** to set the GR restart interval for TRILL.

Use the **undo graceful-restart interval** to restore the default.

Syntax

graceful-restart interval *interval*

undo graceful-restart interval

Default

The GR restart interval is 300 seconds for TRILL.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

interval: Specifies the GR restart interval in the range of 30 to 1800 seconds.

Examples

Set the restart interval to 120 seconds for TRILL.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] graceful-restart interval 120
```

graceful-restart suppress-sa

Use **graceful-restart suppress-sa** to suppress the SA bit during graceful restart.

Use **undo graceful-restart suppress-sa** to restore the default.

Syntax

graceful-restart suppress-sa

undo graceful-restart suppress-sa

Default

The SA bit is set during graceful restart.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command is available in Release 1138P01 and later versions.

Setting the SA bit prevents neighbors from advertising the adjacency with the GR restarter when the forwarding table is not usable on the restarter. This prevents route blackholes by temporarily excluding the restarter from the SPF calculation on other RBs. If fast restart is required, you can suppress the SA bit.

Examples

Suppress the SA bit during graceful restart.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] graceful-restart suppress-sa
```

ingress assign-delay

Use **ingress assign-delay** to set the delay timer for the RB to switch ingress traffic to a new distribution tree.

Use **undo ingress assign-delay** to restore the default.

Syntax

ingress assign-delay *delay*

undo ingress assign-delay

Default

The delay timer is 300 seconds.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

delay: Specifies the delay timer in the range of 1 to 3600 seconds.

Usage guidelines

This command is available in Release 1138P01 and later versions.

When a distribution tree is added, the RB switches ingress traffic of some VLANs that use the RB as the AVF to the new tree to implement load balancing. However, the RB cannot use the new distribution tree to forward traffic before other RBs are ready to use the new tree. In this case, you can set a delay timer for the RB to switch ingress traffic to the new distribution tree.

Examples

Set the delay timer to 600 seconds for the RB to switch ingress traffic to a new distribution tree.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] ingress assign-delay 600
```

Related commands

ingress assign-rule load-balancing

ingress assign-rule load-balancing

Use **ingress assign-rule load-balancing** to enable load balancing over TRILL distribution trees.

Use **undo ingress assign-rule** to restore the default.

Syntax

ingress assign-rule load-balancing

undo ingress assign-rule

Default

Load balancing over TRILL distribution trees is disabled.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command is available in Release 1138P01 and later versions.

This command is applicable to the scenario where a forwarding VLAN is deleted on the RB and load balancing over existing distribution trees is required.

Examples

Enable load balancing over TRILL distribution trees.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] ingress assign-rule load-balancing
```

l3-forwarding enable

Use **l3-forwarding enable** to enable TRILL Layer 3 forwarding globally.

Use **undo l3-forwarding enable** to restore the default.

Syntax

l3-forwarding enable

undo l3-forwarding enable

Default

TRILL Layer 3 forwarding is disabled globally.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command is available in Release 1138P01 and later versions.

TRILL Layer 3 forwarding is supported only on FE and FX cards.

Execute this command on the gateway RBs to forward Layer 3 traffic.

TRILL can perform Layer 3 forwarding only for IPv4 unicast traffic.

Examples

Enable TRILL Layer 3 forwarding globally.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] l3-forwarding enable
```

l3-forwarding vlan

Use **l3-forwarding vlan** to enable TRILL Layer 3 forwarding for VLANs.

Use **undo l3-forwarding vlan** to disable TRILL Layer 3 forwarding for VLANs.

Syntax

l3-forwarding vlan { *vlan-list* **| all** }

undo l3-forwarding vlan { *vlan-list* **| all** }

Default

TRILL Layer 3 forwarding is disabled for all VLANs.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

vlan-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 *vlan-id2* must be equal to or greater than the value for *vlan-id1*.

all: Specifies all VLANs.

Usage guidelines

This command is available in Release 1138P01 and later versions.

TRILL Layer 3 forwarding is supported only on FE and FX cards.

Execute this command on the gateway RBs.

Before you enable TRILL Layer 3 forwarding for a VLAN, create the VLAN interface for the VLAN and assign an IP address to the VLAN interface.

For TRILL Layer 3 forwarding to take effect on a VLAN, make sure TRILL Layer 3 forwarding is enabled both globally and for the VLAN.

Examples

Enable TRILL Layer 3 forwarding for VLAN 1 through VLAN 100.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] l3-forwarding vlan 1 to 100
```

log-peer-change enable

Use **log-peer-change enable** to enable logging of TRILL neighbor changes.

Use **undo log-peer-change enable** to disable logging of TRILL neighbor changes.

Syntax

log-peer-change enable

undo log-peer-change enable

Default

Logging of TRILL neighbor changes is enabled.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command enables TRILL to output neighbor changes to the configuration terminal.

Examples

Disable logging of TRILL neighbor changes.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] undo log-peer-change enable
```

lsp-length originate

Use **lsp-length originate** to set the maximum length of the LSPs that the RB can originate.

Use **undo lsp-length originate** to restore the default.

Syntax

lsp-length originate *size*

undo lsp-length originate

Defaults

The maximum length of originated LSPs is 1458 bytes.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

size: Specifies the maximum length of originated LSPs, in the range of 512 to 16384 bytes.

Usage guidelines

The maximum length of originated LSPs cannot be greater than the maximum length of received LSPs. Otherwise, the system generates an error message.

The RB selects the smallest value from the following values as the actual maximum length of LSPs to be sent to a neighbor:

- The configured maximum length of originated LSPs.
- The interface MTU.
- The maximum originated LSP length carried in the LSPs sent by neighbors.

Examples

Set the maximum length of originated LSPs to 1024 bytes.

```
<Sysname> system-view
[Sysname] trill
```

```
[Sysname-trill] lsp-length originate 1024
```

Related commands

lsp-length receive

lsp-length receive

Use **lsp-length receive** to set the maximum length of the LSPs that the RB can receive.

Use **undo lsp-length receive** to restore the default.

Syntax

lsp-length receive *size*

undo lsp-length receive

Defaults

The maximum length of received LSPs is 1492 bytes.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

size: Specifies the maximum length of received LSPs, in the range of 512 to 16384 bytes.

Usage guidelines

The maximum length of originated LSPs cannot be greater than the maximum length of received LSPs. Otherwise, the system generates an error message.

Examples

Set the maximum length of received LSPs to 1024 bytes.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] lsp-length receive 1024
```

Examples

lsp-length originate

max-unicast-load-balancing

Use **max-unicast-load-balancing** to set the maximum number of TRILL unicast equal-cost routes.

Use **undo max-unicast-load-balancing** to restore the default.

Syntax

max-unicast-load-balancing *number*

undo max-unicast-load-balancing

Defaults

The maximum number of TRILL unicast equal-cost routes is 32.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

number: Specifies the maximum number of TRILL unicast equal-cost routes, in the range of 1 to 32. The value of 1 indicates that load balancing is not performed.

Examples

Set the maximum number of TRILL unicast equal-cost routes to 3.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] max-unicast-load-balancing 3
```

multicast multi-thread enable

Use **multicast multi-thread enable** to enable TRILL distribution tree multithread calculation.

Use **undo multicast multi-thread enable** to disable TRILL distribution tree multithread calculation.

Syntax

multicast multi-thread enable

undo multicast multi-thread enable

Default

TRILL distribution tree multithread calculation is disabled.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command is available in Release 1138P01 and later versions.

This command enables a multicore CPU device to improve TRILL distribution tree calculation efficiency by using each thread to calculate a distribution tree.

If you enable TRILL distribution tree multithread calculation on a single-core CPU device, calculation efficiency might not be improved.

Enabling or disabling this feature clears dynamic running statistics of the TRILL process.

Examples

Enable TRILL distribution tree multithread calculation.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] multicast multi-thread enable
```

Related commands

reset trill

multicast-ecmp enable

Use **multicast-ecmp enable** to enable TRILL multicast Equal Cost Multiple Path (ECMP).

Use **undo multicast-ecmp enable** to disable TRILL multicast ECMP.

Syntax

multicast-ecmp enable [**p2p-ignore**]

undo multicast-ecmp enable

Default

TRILL multicast ECMP is disabled.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

p2p-ignore: Uses one of the equal-cost routes between the DRB and its neighbor to forward multicast traffic when the pseudonode bypass feature is enabled on the DRB. If you do not specify this keyword, all the equal-cost routes are used to share traffic. To communicate with a third-party device, you can specify this keyword as required. This keyword is available in Release 1138P01 and later versions.

Usage guidelines

When multicast ECMP is disabled, TRILL distribution trees do not use equal-cost routes to share traffic. When multicast ECMP is enabled, TRILL assigns equal-cost routes to multiple TRILL distribution trees to improve load sharing performance.

For multicast traffic to be forwarded correctly, make sure the status of TRILL multicast ECMP is the same across the TRILL network.

Examples

Enable TRILL multicast ECMP.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] multicast-ecmp enable
```

nickname

Use **nickname** to configure the nickname for the RB.

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

Syntax

nickname *nickname* [**priority** *priority*]

undo nickname *nickname*

Defaults

The system automatically assigns nicknames to RBs. The priority is 64 for an RB to hold a nickname.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

nickname: Specifies an RB by its nickname, a hexadecimal number in the range of 0x1 to 0xFFBF.

priority *priority*: Specifies a priority for the RB to hold the nickname. The value range for the *priority* argument is 129 to 255, and the default value is 192.

Usage guidelines

A nickname is an RB's address in the TRILL network.

In the TRILL network, when multiple RBs hold the same nickname, the RB with the highest priority uses the nickname.

When the RBs also have the same priority, the RB with the highest system ID uses the nickname. The system automatically assigns new nicknames to the other RBs.

Examples

Set the nickname to 0x0001 for the RB, and set the priority to 198 for the RB to hold the nickname.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] nickname 0001 priority 198
```

ping trill

Use **ping trill** to test the reachability of an RB and display ping TRILL statistics.

Syntax

ping trill [**-c** *count* | **-h** *ttl* | **-i** *interface-type interface-number* | **-m** *interval* | **-priority** *priority* | **-t** *timeout*] * *nickname*

Views

Any view

Predefined user roles

network-admin

mdc-admin

Parameters

-c *count*: Specifies the number of OAM echo requests that are sent to the destination. The value range is 1 to 4294967295, and the default value is 5.

-h *ttl*: Specifies the TTL value of OAM echo requests. The value range is 1 to 63, and the default value is 63.

-i *interface-type interface-number*: Specifies the source interface for OAM echo requests. If you do not specify this option when multiple equal-cost routes to the destination exist, the system uses the first egress interface as the source interface.

-m *interval*: Specifies the sending interval for OAM echo requests. The value range is 1 to 10000 milliseconds, and the default value is 200 milliseconds.

-priority *priority*: Specifies the 802.1p priority in the inner Ethernet header of the OAM echo requests. The value range is 0 to 7, and the default value is 0. A higher value indicates a higher priority.

-t *timeout*: Specifies the timeout time of an OAM echo reply. The value range is 0 to 65535 milliseconds, and the default value is 2000 milliseconds. If the source does not receive an OAM echo reply within the timeout, it considers the OAM echo reply times out.

nickname: Specifies a destination RB by its nickname for Layer 2 forwarding, in the range of 0x1 to 0xFFBF in hexadecimal format. To view the Layer 2 forwarding nickname of an RB, use the **display trill brief** command.

Usage guidelines

This command is available in Release 1138P01 and later versions.

To abort the ping TRILL operation during the execution of the command, press **Ctrl+C**.

Examples

Test whether RB 0xbca3 is reachable.

```
<Sysname> ping trill bca3
Ping TRILL 0xbca3, press CTRL_C to break
reply from 0xbca3: seq=0 ttl=63 time=0.851 ms
reply from 0xbca3: seq=1 ttl=63 time=0.812 ms
reply from 0xbca3: seq=2 ttl=63 time=0.849 ms
reply from 0xbca3: seq=3 ttl=63 time=0.831 ms
reply from 0xbca3: seq=4 ttl=63 time=0.872 ms

--- Ping TRILL statistics for 0xbca3 ---
5 packet(s) transmitted, 5 packet(s) received, 0.00% packet loss
round-trip min/avg/max = 0.812/0.843/0.872 ms
```

Table 21 Command output

Field	Description
Ping TRILL 0xbca3, press CTRL_C to break	Test whether RB 0xbca3 is reachable. Press **Ctrl+C** to abort the ping TRILL operation.
reply from 0xbca3: seq=0 ttl=63 time=0.851 ms	Received echo replies from RB 0xbca3. If no echo reply is received within the timeout period, this field displays **Request time out**. • **seq**—Packet sequence number. • **ttl**—TTL value in the echo reply. • **time**—Response time.
--- Ping TRILL statistics for 0xbca3 ---	Statistics on data received and sent in the ping TRILL operation.
5 packet(s) transmitted	Number of sent OAM echo requests.
5 packet(s) received	Number of received OAM echo replies.
0.00% packet loss	Percentage of unacknowledged packets to the total sent packets.
round-trip min/avg/max = 0.812/0.843/0.872 ms	Minimum/average/maximum response time in milliseconds.

reset trill

Use **reset trill** to clear dynamic running statistics of the TRILL process.

Syntax

reset trill

Views

User view

Predefined user roles

network-admin

mdc-admin

Examples

Clear dynamic running statistics of the TRILL process.

```
<Sysname> reset trill
```

set ingress-load-balancing

Use **set ingress-load-balancing** to perform one-time load balancing over TRILL distribution trees.

Syntax

set ingress-load-balancing

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command is available in Release 1138P01 and later versions.

If traffic is not evenly distributed over distribution trees, you can perform one-time load balancing over TRILL distribution trees.

This command might affect the forwarding of some packets.

Examples

Perform one-time load balancing over TRILL distribution trees.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] set ingress-load-balancing
```

Related commands

ingress assign-rule load-balancing

set overload

Use **set overload** to set the Overload bit of LSPs and the lifetime of the set Overload bit.

Use **undo set overload** to restore the default.

Syntax

set overload [*timeout*]

undo set overload

Defaults

The Overload bit of LSPs is not set.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

timeout: Specifies the lifetime of the set Overload bit. The value range for this argument is 5 to 3600 seconds. By default, the lifetime of the set Overload bit is infinite, which means that the Overload bit remains set until the **undo set overload** command is executed.

Usage guidelines

This command is available in Release 1138P01 and later versions.

Do not configure this command on the root RB of a TRILL distribution tree. The root RB cannot forward traffic when the Overload bit of LSPs is set on the RB.

Examples

Set the Overload bit of LSPs and set the lifetime of the set Overload bit to 1200 seconds.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] set overload 1200
```

set-overload

Use **set-overload** to set the Overload bit of LSPs and the lifetime of the set Overload bit.

Use **undo set-overload** to restore the default.

Syntax

set-overload [*timeout*]

undo set-overload

Defaults

The Overload bit of LSPs is not set.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

timeout: Specifies the lifetime of the set Overload bit. The value range for this argument is 5 to 3600 seconds. By default, the lifetime of the set Overload bit is infinite, which means that the Overload bit remains set until the **undo set-overload** command is executed.

Usage guidelines

This command is available in Release 1135.

Do not configure this command on the root RB of a TRILL distribution tree. The root RB cannot forward traffic when the Overload bit of LSPs is set on the RB.

Examples

Set the Overload bit of LSPs and set the lifetime of the set Overload bit to 1200 seconds.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] set-overload 1200
```

snmp context-name

Use **snmp context-name** to set an SNMP context name for TRILL.

Use **undo snmp context-name** to restore the default.

Syntax

snmp context-name *context-name*

undo snmp context-name

Default

No SNMP context name is set for TRILL.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

context-name: Specifies a context name, a case-sensitive string of 1 to 32 characters.

Usage guidelines

TRILL shares the standard IS-IS MIB with IS-IS. The standard IS-IS MIB provides only single-instance MIB objects. For SNMP to correctly identify TRILL's management information in the standard IS-IS MIB, you must configure a unique context name for TRILL.

Context is a method introduced to SNMPv3 for multiple-instance management. For SNMPv1/v2c, you must specify a community name as a context name for protocol identification.

Examples

Set the context name to **trill** for TRILL.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] snmp context-name trill
```

snmp-agent trap enable trill

Use **snmp-agent trap enable trill** to enable SNMP notifications for TRILL.

Use **undo snmp-agent trap enable trill** to disable SNMP notifications for TRILL.

Syntax

snmp-agent trap enable trill [**adjacency-state-change** | **area-mismatch** | **buffsize-mismatch** | **id-length-mismatch** | **lsdboverload-state-change** | **lsp-parse-error** | **lsp-size-exceeded** | **max-seq-exceeded** | **maxarea-mismatch** | **new-drb** | **own-lsp-purge** | **protocol-support** | **rejected-adjacency** | **skip-sequence-number** | **topology-change** | **version-skew**] *

undo snmp-agent trap enable trill [**adjacency-state-change** | **area-mismatch** | **buffsize-mismatch** | **id-length-mismatch** | **lsdboverload-state-change** | **lsp-parse-error** | **lsp-size-exceeded** | **max-seq-exceeded** | **maxarea-mismatch** | **new-drb** | **own-lsp-purge** | **protocol-support** | **rejected-adjacency** | **skip-sequence-number** | **topology-change** | **version-skew**] *

Default

SNMP notifications are enabled for TRILL.

Views

System view

Predefined user roles

network-admin

mdc-admin

Parameters

adjacency-state-change: Specifies notifications about TRILL adjacency state changes.

area-mismatch: Specifies notifications about mismatches in area addresses between Hello packets.

buffsize-mismatch: Specifies notifications about buffer size mismatches for LSPs.

id-length-mismatch: Specifies notifications about mismatches in system ID lengths of TRILL frames.

lsdboverload-state-change: Specifies notifications about LSDB overload state changes.

lsp-parse-error: Specifies notifications about LSP packet parse errors.

lsp-size-exceeded: Specifies notifications about oversized LSPs that result in flooding failures.

max-seq-exceeded: Specifies notifications about LSPs with exceeded sequence numbers.

maxarea-mismatch: Specifies notifications about mismatches in maximum area address values.

new-drb: Specifies notifications sent about becoming new DRBs.

own-lsp-purge: Specifies notifications about attempts to purge local LSPs.

protocol-support: Specifies notifications about supported protocol mismatches.

rejected-adjacency: Specifies notifications about mismatched Hello adjacencies that have been rejected.

skip-sequence-number: Specifies notifications about skipping duplicate LSP sequence numbers.

topology-change: Specifies notifications about AVF state changes.

version-skew: Specifies notifications about mismatches in Hello packet protocol versions.

Usage guidelines

If no keyword is specified, this command and the **undo** form of this command enables and disables all SNMP notifications for TRILL, respectively.

To report critical TRILL events to an NMS, enable SNMP notifications for TRILL. For TRILL event notifications to be sent correctly, you must also configure SNMP on the device. For more information about SNMP configuration, see the network management and monitoring configuration guide for the device.

Examples

Disable all SNMP notifications for TRILL.

```
<Sysname> system-view
[Sysname] undo snmp-agent trap enable trill
```

system-id

Use **system-id** to configure a system ID for the RB.

Use **undo system-id** to restore the default.

Syntax

system-id *system-id*

undo system-id

Defaults

The RB automatically generates a system ID based on its MAC address.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

system-id: Specifies a system ID in the format of xxxx.xxxx.xxxx, where each x is a hexadecimal number.

Usage guidelines

The system resets the TRILL process when the RB's system ID changes.

Examples

Set the system ID to 1010.1020.1030 for the RB.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] system-id 1010.1020.1030
```

timer lsp-generation

Use **timer lsp-generation** to set the TRILL LSP generation timer parameters.

Use **undo timer lsp-generation** to restore the default.

Syntax

timer lsp-generation *maximum-interval* [*minimum-interval* [*incremental-interval*]]

undo timer lsp-generation

Default

The maximum interval is 2 seconds, the minimum interval is 10 milliseconds, and the incremental interval is 20 milliseconds.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

maximum-interval: Specifies the maximum LSP generation interval in the range of 1 to 120 seconds.

minimum-interval: Specifies the minimum LSP generation interval in the range of 10 to 60000 milliseconds. The value must be a multiple of 10 and smaller than the maximum LSP generation interval.

incremental-interval: Specifies the LSP generation incremental interval in the range of 10 to 60000 milliseconds. The value must be a multiple of 10 and smaller than the maximum LSP generation interval.

Usage guidelines

This command is available in Release 1138P01 and later versions.

By adjusting the TRILL LSP generation timer parameters, you can prevent frequent network changes from consuming excessive bandwidth and device resources.

When the network is stable, the LSP generation timer is set to the minimum interval for each LSP generation. When the network is unstable, the LSP generation timer is added by the incremental interval for each LSP generation until the maximum interval is reached.

Examples

Set the maximum LSP generation interval to 10 seconds, the minimum interval to 100 milliseconds, and the incremental interval to 200 milliseconds.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] timer lsp-generation 10 100 200
```

timer lsp-max-age

Use **timer lsp-max-age** to configure the maximum age of LSPs.

Use **undo timer lsp-max-age** to restore the default.

Syntax

timer lsp-max-age *time*

undo timer lsp-max-age

Default

The LSP maximum age is 1200 seconds.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

time: Specifies the LSP maximum age in the range of 3 to 65535 seconds.

Usage guidelines

The RB uses the configured LSP maximum age as the remaining lifetime of the LSPs that it originates. When the RB detects that the remaining lifetime of an LSP reaches 0 seconds in the LSDB, the RB performs the following tasks:

1. Removes the LSP's content.
2. Keeps the LSP's digest.

3. Sets the LSP's remaining lifetime to 0 and purges the LSP from the network by advertising the LSP to other RBs.

The actual refresh interval of an LSP is affected by both the minimum LSP interval and the maximum number of LSPs transmitted per interval. To prevent LSPs from being aged out accidentally, set the LSP maximum age and the LSP refresh interval appropriately.

Examples

Set the LSP maximum age to 1500 seconds.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] timer lsp-max-age 1500
```

Related commands

- **timer lsp-refresh**
- **trill timer lsp**

timer lsp-refresh

Use **timer lsp-refresh** to configure the LSP refresh interval.

Use **undo timer lsp-refresh** to restore the default.

Syntax

timer lsp-refresh *time*

undo timer lsp-refresh

Default

The LSP refresh interval is 900 seconds.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

time: Specifies the LSP refresh interval in the range of 1 to 65534 seconds.

Usage guidelines

A locally originated LSP is forcibly refreshed when its remaining life time is no greater than n: n = LSP maximum age – LSP refresh interval. This mechanism avoids frequent LSP aging and ensures network stability.

The actual refresh interval of an LSP is affected by both the minimum LSP interval and the maximum number of LSPs transmitted per interval. To prevent LSPs from being aged out accidentally, set the LSP maximum age and the LSP refresh interval appropriately.

Examples

Set the LSP refresh interval to 1000 seconds.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] timer lsp-refresh 1000
```

Related commands

- **timer lsp-max-age**
- **trill timer lsp**

timer spf

Use **timer spf** to set the SPF calculation timer parameters for TRILL.

Use **undo timer spf** to restore the default.

Syntax

timer spf *maximum-interval* [*minimum-interval* [*incremental-interval*]]

undo timer spf

Defaults

The maximum SPF calculation interval is 10 seconds. The minimum SPF calculation interval is 10 milliseconds. The SPF calculation incremental interval is 20 milliseconds.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

maximum-interval: Specifies the maximum SPF calculation interval in the range of 1 to 120 seconds.

minimum-interval: Specifies the minimum SPF calculation interval in the range of 10 to 60000 milliseconds. The value must be a multiple of 10 and smaller than the maximum SPF calculation interval.

incremental-interval: Specifies the SPF calculation incremental interval in the range of 10 to 60000 milliseconds. The value must be a multiple of 10 and smaller than the maximum SPF calculation interval.

Usage guidelines

The RB uses the SPF algorithm to calculate a shortest path tree with itself as the root based on the local LSDB. The RB determines the next hop according to the shortest path tree.

By adjusting the SPF calculation timer parameters, you can prevent frequent network changes from consuming excessive bandwidth and device resources.

When the network is stable, the SPF calculation interval for continuous calculations is reduced to the minimum interval. When the network is unstable, the SPF calculation interval is added by *incremental-interval* × 2^{n-2} (*n* is the number of continuous SPF calculation times) for each SPF calculation until the maximum interval is reached.

Examples

Set the maximum SPF calculation interval to 15 seconds, the minimum interval to 100 milliseconds, and the incremental interval to 200 milliseconds.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] timer spf 15 100 200
```

tracert trill

Use **tracert trill** to trace the path the TRILL OAM packets traverse from the RB to a destination RB.

Syntax

tracert trill [**-f** *first-ttl* | **-i** *interface-type interface-number* | **-m** *max-ttl* | **-priority** *priority* | **-q** *packet-number* | **-t** *timeout* | **-v** [**-name**]] * *nickname*

Views

Any view

Predefined user roles

network-admin

mdc-admin

Parameters

-f *first-ttl*: Specifies the TTL value of the first packet sent to the destination. The value range is 0 to 63, and the default value is 0. This TTL cannot be greater than the value of the *max-ttl* argument.

-i *interface-type interface-number*: Specifies the source interface for OAM echo requests. If you do not specify this option when multiple equal-cost routes to the destination exist, the system uses the first egress interface as the source interface.

-m *max-ttl*: Specifies the maximum TTL allowed for an echo request. The value range is 0 to 63, and the default value is 63. This TTL cannot be smaller than the value of the *first-ttl* argument.

-priority *priority*: Specifies the 802.1p priority in the inner Ethernet header of the OAM echo request. The value range is 0 to 7, and the default value is 0. A higher value indicates a higher priority.

-q *packet-number*: Specifies the number of requests to send per hop. The value range is 1 to 10, and the default value is 3.

-t *timeout*: Specifies the timeout time of an OAM echo reply. The value range is 0 to 65535 milliseconds, and the default value is 2000 milliseconds. If the source does not receive an OAM echo reply within the timeout, it considers the OAM echo reply times out.

-v: Displays detailed information about the path that the TRILL packets traverse from the source RB to the destination RB. If you do not specify this keyword, the command displays brief information about the path.

-name: Displays the physical port name in the **ReceivingPort** and **OutputPort** fields when you display detailed information about the path that the TRILL OAM packets traverse from the RB to a destination RB. If you do not specify this keyword, both the **ReceivingPort** and **OutputPort** fields display only the circuit ID of a physical port.

nickname: Specifies a destination RB by its nickname for Layer 2 forwarding, in the range of 0x1 to 0xFFBF in hexadecimal format. To view the Layer 2 forwarding nickname of an RB, use the **display trill brief** command.

Usage guidelines

This command is available in Release 1138P01 and later versions.

After identifying network failure by using the **ping trill** command, use the **tracert trill** command to locate failed nodes.

The output from the **tracert trill** command includes the nicknames of all RBs that the packets traverse from source to destination. Asterisks (* * *) are displayed if no reply is received within the timeout period or a TRILL-enabled RB does not support the **tracert trill** command. The RB that does not support the **tracert trill** command cannot reply with a hop count error notification but can forward packets for tracert TRILL operation.

To abort the tracert TRILL operation during the execution of the command, press **Ctrl+C**.

Examples

Display brief information about the path that the TRILL OAM packets traverse from the local RB 0xa456 to RB 0x2222.

```
<Sysname> tracert trill 2222
TRILL traceroute to 0x2222, 63 hops at most, press CTRL_C to break
TTL RBridge Time
-----------------------------------------------------------------
    0xa456
 0  0xb123  4.969 ms 4.651 ms 5.245 ms
 1  0x2222  4.067 ms 3.725 ms 3.708 ms
```

Display detailed information about the path that the TRILL OAM packets traverse from the local RB 0xa456 to RB 0x2222.

```
<Sysname> tracert trill -v 2222
TRILL traceroute to 0x2222, 63 hops at most, press CTRL_C to break
TTL  RBridge  ReceivingPort   OutputPort   NextHop  Time
-----------------------------------------------------------------
     0xa456   Ingress         0x0001       0xb123
 0   0xb123   0x0001          0x0002       0x2222   4.093 ms 3.603 ms 3.657 ms
 1   0x2222   0x0001          Egress       0x0000   3.558 ms 3.277 ms 3.115 ms
```

Display detailed information about the path that the TRILL OAM packets traverse from the local RB 0xa456 to RB 0x2222.

```
<Sysname> tracert trill -v –name 2222
TRILL traceroute to 0x2222, 63 hops at most, press CTRL_C to break
  RBridge: 0xa456
  ReceivingPort: Ingress
  OutputPort: 0x0001(XGE1/0/1)
  NextHop: 0xb123

TTL 0
  RBridge: 0xb123
  ReceivingPort: 0x0001(XGE1/0/1)
  OutputPort: 0x0002(XGE1/0/2)
  NextHop: 0x2222
  Time: 4.093 ms 3.603 ms 3.657 ms

TTL 1
  RBridge: 0x2222
  ReceivingPort: 0x0001(XGE1/0/1)
  OutputPort: Egress
  NextHop: 0x0000
  Time: 3.558 ms 3.277 ms 3.115 ms
```

Display brief information about the path that the TRILL OAM packets traverse from the local RB 0xa456 to itself.

```
<Sysname> tracert trill a456
TRILL traceroute to 0xa456, 63 hops at most, press CTRL_C to break
TTL RBridge Time
-----------------------------------------------------------------
    0xa456
```

```
 0  0xa456  0.903 ms 0.857 ms 0.803 ms
```

Display detailed information about the path that the TRILL OAM packets traverse from the local RB 0xa456 to itself.

```
<Sysname> tracert trill -v a456
TRILL traceroute to 0xa456, 63 hops at most, press CTRL_C to break
TTL  RBridge  ReceivingPort  OutputPort  NextHop  Time
-----------------------------------------------------------------
     0xa456   Ingress        InLoop      0x0000
 0   0xa456   InLoop         Egress      0x0000   0.953 ms 0.832 ms 0.857 ms
```

Table 22 Command output

Field	Description
TRILL traceroute to 0x2222	Display the path that the TRILL OAM packets traverse from the local RB to the egress RB 0x2222.
63 hops at most	Maximum number of hops allowed for an echo request, which can be set by using the **-m** *max-ttl* option.
press CTRL_C to break	During the execution of the command, press **Ctrl+C** to abort the tracert TRILL operation.
TTL	Number of hops.
RBridge	Nickname of the RB that sends the reply. If no reply is received within the timeout period, this field displays the asterisks (* * *).
ReceivingPort	Circuit ID of the receiving port for TRILL OAM packets. The port name is also displayed if you specify the **-name** keyword. • If the RB sends a TRILL OAM echo request, this field displays **Ingress**. • If the RB traces the packets destined for itself, the RB receives packets from the loopback interface and this field displays **InLoop**. • If the RB does not support displaying physical port names, the physical port name is displayed as **N/A**. To view the physical port for the displayed circuit ID when you do not specify the **-name** keyword, use the **display trill interface verbose** command on the device.
OutputPort	Circuit ID of the sending port of TRILL OAM packets. The port name is also displayed if you specify the **-name** keyword. • If the RB traces the packets destined for itself, the RB sends packets from the loopback interface and this field displays **InLoop**. • If the RB sends an echo reply, this field displays **Egress**. • If multiple equal-cost routes destined for the next hop exist, this field displays **ECMP**. • If the RB does not support displaying physical port names, the physical port name is displayed as **N/A**. To view the physical port for the displayed circuit ID when you do not specify the **-name** keyword, use the **display trill interface verbose** command on the device.
NextHop	Nickname of the next hop RB. • If the RB is the destination, this field displays **0x0000**. • If multiple equal-cost routes destined for the next hop exist, this field displays **ECMP**.

Field	Description
Time	The round-trip time of each echo request, in milliseconds. The number of packets that can be sent per hop is set by using the **-q** *packet-number* option. The default value is 3.

tree-root priority

Use **tree-root priority** to set the priority for the RB to be a TRILL distribution tree root.

Use **undo tree-root priority** to restore the default.

Syntax

tree-root priority *priority*

undo tree-root priority

Default

The priority for the RB to be a TRILL distribution tree root is 32768.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

priority: Specifies a priority value in the range of 1 to 65535. A higher priority value indicates a higher priority.

Examples

Set the priority to 65535 for the RB to be a TRILL distribution tree root.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] tree-root priority 65535
```

trees calculate

Use **trees calculate** to set the number of TRILL distribution trees that an RB wants all RBs to compute.

Use **undo trees calculate** to restore the default.

Syntax

trees calculate *count*

undo trees calculate

Default

An RB wants all RBs to compute one TRILL distribution tree.

Views

TRILL view

Predefined user roles

network-admin

mdc-admin

Parameters

count: Specifies the number of TRILL distribution trees that the RB wants all RBs to compute. The value range for this argument is 1 to 15.

Examples

Set the number to 2 for TRILL distribution trees that the RB wants all RBs to compute.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill] trees calculate 2
```

trill

Use **trill** to enable TRILL globally and enter TRILL view.

Use **undo trill** to disable TRILL globally.

Syntax

trill

undo trill

Default

TRILL is disabled globally.

Views

System view

Predefined user roles

network-admin

mdc-admin

Examples

Enable TRILL globally and enter TRILL view.

```
<Sysname> system-view
[Sysname] trill
[Sysname-trill]
```

trill announcing-vlan

Use **trill announcing-vlan** to configure announcing VLANs.

Use **undo trill announcing-vlan** to remove the specified announcing VLANs.

Syntax

trill announcing-vlan { *vlan-list* | **null** }

undo trill announcing-vlan { *vlan-list* | **null** }

Defaults

No announcing VLANs are configured. Announcing VLANs are enabled VLANs.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

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

null: Configure the announcing VLAN list as empty.

Usage guidelines

RBs send Hello frames in a set of VLANs. The VLAN set is calculated as follows:

- **DRB**—Enabled VLANs ∩ (announcing VLANs ∪ designated VLAN).
- **Non-DRB**—Enabled VLANs ∩ (designated VLAN ∪ (announcing VLANs ∩ forwarding VLANs)).

To prevent Hello frames from consuming excessive CPU resources, reduce the number of announcing VLANs.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set VLANs 10 through 20 to announcing VLANs.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill announcing-vlan 10 to 20
```

Set the announcing VLAN list to empty.

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

Related commands

trill designated-vlan

trill bypass-pseudonode enable

Use **trill bypass-pseudonode enable** to enable the pseudonode bypass feature.

Use **undo trill bypass-pseudonode enable** to disable the pseudonode bypass feature.

Syntax

trill bypass-pseudonode enable

undo trill bypass-pseudonode enable

Default

The pseudonode bypass feature is disabled.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

This command is available in Release 1138P01 and later versions.

This command disables a DRB from generating LSPs for the pseudonode when the DRB has only one neighbor on a broadcast network. This reduces the number of LSPs in the network.

Examples

Enable the pseudonode bypass feature on Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet] trill bypass-pseudonode enable
```

trill cost

Use **trill cost** to set the link cost for a TRILL port.

Use **undo trill cost** to restore the default.

Syntax

trill cost *cost-value*

undo trill cost

Defaults

The link cost for a TRILL port is 2000.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

cost-value: Specifies a link cost in the range of 1 to 16777214.

Usage guidelines

The link cost for a TRILL port can be automatically calculated by the system or manually set.

- A manually set link cost takes precedence over a calculated link cost.
- If no link cost is set and automatic link cost calculation is enabled, the calculated link cost takes effect.
- If no link cost is set and automatic link cost calculation is disabled, the default link cost of 2000 is used.

If you manually set the link cost for a TRILL port, make sure its peer TRILL port uses the same link cost.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the link cost to 20000 for TRILL port Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill cost 20000
```

Related commands

auto-cost enable

trill designated-vlan

Use **trill designated-vlan** to configure a designated VLAN.

Use **undo trill designated-vlan** to restore the default.

Syntax

trill designated-vlan *vlan-id*

undo trill designated-vlan

Defaults

No designated VLAN is configured. The system automatically selects an enabled VLAN as the designated VLAN.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

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

Usage guidelines

RBs send Hello frames in a set of VLANs. The VLAN set is calculated as follows:

- **DRB**—Enabled VLANs ∩ (announcing VLANs ∪ designated VLAN).
- **Non-DRB**—Enabled VLANs ∩ (designated VLAN ∪ (announcing VLANs ∩ forwarding VLANs)).

RBs use the designated VLAN to forward TRILL protocol frames (except Hello frames) and local data frames. For RBs to establish adjacencies and forward TRILL data frames, make sure the designated VLAN is an enabled VLAN.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set VLAN 2 to the designated VLAN.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill designated-vlan 2
```

Related commands

trill announcing-vlan

trill drb-priority

Use **trill drb-priority** to set the DRB priority of a TRILL port.

Use **undo trill drb-priority** to restore the default.

Syntax

trill drb-priority *priority*

undo trill drb-priority

Default

The DRB priority of a TRILL port is 64.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

priority: Specifies a priority value in the range of 0 to 127. A higher priority value indicates a higher priority.

Usage guidelines

On a broadcast network, TRILL must elect a DRB. An RB with a higher DRB priority is preferred in DRB election. When two RBs have the same DRB priority, the RB with a higher MAC address takes precedence.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the DRB priority to 2 for TRILL port Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill drb-priority 2
```

trill enable

Use **trill enable** to enable TRILL on a port.

Use **undo trill enable** to disable TRILL on a port.

Syntax

trill enable

undo trill enable

Default

TRILL is disabled on a port.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Usage guidelines

Before you enable TRILL on a port, first enable TRILL globally.

Enable or disable TRILL on all ports in a VLAN, so that the ports in a VLAN have the same TRILL status (enabled or disabled).

To avoid loops, use the following procedure to enable TRILL on a port:

1. Shut down the port by using the **shutdown** command.
2. Enable TRILL and assign the port to VLANs.
3. Bring up the port by using the **undo shutdown** command.

Do not enable the spanning tree protocol on a TRILL port. Because the spanning tree protocol is enabled by default on all ports, the spanning tree feature takes effect on all ports when you enable the spanning tree feature globally. After the spanning tree protocol is enabled globally, you must disable the spanning tree feature on TRILL ports. For more information about the spanning tree feature, see *Layer 2—LAN Switching Configuration Guide*.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Enable TRILL globally, and enable TRILL on port Ten-GigabitEthernet 1/0/1.

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

Related commands

trill

trill link-type

Use **trill link-type** to configure the link type of a TRILL port.

Use **undo trill link-type** to restore the default.

Syntax

trill link-type { **access** [**alone**] **| hybrid | trunk** }

undo trill link-type

Default

The link type of a TRILL port is access without the alone attribute.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

access [**alone**] : Configures the link type as access. When the **alone** keyword is not specified, the port is configured as an access port without the alone attribute. The port can process only local data frames and Hello frames. When the **alone** keyword is specified, the port is configured as an access port with the alone attribute. The port does not send or receive Hello frames and does not participate in DRB election or AVF negotiation.

hybrid: Configures the link type as hybrid. A hybrid port combines the attributes of an access port and a trunk port. It can process local data frames and passing data frames.

trunk: Configures the link type as trunk. A trunk port can process passing data frames and some Layer 2 protocol packets (for example, LLDP packets). It cannot process local data frames.

Usage guidelines

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the link type to **trunk** for TRILL port Ten-GigabitEthernet 1/0/1.

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

trill timer avf-inhibited

Use **trill timer avf-inhibited** to configure the AVF inhibition time.

Use **undo trill timer avf-inhibited** to restore the default.

Syntax

trill timer avf-inhibited *time*

undo trill timer avf-inhibited

Default

The AVF inhibition time is 30 seconds.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

time: Specifies the AVF inhibition time in the range of 0 to 30 seconds.

Usage guidelines

The AVF of a VLAN guarantees that frames of the VLAN enter and leave a broadcast network through the same port. Other RBs on the broadcast network do not process frames from the VLAN.

To avoid loops, the RB that acts as the AVF suppresses its AVF role during the inhibition time when one of the following conditions exists:

- The RB detects a root bridge change on the broadcast network.
- Other RBs advertise a different AVF for the VLAN.

When the inhibition time expires, the RB restores its AVF role if it is still the AVF of the VLAN. Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the AVF inhibition time to 20 seconds on port Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill timer avf-inhibited 20
```

trill timer csnp

Use **trill timer csnp** to configure the CSNP interval.

Use **undo trill timer csnp** to restore the default.

Syntax

trill timer csnp *interval*

undo trill timer csnp

Default

The CSNP interval is 10 seconds.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

interval: Specifies an interval in the range of 1 to 600 seconds.

Usage guidelines

On a broadcast network, the RB advertises CSNPs at the CSNP interval to perform network-wide LSDB synchronization if it is elected as the DRB. A CSNP records all LSP digests of the RB's local

LSDB. A remote RB compares a received CSNP against its local LSDB to examine whether some LSPs age out or are missing. If the CSNP has an LSP digest that the local LSDB does not have, the remote RB sends a PSNP packet to request the LSP information.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the CSNP interval to 15 seconds on Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill timer csnp 15
```

trill timer hello

Use **trill timer hello** to configure the Hello interval.

Use **undo trill timer hello** to restore the default.

Syntax

trill timer hello *interval*

undo trill timer hello

Default

The Hello interval is 10 seconds.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

interval: Specifies the Hello interval. The value range is 3 to 255 seconds in Release 1135. The value range is 1 to 255 seconds in Release 1138P01 and later versions.

Usage guidelines

The RB advertises Hello frames at the Hello interval to maintain a TRILL adjacency. The shorter the Hello interval, the faster the network convergence. However, a shorter Hello interval consumes more system resources.

This command sets the Hello interval for an RB. The Hello interval of a DRB is 1/3 of the Hello interval of an RB. This allows for DRB failures to be quickly detected.

The adjacency holding time is obtained by multiplying the Hello interval by the Hello multiplier. The RB advertises the adjacency holding time to neighbors through Hello frames. If a neighbor does not receive any Hello frames from the RB within the adjacency holding time, it removes the TRILL adjacency with the RB.

The adjacency holding time cannot exceed 65535 seconds.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports.

Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the Hello interval to 20 seconds on Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill timer hello 20
```

Related commands

trill timer holding-multiplier

trill timer holding-multiplier

Use **trill timer holding-multiplier** to configure the Hello multiplier.

Use **undo trill timer holding-multiplier** to restore the default.

Syntax

trill timer holding-multiplier *count*

undo trill holding-multiplier

Default

The Hello multiplier is 3.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

count: Specifies a multiplier. The value range is 3 to 1000 in Release 1135. The value range is 2 to 1000 in Release 1138P01 and later versions.

Usage guidelines

The adjacency holding time is obtained by multiplying the Hello interval by the Hello multiplier. The RB advertises the adjacency holding time to neighbors through Hello frames. If a neighbor does not receive any Hello frames from the RB within the adjacency holding time, it removes the TRILL adjacency with the RB.

The adjacency holding time cannot exceed 65535 seconds.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the Hello multiplier to 6 on Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill timer holding-multiplier 6
```

Related commands

trill timer hello

trill timer lsp

Use **trill timer lsp** to configure the minimum LSP interval and the maximum number of LSPs transmitted per interval.

Use **undo trill timer lsp** to restore the default.

Syntax

trill timer lsp *interval* [**count** *count*]

undo trill timer lsp

Default

The minimum LSP interval is 10 milliseconds, and the maximum number of LSPs transmitted per interval is 5.

Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

Predefined user roles

network-admin

mdc-admin

Parameters

interval: Specifies the minimum LSP interval in the range of 10 to 1000 milliseconds. The *interval* argument is in increments of 10 milliseconds.

count: Specifies the maximum number of LSPs transmitted per interval, in the range of 1 to 1000.

Usage guidelines

To avoid frequent LSP aging in the network, RBs periodically advertise LSPs. The actual refresh interval of an LSP is affected by both the minimum LSP interval and the maximum number of LSPs transmitted per interval. To prevent LSPs from being aged out accidentally, set the LSP maximum age and the LSP refresh interval appropriately.

Configuration in Layer 2 Ethernet interface view takes effect only on the current port. Configuration in Layer 2 aggregate interface view takes effect on the current interface and its member ports. Configuration on the member port of an aggregate interface takes effect after the member port leaves the aggregation group.

Examples

Set the minimum LSP interval to 500 milliseconds and the maximum number of LSPs transmitted per interval to 10 on Ten-GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] trill timer lsp 500 count 10
```

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