DES-7200

Ethernet Command Reference Guide

Version 10.4(3)

D-Link®

DES-7200 CLI Reference Guide

Revision No.: Version 10.4(3)

Date:

Copyright Statement

Preface

Version Description

This manual matches the firmware version 10.4(3).

Target Readers

This manual is intended for the following readers:

📖 Network engineers

📖 Technical salespersons

📖 Network administrators

Conventions in this Document

1. Universal Format Convention

Arial: Arial with the point size 10 is used for the body.

Note: A line is added respectively above and below the prompts such as caution and note to separate them from the body.

Format of information displayed on the terminal: Courier New, point size 8, indicating the screen output. User's entries among the information shall be indicated with bolded characters.

2. Command Line Format Convention

Arial is used as the font for the command line. The meanings of specific formats are described below:

Bold: Key words in the command line, which shall be entered exactly as they are displayed, shall be indicated with bolded characters.

Italic: Parameters in the command line, which must be replaced with actual values, shall be indicated with italic characters.

[ ]: The part enclosed with [ ] means optional in the command.

{ x | y | ... }: It means one shall be selected among two or more options.

[x | y | ...]: It means one or none shall be selected among two or more options.

//:Lines starting with an exclamation mark "//" are annotated.

3. Signs

Various striking identifiers are adopted in this manual to indicate the matters that special attention should be paid in the operation, as detailed below:

 **Caution**	Warning, danger or alert in the operation.

 **Note**	Descript, prompt, tip or any other necessary supplement or explanation for the operation.

 **Note**	The port types mentioned in the examples of this manual may not be consistent with the actual ones. In real network environments, you need configure port types according to the support on various products. The display information of some examples in this manual may include the information on other series products, like model and description. The details are subject to the used equipments.

1 Interface Configuration Commands

1.1 Configuration Related Commands

1.1.1 carrier-delay

In the interface configuration mode, execute the **carrier-delay** command to set the carrier delay on the interface, and the **no carrier-delay** command to restore it to the default value.

carrier-delay [*seconds*]

no carrier-delay

Parameter description

Parameter	Description
seconds	Optional parameter in the range of 1 to 60 seconds

Default configuration The default carrier delay is 2 seconds.

Command mode Interface configuration mode

Usage guidelines	This parameter refers to the delay after which the carrier detection signal DCD of the interface link changes from the Down status to the Up status. If the DCD changes within the delay, the system will ignore such changes without disconnecting the upper data link layer for renegotiation. If the DCD carrier is disconnected for a long time, the parameter should be set longer to accelerate route aggregation so that the routing table can be converged more quickly. On the contrary, if the DCD carrier interruption period is shorter than the time used for route aggregation, you should set the parameter to a higher value to avoid unnecessary route vibration.

Examples	The following example shows how to configure the carrier delay of serial interface to 5 seconds:
	`DES-7200(config)# interface gigabitethernet 1/1`
	`DES-7200(config)# carrier-delay 5`

1.1.2 clear counters

Use this command to clear the counters on the specified interface.

clear counters [*interface-id*]

Parameter description

Parameter	Description
interface-id	Interface type and interface ID

Command mode

Privileged mode.

Usage guidelines

In the privileged EXEC mode, use the **show interfaces** command to display the counters or the **clear counters** command to clear the counters. If the interface is not specified, the counters on all interfaces will be cleared.

Examples

```
DES-7200# clear counters gigabitethernet 1/1
```

Related commands

Command	Description
show interfaces	Show the interface information.

1.1.3 clear interface

Reset the interface hardware.

clear interface *interface-id*

Parameter description

Parameter	Description
interface-id	Interface type and interface ID

Command mode

Privileged mode.

Usage guidelines

This command is only used on the switch port, member port of the L2 Aggregate port, routing port, and member port of the L3 aggregate port. This command is equal to the **shutdown** and **no shutdown** commands.

Examples

```
DES-7200# clear interface gigabitethernet 1/1
```

Related commands

Command	Description
shutdown	Shutdown the interface.

1.1.4 description

Use this command to set the alias of interface.. Use the **no** form of the command to restore the default setting.

description *string*

no description

Parameter description

Parameter	Description
string	Interface alias

Default configuration

By default, there is no alias.

Command mode

Interface configuration mode.

Usage guidelines	Use **show interfaces** to display the interface information, including the alias.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# description GBIC-1
```

Related commands

Command	Description
show interfaces	Show the interface information.

1.1.5 duplex

Use the **duplex** command in the interface configuration mode to specify the duplex mode for the interface. Use the **no** form of the command to restore it to the default setting.

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

no duplex

Parameter description

Parameter	Description
auto	Self-adaptive full duplex and half duplex
full	Full duplex
half	Half duplex

Default configuration	Auto.
Command mode	Interface configuration mode.
Usage guidelines	The duplex mode is associated with the interface type. Use **show interfaces** to display the duplex mode of the interface

Examples

```
DES-7200(config-if)# duplex full
```

Related commands

Command	Description
show interfaces	Show the interface information.

1.1.6 flowcontrol

Use this command to enable or disable the flow control. Use the **no** form of the command to restore it to the default setting.

flowcontrol {**auto | off | on | receive {auto | off | on } | send {auto | off | on}**}

no flowcontrol

Parameter description

Parameter	Description
auto	Self-negotiate the flow control.
off	Disable the flow control.
on	Enable the flow control.
receive	Receiving direction of the non-symmetric flow control.
send	Sending direction of the non-symmetric flow control.

Default configuration

By default, flow control is disabled.

Command mode

Interface configuration mode.

Usage guidelines

Use **show interfaces** to display the flow control configurations.

Examples

This example shows how to enable flow control on fastEthernet port 1/1:

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# flowcontrol on
```

Related commands

Command	Description
show interfaces	Show the interface information.

1.1.7 interface aggregateport

Use this command to access or create an aggregate port and enter interface configuration mode. Use the **no** form of the command to remove this port.

interface aggregateport *port-number*

Parameter description

Parameter	Description
port-number	Aggregate port number. Its range depends on the equipment and extended modules.

Command mode

Global configuration mode.

Usage guidelines

According to some rules, you can add other ports to an aggregate port. All the port members of an aggregate port are considered in a whole, and their attributes depend on the ones of the aggregate port. You can use **show interfaces** or **show interfaces aggregateport** commands to display the interface configuration.

Examples

```
DES-7200(config)#interface aggregateport 3
DES-7200(config-if)#
```

Related commands

Command	Description
show interfaces	Show the interface information.

Platform description

DES-7200 series support up to 8 port members and create up to 128 AP globally.

1.1.8 interface fastEthernet

Use this command to select a Ethernet interface, and enter the interface configuration mode.

interface fastEthernet *mod-num/port-num*

Parameter description

Parameter	Description
mod-num/port-num	The range depends on the device and the extended module.

Command mode

Global configuration mode.

Usage guidelines	The **no** form of the command is not available, and this interface type cannot be deleted. Use **show interfaces** or **show interfaces fastEthernet** to display the interface configurations.

Examples

```
DES-7200(config)# interface fastEthernet 1/2
DES-7200(config-if)#
```

Related commands

Command	Description
show interfaces	Show the interface information.

Platform Description	N/A

1.1.9 interface giagbitEthernet

Use this command to select a Gigabit Ethernet interface, and enter the interface configuration mode.

interface gigabitEthernet *mod-num/port-num*

Parameter description

Parameter	Description
mod-num/port-num	The range depends on the device and the extended module.

Command mode	Global configuration mode.
Usage guidelines	The **no** form of the command is not available, and this interface type cannot be deleted. Use **show interfaces** or **show interfaces gigabitEthernet** to display the interface configurations.

Examples

```
DES-7200(config)# interface gigabitEthernet 1/2
DES-7200(config-if)#
```

Related commands

Command	Description
show interfaces	Show the interface information.

1.1.10 interface tenGiagbitEthernet

Use this command to select a 10G Ethernet interface, and enter the interface configuration mode.

interface tenGigabitEthernet *mod-num/port-num*

Parameter description

Parameter	Description
mod-num/port-num	The range depends on the device and the extended module.

Command mode

Global configuration mode.

Usage guidelines

The **no** form of the command is not available, and this interface type cannot be deleted. Use **show interfaces** or **show interfaces tenGigabitEthernet** to display the interface configurations.

Examples

```
DES-7200(config)# interface tenGigabitEthernet 1/2
DES-7200(config-if)#
```

Related commands

Command	Description
show interfaces	Show the interface information.

Platform Description

No product supports this command till now.

1.1.11 interface vlan

Use the **interface vlan** command in the global configuration mode to access or create the SVI (Switch Virtual Interface). Use the **no** form of the command to remove the SVI.

interface vlan *vlan-id*

no interface vlan *vlan-id*

Parameter description

Parameter	Description
vlan-id	VLAN ID. Its range depends by products.

Command mode	Global configuration mode.
Usage guidelines	Use **show interfaces** or **show interfaces vlan** to display the interface configurations.
Examples	`DES-7200(config)# interface vlan 2` `DES-7200(config-if)#`

Related commands

Command	Description
show interfaces	Show the interface information.

Platform Description	DES-7200 series devices support up to 2K SVI ports and 2K IP addresses.

1.1.12 line-detect

Use this command to detect the cable connection status.

line-detect

Command mode	Interface configuration mode.
Usage guidelines	This command is used to detect the line status and locate the problem in case of a line failure, for example, the line is torn down.

Examples

```
DES-7200(config)#interface gigabitEthernet 0/1
DES-7200(config-if-GigabitEthernet 0/1)#line-detect

Interface : GigabitEthernet 0/1
start cable-diagnoses,please wait...
cable-daignoses end!this is result:
4 pairs
pair state     length(meters)
---- ---------- --------------
A    Ok        1
pair state     length(meters)
---- ---------- --------------
```

```
B    Ok        2
pair state     length(meters)
---- ---------- --------------
C    Short     1
pair state     length(meters)
---- ---------- --------------
D    Short     1
```

Field	Description
pairs	Number of line pairs included. For example, the twisted pair includes four pairs of lines.
state	Status of the current line pair: OK, Short or Open. In general, the 100M twisted pairs A and B are OK, C and D are Short. The 1000M twisted pairs A, B, C and D are all OK.
length	Length of the line in meter. Only the length of the line pair whose status is OK takes effect. Since the length is calculated based on the transmission time of signal, there may have a certain difference. The length of the line pair whose status is Short or Open is the length from the port to the faulty point.

1.1.13 medium-type

Use this command to select the medium type for an interface. Use the **no** form of the command to restore it to the default setting.

medium-type { **auto-select [prefer [fiber | copper]] | fiber | copper** }

no medium-type

Parameter description

Parameter	Description
fiber	Optical interface.
prefer[fiber| copper]	The preferred medium type for the interface is selected.
auto-select	Auto-select the medium type for the interface.
copper	Copper interface.

Default configuration	Copper interface.
Command mode	Interface configuration (physical interface, except for AP and SVI)
Usage guidelines	If a port can be selected as an optical port or electrical port, you can only select one of them. Once the media type is selected, the attributes of the port, for example, status, duplex, flow control, and rate, all mean those of the currently selected media type. After the port type is changed, the attributes of the new port type take the default values, which can be modified as needed.
Examples	`DES-7200(config)# interface gigabitethernet 1/1` `DES-7200(config-if)# medium-type copeer`

Related commands

Command	Description
show interfaces	Show the interface information.

Platform description	The 12 SFP interfaces of the 24SFP/12GT line cards and 1210/100/1000M BASE-T interfaces allow for dynamic switching. The combo interface is not supported to automatically determine whether the current port is the SFP interface or the 10/100/1000M BASE-T interface.

1.1.14 mtu

Use this command to set the MTU supported on the interface.

mtu *num*

Parameter description

Parameter	Description
num	64 to 9216 (or 65536, which varies by products)

Default configuration	By default, the num is 1500.

Command mode	Interface configuration mode.
Usage guidelines	Set the maximum transmission unit (MTU) supported on the interface. DES-7200 series now supports the setting on physical interfaces.
Examples	`DES-7200(config)# interface gigabitethernet 1/1` `DES-7200(config-if)# mtu 9216`

Related commands

Command	Description
show interfaces	Show the interface information.

1.1.15 shutdown

Use the **shutdown** command in the interface configuration mode to disable an interface. Use the **no** form of the command to enable a disabled port.

shutdown

no shutdown

Command mode	Interface configuration mode
Usage guidelines	Use this command to stop the forwarding on the interface (Gigabit Ethernet interface, Aggregate port or SVI). You can enable the port with the **no shutdown** command. If you shut down the interface, the configuration of the interface exists, but does not take effect. You can view the interface status by using the **show interfaces** command.

Examples	Shut down Ap 1**:**
	`DES-7200(config)# interface aggregateport 1`
	`DES-7200(config-if)# shutdown`
	Enable Ap 1**:**
	`DES-7200(config)# interface aggregateport 1`
	`DES-7200(config-if)# no shutdown`

Related commands

Command	Description
clear interface	Reset the hardware.

show interfaces	Show the interface information.

Note

If you use the script to run **no shutdown** frequently and rapidly, the system may prompt the interface status reversal.

1.1.16 snmp trap link-status

You can set whether to send LinkTrap on a port. If the function is enabled, the SNMP will send the LinkTrap when the link status of the port changes. The **no** form of this command prevents the SNMP from sending the LinkTrap.

snmp trap link-status

no snmp trap link-status

Default configuration	This function is enabled. If the link status of the port changes, the SNMP sends the LinkTrap.
Command mode	Interface configuration mode.
Usage guidelines	For an interface (for instance, Ethernet interface, AP interface, and SVI interface), this command sets whether to send LinkTrap on the interface. If the function is enabled, the SNMP sends the LinkTrap when the link status of the interface changes.

Examples	Do not send LinkTrap on the interface:
	`DES-7200(config)# interface gigabitEthernet 1/1`
	`DES-7200(config-if)# no snmp trap link-status`
	Following configuration shows how to configure the interface to forwarding Link trap:
	`DES-7200(config)# interface gigabitEthernet 1/1`
	`DES-7200(config-if)# snmp trap link-status`

Related commands

Command	Function
DES-7200(config-if)# **snmp trap link-status**	Enable sending LinkTrap on the interface.

	DES-7200(config-if)# **no snmp trap link-status**	Disable sending LinkTrap on the interface.

1.1.17 speed

Use this command to configure the speed on the port. Use the **no** form of the command to restore it to the default setting.

Parameter description

Parameter	Description
10	Means that the transmission rate of the interface is 10Mbps.
100	Means that the transmission rate of the interface is 100Mbps.
1000	Means that the transmission rate of the interface is 1000Mbps.
10G	Means that the transmission rate of the interface is 10Gbps.
auto	Self-adaptive

Default configuration

Auto.

Command mode

Interface configuration mode.

Usage guidelines

If an interface is the member of an aggregate port, the rate of the interface depends on the rate of the aggregate port. You can set the rate of the interface, but it does not take effect until the interface exits the aggregate port. Use **show interfaces** to display configuration. The rate varies by interface types. For example, you cannot set the rate of a SFP interface to 10M or 100M.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# speed 100
```

Related commands

Command	Description
show interfaces	Show the interface information.

1.1.18 switchport

In the interface configuration mode, you can use **switchport** without any parameter to configure an interface as Layer 2 mode. Use the **no switchport** command without any parameter to configure it as Layer 3 interface.

switchport

no switchport

Default	All the interfaces are in Layer 2 mode by default.
Command mode	Interface configuration mode.
Usage guidelines	This command is valid only for physical interfaces. The **switchport** command is used to disable the interface and re-enable it. In this status, the device will send the information to indicate the connect status. If the interface is changed to Layer 3 mode from Layer 2, all the attributes in Layer 2 mode will be cleared.
Examples	`DES-7200(config-if)# switchport`

Related commands

Command	Description
show interfaces	Show the interface information.

Platform description	DES-7200 series support the creation of L3 aggregate ports, up to 128 L3 Aps globally. Up to 2000 IP addresses are supported.

1.1.19 switchport access

Use this command to configure an interface as a statics access port and add it to a VLAN. Use the **no** form of the command to assign the port to the default VLAN.

switchport access vlan *vlan-id*

no switchport access vlan

Parameter description

Parameter	Description
vlan-id	The VLAN ID at which the port to be

		added.

Default configuration	By default, the switch port is an access port and the VLAN is VLAN 1.
Command mode	Interface configuration mode.
Usage guidelines	Enter one VLAN ID. The system will create a new one and add the interface to the VLAN if you enter a new VLAN ID. If the VLAN ID already exists, the command adds the interface to the VLAN. If the port is a trunk port, the operation does not take effect.
Examples	`DES-7200(config)# interface gigabitethernet 1/1` `DES-7200(config-if)# switchport access vlan 2`

Related commands

Command	Description
switchport mode	Specify the interface as Layer 2 mode(switch port mode).
switchport trunk	Use this command to specify a native VLAN and the allowed-VLAN list for the trunkport.

1.1.20 switchport mode

Use this command to specify a L2 interface (switch port) mode. You can specify this interface to be an access port or a trunk port or an 802.1Q tunnel. Use the **no** form of the command to restore it to the default setting.

switchport mode {**access | trunk**}

no switchport mode

Parameter description

Parameter	Description
access	Configure the switch port as an access port.
trunk	Configure the switch port as a trunk port.

Default	The default mode of switch port is access port.

configuration	
Command mode	Interface configuration mode.
Usage guidelines	If a switch port mode is access port, it can be the member port of only one VLAN. Use **switchport access vlan** to specify the member of the VLAN. A trunk port can be the member port of various VLANs defined by the allowed-VLAN list. The allowed VLAN list of the interface determines the VLANs to which the interface may belong. The trunk port is the member of all the VLANs in the allowed VLAN list. Use **switchport trunk** to define the allowed-VLANs list.
Examples	`DES-7200(config-if)# switchport mode trunk`

Related commands

Command	Description
switchport access	Use this command to configure an interface as a statics access port and assign it to a VLAN.
switchport trunk	Use this command to specify a native VLAN and the allowed-VLAN list for the trunk port.

1.1.21 switchport trunk

Use this command to specify a native VLAN and the allowed-VLAN list for the trunk port. Use the **no** form of the command to restore it to the default setting.

switchport trunk {**allowed vlan** {**all |** [**add | remove | except**] *vlan-list* }**| native vlan** *vlan-id*}

no switchport trunk {**allowed vlan | native vlan**}

Parameter description

Parameter	Description
allowed vlan *vlan-list*	Configure the list of VLANs allowed on the trunk port. *vlan-list* can be a VLAN or a range of VLANs starting with the smaller VLAN ID and ending with the larger VLAN ID and being separated by hyphen, for example, 10 to 20. The segments can be separated with a comma (,), for example, 1 to 10, 20 to 25, 30, 33. all means that the allowed VLAN list contains all the supported VLANs; add means to add the specified VLAN list to the allowed VLAN list; remove means to remove the specified VLAN list from the allowed VLAN list; except means to add all the VLANs other than those in the specified VLAN list to the allowed VLAN list;
native vlan *vlan-id*	Specify the native VLAN.

Default configuration

The allowed VLAN list is all, the Native VLAN is VLAN1.

Command mode

Interface configuration mode.

Usage guidelines

Native VLAN:

A trunk port belongs to one native VLAN. A native VLAN means that the untagged packets received/sent on the trunk port belong to the VLAN. Obviously, the default VLAN ID of the interface (that is, the PVID in the IEEE 802.1Q) is the VLAN ID of the native VLAN. In addition, when frames belonging to the native VLAN are sent over the trunk port, they are untagged.

Allowed-VLAN List:

By default, a trunk port sends traffic to and received traffic from all VLANs (ID 1 to 4094). However, you can prevent the traffic from passing over the trunk by configuring allowed VLAN lists on a trunk.

Use **show interfaces switchport** to display configuration.

Examples

The example below removes port 1/15 from VLAN 2:

```
DES-7200(config)# interface fastethernet 1/15
DES-7200(config-if)# switchport trunk allowed vlan remove 2
DES-7200(config-if)# end
DES-7200# show interfaces fastethernet1/15 switchport
Switchport is enabled
Mode is trunk port
Access vlan is 1,Native vlan is 1
Protected is disabled
Vlan lists is
1,3-4094
```

Related commands

Command	Description
show interfaces	Show the interface information.
switchport access	Use this command to configure an interface as a statics access port and assign it to a VLAN.

1.2 Showing Related Command

1.2.1 show interfaces

Use this command to show the interface information and optical module information.

show interfaces [*interface-id*] [**counters | description | status | switchport | trunk | transceiver** [**alarm | diagnosis| line-detect**]]

Parameter description

Parameter	Description
interface-id	Interface (including Ethernet interface, aggregate port, SVI or loopback interface).
counters	The counters on the interface.
description	The description of the interface, including the link status.
status	All the link status of the Layer 2 interface, including the rate and duplex.
switchport	Layer 2 interface information.
trunk	Trunk port, applicable for physical port and aggregate port.

transceiver	Basic optical module information.
alarm	Alarm information of the optical module. The “None” is displayed when no fault exists.
diagnosis	Diagnosis parameter value of the optical module.
line-detect	Line detecting status of the port.

Default configuration

Show all the information.

Command mode

Privileged mode.

Usage guidelines

Show the basic information if no parameter is specified.

Examples

The follow example shows the interface information when the Gi0/1 is Trunk port:

```
SwitchA#show interfaces gigabitEthernet 0/1
Index(dec):1 (hex):1
GigabitEthernet 0/1 is DOWN  , line protocol is DOWN
Hardware is Broadcom 5464 GigabitEthernet
Interface address is: no ip address
  MTU 1500 bytes, BW 1000000 Kbit
  Encapsulation protocol is Bridge, loopback not set
  Keepalive interval is 10 sec , set
  Carrier delay is 2 sec
  RXload is 1 ,Txload is 1
  Queueing strategy: FIFO
    Output queue 0/0, 0 drops;
    Input queue 0/75, 0 drops
  Switchport attributes:
    interface's description:""
    medium-type is copper
    lastchange time:0 Day: 0 Hour: 0 Minute:13 Second
    Priority is 0
    admin duplex mode is AUTO, oper duplex is Unknown
```

```
   admin speed is AUTO, oper speed is Unknown
flow receive control admin status is OFF,flow send control
admin status is OFF,flow receive control oper status is
Unknown,flow send control oper status is Unknown
    broadcast Storm Control is OFF,multicast Storm
Control is OFF,unicast Storm Control is OFF
 Port-type: trunk
   Native vlan:1
   Allowed vlan lists:1-4094
   Active vlan lists:1, 3-4
  5 minutes input rate 0 bits/sec, 0 packets/sec
  5 minutes output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer, 0 dropped
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
    0 packets output, 0 bytes, 0 underruns , 0 dropped
     0 output errors, 0 collisions, 0 interface resets
```

The following example shows the interface information when the Gi0/1 is Access port:

```
SwitchA#show interfaces gigabitEthernet 0/1
Index(dec):1 (hex):1
GigabitEthernet 0/1 is DOWN  , line protocol is DOWN
Hardware is Broadcom 5464 GigabitEthernet
Interface address is: no ip address
  MTU 1500 bytes, BW 1000000 Kbit
  Encapsulation protocol is Bridge, loopback not set
  Keepalive interval is 10 sec , set
  Carrier delay is 2 sec
  RXload is 1 ,Txload is 1
  Queueing strategy: FIFO
    Output queue 0/0, 0 drops;
    Input queue 0/75, 0 drops
  Switchport attributes:
    interface's description:""
    medium-type is copper
    lastchange time:0 Day: 0 Hour: 0 Minute:13 Second
    Priority is 0
    admin duplex mode is AUTO, oper duplex is Unknown
    admin speed is AUTO, oper speed is Unknown
```

```
   flow receive control admin status is OFF,flow send
control admin status is OFF,flow receive control oper
status is Unknown,flow send control oper status is Unknown
    broadcast Storm Control is OFF,multicast Storm
Control is OFF,unicast Storm Control is OFF
  Port-type: access
    Vlan id : 2
  5 minutes input rate 0 bits/sec, 0 packets/sec
  5 minutes output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer, 0 dropped
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
    0 packets output, 0 bytes, 0 underruns , 0 dropped
0 output errors, 0 collisions, 0 interface resets
```

The following example shows the layer-2 interface information when the Gi0/1 is Hybrid port.

```
SwitchA#show interfaces gigabitEthernet 0/1
Index(dec):1 (hex):1
GigabitEthernet 0/1 is DOWN  , line protocol is DOWN
Hardware is Broadcom 5464 GigabitEthernet
Interface address is: no ip address
  MTU 1500 bytes, BW 1000000 Kbit
  Encapsulation protocol is Bridge, loopback not set
  Keepalive interval is 10 sec , set
  Carrier delay is 2 sec
  RXload is 1 ,Txload is 1
  Queueing strategy: FIFO
    Output queue 0/0, 0 drops;
    Input queue 0/75, 0 drops
  Switchport attributes:
    interface's description:""
    medium-type is copper
    lastchange time:0 Day: 0 Hour: 0 Minute:13 Second
    Priority is 0
    admin duplex mode is AUTO, oper duplex is Unknown
    admin speed is AUTO, oper speed is Unknown
    flow receive control admin status is OFF,flow send control admin
status is OFF,flow receive control oper status is Unknown,flow send
control oper status is Unknown
```

```
    broadcast Storm Control is OFF,multicast Storm
Control is OFF,unicast Storm Control is OFF
  Port-type: hybrid
    Tagged vlan id:2
    Untagged vlan id:none
  5 minutes input rate 0 bits/sec, 0 packets/sec
  5 minutes output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer, 0 dropped
    Received 0 broadcasts, 0 runs, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
    0 packets output, 0 bytes, 0 underruns , 0 dropped
0 output errors, 0 collisions, 0 interface resets
```

The following example shows the layer-2 information of the Gi0/1.

```
DES-7200# show interfacesgigabitEthernet 0/1 switchport
Interface Switchport ModeAccess Native Protected VLAN
lists
--------- ---------- --------- ------ ------ ---------
GigabitEthernet 0/1 enabled Access 11  Disabled  ALL
```

Related commands

Command	Description
duplex	Duplex
flowcontrol	Flow control status.
interface gigabitEthernet	Select the interface and enter the interface configuration mode.
interface aggregateport	Create or access the aggregate port, and enter the interface configuration mode.
interface vlan	Create or access the switch virtual interface (SVI), and enter the interface configuration mode.
shutdown	Disable the interface.
speed	Configure the speed on the port.
switchport priority	Configure the default 802.1q interface priority.
switchport protected	Specify the interface as a protected port.

Caution

The functions of showing the optical module information, alarming the fault and diagnosing the parameters shall be used combining with the optical module of the D-Link.

To show the optical module and alarm the fault and diagnose the parameters, the function of Digital Diagnostic Monitoring must be supported by the optical module.

2 MAC Address Configuration Commands

2.1 Configuration Related Commands

2.1.1 address-bind

Use this command to configure IP address-MAC address binding.

address-bind *ip-address mac-address*

no address-bind *ip-address*

Parameter description

Parameter	Description
ip-address	IP address to be bound
mac-address	MAC address to be bound

Command mode

Global configuration mode.

Usage guidelines

If you have bound an IP address and a MAC address, the switch will discard the packets that have the same source IP address but different source MAC address.

Examples

This is an example of binding the IP address 3.3.3.3 and the MAC address 00d0.f811.1112.

```
DES-7200(config)# address-bind 3.3.3.3 00d0.f811.1112
```

Related commands

Command	Description
show address-bind	Show the IP address-MAC address binding table.

Platform description

DES-7200 series support up to 1000 IP address-MAC address binding.

2.1.2 address-bind *ip-address*

Use this command to configure IP address-MAC address binding.

address-bind *ip-address mac-address*

no address-bind *ip-address*

Parameter description

Parameter	Description
ip-address	IP address to be bound
mac-address	MAC address to be bound

Command mode

Global configuration mode.

Usage guidelines

If you have bound an IP address and a MAC address, the switch will discard the packets that have the same source IP address but different source MAC address.

Examples

This is an example of binding the IP address 3.3.3.3 and MAC address 00d0.f811.1112.

```
DES-7200(config)# address-bind 3.3.3.3 00d0.f811.1112
```

Related commands

Command	Function
show address-bind	Show the IP address-MAC address binding table.

Platform description

DES-7200 series support up to 1000 IP address-MAC address binding.

2.1.3 address-bind ipv6-mode

Use this command to set the IP mode of IP address binding.

Set the compatbile mode:

address-bind ipv6-mode compatible

Set the loose mode:

address-bind ipv6-mode loose

Set the compatbile mode:

address-bind ipv6-mode strict

Parameter description	N/A.
Command mode	Global configuration mode.
Default value	Strict mode
Usage guidelines	There are three IP address binding modes: compatible, loose and strict. The following table shows the forwarding rules corresponding to binding modes.

Mode	IPv4 forwarding rule	IPv6 forwarding rule
Strict	Only the packets matching IPv4 and MAC are forwarded.	No IPv6 packets are forwarded (default).
Loose	Only the packets matching IPv4 and MAC are forwarded.	All IPv6 packets are forwarded.
compatible	Only the packets matching IPv4 and MAC are forwarded.	Only the IPv6 packets whose source MAC address is the bound MAC address are forwarded.

Examples

Bind the IP address 192.168.5.2 and the MAC address 00do.f822.33aa and forward the corresponding packets:

```
DES-7200# configure t
Enter configuration commands, one per line.  End with CNTL/Z.
DES-7200(config)#  address-bind  00d0.f822.33aa  ip 192.168.5.2
DES-7200(config)# address-bind ipv6-mode compatible
```

Related commands	**Command** / **Function** **show address-bind uplink** / Show the exceptional port of the address binding.
Platform description	N/A

2.1.4 address-bind install

Use this command to install or uninstall the exceptional port.

address-bind install

no address-bind install

Parameter description	N/A.
Command mode	Global configuration mode.
Usage guidelines	If you have installed the exceptional port, you can run this command to make installation policy take effect.

Examples	Install fa 0/1 port:
	`DES-7200(config)# address-bind uplink fa0/1`
	`DES-7200(config)# address-bind install`

Related commands	**Command** / **Function** **show address-bind uplink** / Show the exceptional port of the address binding.
Platform description	The version must be firmware v10.1 and later.

2.1.5 address-bind uplink

Use this command to configure IP address-MAC address binding.

address-bind uplink *intf-id*

no address-bind uplink *intf-id*

Parameter description

Parameter	Description
intf-id	Exceptional port

Command mode

Global configuration mode.

Usage guidelines

If you have bound an IP address and a MAC address, the switch will discard the packets that have the same source IP address but different source MAC address.

If the port is an exceptional port and is installed (see address-bind install), this binding policy does not take effect.

Examples

Following example is to set the fa 0/1 port as an exceptional port for address binding.

```
DES-7200(config)#address-bind uplink fa0/1
```

Related commands

Command	Function
show address-bind uplink	Show the exceptional port of address binding.

Platform description

The version must be firmware v10.1 and later.

2.1.6 clear mac-address-table dynamic

Use this command to clear the dynamic MAC address.

clear mac-address-table dynamic [address *mac-addr*] **[interface** *interface-id*] [**vlan** *vlan-id*]

Parameter description

Parameter	Description
dynamic	Clear all the dynamic MAC addresses.
address *mac-addr*	Clear the specified dynamic MAC address.
interface *interface-id*	Clear all the dynamic MAC addresses of the specified interface.

	vlan *vlan-id*	Clear all the dynamic MAC addresses of the specified VLAN.

Command mode	Privileged mode.
Usage guidelines	Use **show mac-address-table dynamic** to display all the dynamic MAC addresses.
Examples	Clear all the dynamic MAC addresses: `DES-7200# clear mac-address-table dynamic`

Related commands	**Command**	**Description**
	show mac-address-table dynamic	Use this command to display dynamic MAC address.

2.1.7 clear mac-address-table filtering

Use this command to clear the filtering MAC address.

clear mac-address-table filtering [**address** *mac-addr*] [**vlan** *vlan-id*]

Parameter description	**Parameter**	**Description**
	filtering	Clear all the filtering MAC addresses.
	address *mac-addr*	Clear the specified filtering MAC address.
	vlan *vlan-id*	Clear all the filtering MAC addresses of the specified VLAN.

Command mode	Privileged mode.
Usage guidelines	Use **show mac-address-table filtering** to display all the filtering MAC addresses.
Examples	Clear the filtering MAC address 00d0.f800.0c0c: `DES-7200# clear mac-address-table filtering address 00d0.f800.0c0c`

Related commands

Command	Description
mac-address-table filtering	Configure the filtering MAC address.
show mac-address-table filtering	Show the filtering MAC address.

2.1.8 clear mac-address-table static

Use this command to clear the static MAC address.

clear mac-address-table static [address *mac-addr*] **[interface** *interface-id*] [**vlan** *vlan-id*]

Parameter description

Parameter	Description
static	Clear all the static MAC addresses.
address *mac-addr*	Clear the specified static MAC address.
interface *interface-id*	Clear all the static MAC addresses of the specified interface.
vlan *vlan-id*	Clear all the static MAC addresses of the specified VLAN.

Command mode

Privileged mode.

Usage guidelines

Use **show mac-address-table static** to display all the static MAC addresses.

Examples

The example below is to clear the static MAC address 00d0.f800.073c**:**

```
DES-7200# clear mac-address-table static address
00d0.f800.073c
```

Related commands

Command	Description
mac-address-table static	Configure the static MAC address.
show mac-address-table static	Show the static MAC address.

2.1.9 mac-address-learning

Use this command to enable / disable the MAC address learning on the interface.

mac-address-learning

Parameter description	N/A.
Default configuration	Enabled.
Command mode	Interface configuration mode.
Usage guidelines	The MAC address learning could not be disabled on the interface with the security function enabled. The interface with the MAC address learning function disabled could not be configured the security function.
Examples	The following example disables the MAC address learning. `DES-7200(config-if)# no mac-address-learning`

2.1.10 mac-address-table aging-time

Use this command to specify the aging time of the dynamic MAC address. Use the **no** form of the command to restore it to the default setting.

mac-address-table aging-time *seconds*

no mac-address-table aging-time

Parameter description

Parameter	Description
seconds	Aging time of the dynamic MAC address (in seconds). The time range depends on the switch.

Default configuration 300 seconds.

Command mode	Global configuration mode.
Usage guidelines	Use **show mac-address-table aging-time** to display configuration. Use **show mac-address-table dynamic** to display the dynamic MAC address table.
Examples	`DES-7200(config)# mac-address-table aging-time 150`

Related commands

Command	Description
show mac-address-table aging-time	Use this command to display the aging time of the dynamic MAC address.
show mac-address-table dynamic	Use this command to display dynamic MAC address.

2.1.11 mac-address-table filtering

Use this command to configure the filtering MAC address. Use the **no** form of the command to remove the filtering address.

mac-address-table filtering *mac-address* **vlan** *vlan-id* [source | destination]

no mac-address-table filtering *mac-address* **vlan** *vlan-id*

Parameter description

Parameter	Description
mac-address	Filtering Address
vlan *vlan-id*	VLAN ID. Its range depends on the switch.
source	Filter the frame according to the souce MAC address only.
destination	Filter the frame according to the destination MAC address only.

Default configuration	No filtering address is configured by default. When configuring this command without the **source** or **destination** specified, the frame received in the specified VLAN, which has the same source/destination MAC address with the specified MAC address, will be filtered.

Command mode	Global configuration mode.
Usage guidelines	The filtering MAC address shall not be a multicast address. Use **show mac-address-table filtering** to display the filtering MAC addresses.
Examples	`DES-7200(config)# mac-address-table filtering 00d0f8000000 vlan 1`

Related commands

Command	Description
clear mac-address-table filtering	Clear the filtering MAC address.
show mac-address-table filtering	Show the filtering MAC address.

2.1.12 mac-address-table notification

Use this command to enable the MAC address notification function. You can use The **no** form of the command to disable this function.

mac-address-table notification [**interval** *value* | **history-size** *value*]

no mac-address-table notification [**interval** | **history-size**]

Parameter description

Parameter	Description
interval *value*	Specify the interval of sending the MAC address trap message, 1 second by default.
history-size *value*	Specify the maximum number of the entries in the MAC address notification table, 50 entries by default.

Default configuration	By default, the interval is 1 and the maximum number of the entries in the MAC address notification table is 50.
Command mode	Global configuration mode.

Usage guidelines

The MAC address notification function is specific for only dynamic MAC address and secure MAC address. No MAC address trap message is generated for static MAC addresses. In the global configuration mode, you can use the **snmp-server enable traps mac-notification** command to enable or disable the switch to send the MAC address trap message.

Examples

```
DES-7200(config)# mac-address-table notification
DES-7200(config)# mac-address-table notification interval 40
DES-7200(config)# mac-address-table notification history-size 100
```

Related commands

Command	Description
snmp-server enable traps	Set the method of handling the MAC address trap message..
show mac-address-table notification	Show the MAC address notification configuration and the MAC address trap notification table.
snmp trap mac-notification	Enable the MAC address trap notification function on the specified interface.

2.1.13 mac-address-table static

Use this command to configure a static MAC address. Use the **no** form of the command to remove a static MAC address.

mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

no mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

Parameter description

Parameter	Description
mac-addr	Destination MAC address of the specified entry
vlan-id	VLAN ID of the specified entry.
interface-id	Interface (physical interface or aggregate port) that packets are forwarded to

Default

No static MAC address is configured by default.

configuration	
Command mode	Global configuration mode.
Usage guidelines	A static MAC address has the same function as the dynamic MAC address that the switch learns. Compared with the dynamic MAC address, the static MAC address will not be aged out. It can only be configured and removed by manual. Even if the switch is reset, the static MAC address will not be lost. A static MAC address shall not be configured as a multicast address. Use **show mac-address-table static** to display the static MAC address. Use **clear mac-address-table static** to clear static MAC address.
Examples	When the packet destined to 00d0 f800 073c arrives at VLAN4, it will be forwarded to the specified port gigabitethernet 1/1: `DES-7200(config)# mac-address-table static 00d0.f800.073c vlan 4 interface gigabitethernet 1/1`

Related commands

Command	Description
show mac-address-table static	Show the static MAC address.
clear mac-address-table static	Clear the static MAC address.

Platform description	For DES-7200 series, the global entry number in the MAC address table is 16000 and the global static MAC address number is 1000.

2.1.14 mac-manage-learning dispersive

Use this command to set the management and learning mode of the dynamic MAC address to the dispersive mode.

Parameter description	N/A.

Command mode	Global configuration mode.
Usage guidelines	After the management and learning mode of the dynamic MAC address is set to the dispersive mode, the device can learn more MAC addresses.
Examples	N/A.

Related commands

Command	Function
show mac-address-table mac-manage-learning	Show the MAC address management and learning mode.

2.1.15 mac-manage-learning uniform

Use this command to set the management and learning mode of the dynamic MAC address to the uniform mode.

Parameter description	N/A.
Command mode	Global configuration mode.
Usage guidelines	Setting the management and learning mode of the dynamic MAC address to the uniform mode can improve the L2 switching efficiency. After changing the MAC learning mode, you must save it and restart before the new mode takes effect.
Examples	N/A.

Related commands

Command	Function
show mac-address-table mac-manage-learning	Show the MAC management and learning mode.

Platform description	N/A

2.1.16 mac-manage-learning uniform learning-synchronization

Use this command to synchronize the dynamic MAC address in the whole device in the uniform mode.

[no] mac-manage-learning uniform learning-sychronization

Parameter description	N/A.
Command mode	Global configuration mode.
Usage guidelines	In the uniform mode, the synchronization of the dynamic MAC address in the whole device can further improve the L2 switching efficiency. You can use the **no** form of this command to cancel the synchronization.
Examples	N/A.

Related commands

Command	Function
show mac-address-table mac-manage-learning	Show the MAC address management and learning mode.

Platform description	N/A

2.1.17 snmp trap mac-notification

Use this command to enable the MAC address trap notification on the specified interface. You can use The **no** form of the command to disable this function.

snmp trap mac-notification {**added** | **removed**}

no snmp trap mac-notification {**added** | **removed**}

Parameter description

Parameter	Description
added	Notify when a MAC address is added.
removed	Notify when a MAC address is removed

Default configuration Disabled.

Command mode Interface configuration mode.

Usage guidelines Use **show mac-address-table notification interface** to display configuration.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# snmp trap mac-notification added
```

Related commands

Command	Description
mac-address-table notification	Enable MAC address notification.
show mac-address-table notification	Show the MAC address notification configuration and the MAC address notification table.

2.2 Showing Related Command

2.2.1 show address-bind

Use this command to show IP address-MAC address binding.

show address-bind

Command mode Privileged mode.

Usage guidelines N/A.

Examples

```
DES-7200# show address-bind
IP Address     Binding MAC Addr
------------   -----------------
3.3.3.3        00d0.f811.1112
3.3.3.4        00d0.f811.1117
```

Related commands

Command	Description
address-bind	Enable IP address-MAC address binding.

2.2.2 show address-bind uplink

Use this command to show the exceptional port.

show address-bind uplink

Command mode Privileged mode.

Usage guidelines N/A.

Examples

```
DES-7200# show address-bind uplink
Ports        State
------------ ------
Fa0/1        Disabled
Fa0/2        Disabled
……
```

Related commands

Command	Description
address-bind uplink	Set the exceptional port.

2.2.3 show mac-address-learning

Use this command to show the MAC address learning.

show mac-address-learning

Command mode Privileged mode.

Examples The following example shows the MAC address learning

```
DES-7200# show mac-address-learning
```

2.2.4 show mac-address-table address

Use this command to show all types of MAC addresses (including dynamic address, static address and filtering address)

show mac-address-table [**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

Parameter description

Parameter	Description
address *mac-addr*	Specified MAC address.
interface *interface-id*	Interface ID
vlan *vlan-id*	VLAN ID

Command mode

Privileged mode.

Command mode

```
DES-7200# show mac-address-table address 00d0.f800.1001
Vlan       MAC Address         Type    Interface
----------  ------------------- --------
1          00d0.f800.1001      STATIC   Gi1/1
```

Related commands

Command	Description
show mac-address-table static	Show the static MAC address.
show mac-address-table filtering	Show the filtering MAC address.
show mac-address-table dynamic	Show the dynamic MAC address.
show mac-address-table interface	Show all types of MAC addresses of the specified interface
show mac-address-table vlan	Show all types of MAC addresses of the specified VLAN
show mac-address-table count	Show the address counts in the MAC address table.

	show mac-address-table static	Show the static MAC address.
	show mac-address-table filtering	Show the filtering MAC address.

2.2.5 show mac-address-table aging-time

Use this command to display the aging time of the dynamic MAC address.

show mac-address-table aging-time

Command mode	Privileged mode.

Examples

```
DES-7200# show mac-address-table aging-time
Aging time   : 300
```

Related commands

Command	Description
mac-address-table aging-time	Specify the aging time of the dynamic MAC address.

2.2.6 show mac-address-table count

Use this command to display the mac-address-table count.

show mac-address-table count

Command mode	Privileged mode.

Examples

```
DES-7200# show mac-address-table count
Dynamic Address Count  : 51
Static  Address Count  : 0
Filter  Address Count  : 0
Total Mac Addresses    : 51
Total Mac Address Space Available: 8139
```

Related commands

Command	Description
show mac-address-table static	Display the static address.

show mac-address-table filtering	Display the filtering address.
show mac-address-table dynamic	Display the dynamic address.
show mac-address-table address	Display all the address information of the specified address.
show mac-address-table interface	Display all the address information of the specified interface.
show mac-address-table vlan	Display all the address information of the specified vlan.

2.2.7 show mac-address-table dynamic

Use this command to show the dynamic MAC address.

show mac-address-table dynamic [**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

Parameter description

Parameter	Description
mac-addr	Destination MAC address of the entry
vlan-id	VLAN of the entry
interface-id	Interface that the packet is forwarded to. (It may be a physical port or an aggregate port)

Default configuration

All the MAC addresses are displayed by default.

Command mode

Privileged mode.

Examples

```
DES-7200# show mac-address-table dynamic
Vlan    MAC Address         Type    Interface
------------------------ -------- ------------------
1    0000.0000.0001      DYNAMIC  gigabitethernet 1/1
1    0001.960c.a740      DYNAMIC  gigabitethernet 1/1
1    0007.95c7.dff9      DYNAMIC  gigabitethernet 1/1
```

```
1    0007.95cf.eee0      DYNAMIC  gigabitethernet 1/1
1    0007.95cf.f41f      DYNAMIC  gigabitethernet 1/1
1    0009.b715.d400      DYNAMIC  gigabitethernet 1/1
1    0050.bade.63c4      DYNAMIC  gigabitethernet 1/1
```

Related commands

Command	Description
clear mac-address-table dynamic	Clear the dynamic MAC address.

2.2.8 show mac-address-table filtering

Use this command to show the filtering MAC address.

show mac-address-table filtering [**addr** *mac-addr*] [**vlan** *vlan-id*]

Parameter description

Parameter	Description
mac-addr	Destination MAC address of the entry
vlan-id	VLAN ID of the entry

Command mode

Privileged mode.

Examples

```
DES-7200# show mac-address-table filtering
Vlan       MAC Address       Type    Interface
-------  ----------------- ------- -----------
  1       0000.2222.2222     FILTER Not available
```

Related commands

Command	Description
clear mac-address-table filtering	Clear the filtering MAC address.
mac-address-table filtering	Configure the filtering MAC address.

2.2.9 show mac-address-table interface

Use this command to show all the MAC address information of the specified interface (including static and dynamic MAC address).

show mac-address-table interface [*interface-id*] [**vlan** *vlan-id*]

Parameter description

Parameter	Description
interface-id	Show the MAC address information of the specified Interface(physical interface or aggregate port).
vlan-id	Show the MAC address information of the VLAN.

Command mode

Privileged mode.

Examples

```
DES-7200# show mac-address-table interface
gigabitethernet 1/1
Vlan    MAC Address    Type     Interface
-----  -------------- -------- ----------------
1     00d0.f800.1001  STATIC   gigabitethernet 1/1
1     00d0.f800.1002  STATIC   gigabitethernet 1/1
1     00d0.f800.1003  STATIC   gigabitethernet 1/1
1     00d0.f800.1004  STATIC   gigabitethernet 1/1
```

Related commands

Command	Description
show mac-address-table static	Show the static MAC address.
show mac-address-table filtering	Show the filtering MAC address.
show mac-address-table dynamic	Show the dynamic MAC address.
show mac-address-table address	Show all types of MAC addresses.
show mac-address-table vlan	Show all types of MAC addresses of the specified VLAN.
show mac-address-table count	Show the address counts in the MAC address table.

2.2.10 show mac-address-table mac-manage-learning

Use this command to show the management and learning mode of the dynamic MAC address.

Command mode	Privileged mode.
Usage guidelines	N/A.

Examples	`DES-7200# show mac-address-table mac-manage-learning`
	`######MAC manage-learning`
	`running mode: uniform`
	`configuration mode: uniform`
	`dynamic address learning-synchronization: off.`

Related commands

Command	Function
mac-manage-learning uniform	Set the management and learning mode of the dynamic MAC address to the uniform mode.
mac-manage-learning uniform learning-synchronization	Synchronize the dynamic MAC address in the whole device.
mac-manage-learning dispersive	Set the management and learning mode of the dynamic MAC address to the dispersive mode.

2.2.11 show mac-address-table notification

Use this command to show the MAC address notification configuration and the MAC address notification table.

show mac-address-table notification [**interface** [*interface-id*] **| history**]

Parameter description

Parameter	Description
interface *interface-id*	Interface ID. Show the MAC address notification configuration on the interface.
history	Show the MAC address

	notification history.

Default configuration	The MAC address notification configuration is shown by default.
Command mode	Privileged mode.

Examples

```
DES-7200# show mac-address-table notification interface
Interface        MAC Added Trap  MAC Removed Trap
---------         --------------      --------------
GigabitEthernet1/14   Disabled       Disabled
DES-7200# show mac-address-table notification
MAC Notification Feature: Disabled
Interval between Notification Traps: 1 secs
Maximum Number of entries configured in History Table:1
Current History Table Length: 0
DES-7200# show mac-address-table notification history
History Index: 0
MAC Changed Message:
Operation:ADD Vlan: 1 MAC Addr: 00f8.d012.3456
GigabitEthernet 3/1
```

Related commands

Command	Description
mac-address-table notification	Enable MAC address notification.
snmp trap mac-notification	Enable the MAC address trap notification function on the specified interface.

2.2.12 show mac-address-table static

Use this command to show the static MAC address.

show mac-address-table static [**addr** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

Parameter description

Parameter	Description
mac-addr	Destination MAC address of the entry
vlan-id	VLAN ID of the entry
interface-id	Interface of the entry (physical interface or aggregate port)

Command mode	Privileged mode.

Examples

Show only static MAC addresses

```
DES-7200# show mac-address-table static
Vlan       MAC Address        Type    Interface
----------  ------------------- -------- ---------
1    00d0.f800.1001   STATIC   gigabitethernet 1/1
1    00d0.f800.1002   STATIC   gigabitethernet 1/1
1    00d0.f800.1003   STATIC   gigabitethernet 1/1
```

Related commands

Command	Description
mac-address-table static	Configure the static MAC address.
clear mac-address-table static	Clear the static MAC address.

2.2.13 show mac-address-table vlan

Use this command to show all types of MAC addresses of the specified VLAN

show mac-address-table vlan [*vlan-id*]

Parameter description

Parameter	Description
vlan-id	VLAN ID of the entry

Command mode	Privileged mode.

Examples

```
DES-7200# show mac-address-table vlan 1
Vlan       MAC Address        Type    Interface
----------  ------------------- -------- ---------
1    00d0.f800.1001   STATIC   gigabitethernet 1/1
1    00d0.f800.1002   STATIC   gigabitethernet 1/1
1    00d0.f800.1003   STATIC   gigabitethernet 1/1
```

Related commands

Command	Description
show mac-address-table static	Show the static MAC address.

show mac-address-table filtering	Show the filtering MAC address.
show mac-address-table dynamic	Show the dynamic MAC address.
show mac-address-table address	Show all types of MAC addresses.
show mac-address-table interface	Show all types of MAC addresses of the specified interface.
show mac-address-table count	Show the address counts in the MAC address table.

3 Aggregate Port Configuration Commands

3.1 Configuration Related Commands

3.1.1 aggregateport load-balance

Specify a load-balance algorithm. Use the **no** command to return it to the default setting.

aggregateport load-balance {**dst-mac** | **src-mac** | **src-dst-mac** | **dst-ip** | **src-ip** | **src-dst ip** }

no aggregateport load-balance

Parameter description

Parameter	Description
dst-mac	Traffic is distributed according to the destination MAC addresses of the incoming packets. For all the links of an aggregate port, the messages with the same destination MAC addresses are sent to the same port, and those with different destination MAC addresses are sent to different ports.
src-mac	Traffic is distributed according to the source MAC addresses of the incoming packets. For all the links of an aggregate port, the messages from different addresses are distributed to different ports, and those from the same addresses are distributed to the same port.

Src-dst-ip	Traffic is distributed according to the source IP address and destination IP address. Packets with different source and destination IP address pairs are forwarded through different ports. The packets with the same source and destination IP address pairs are forwarded through the same links. At layer 3, this load balancing style is recommended.
dst-ip	Traffic is distributed according to the destination IP addresses of the incoming packets. For all the links of an aggregate port, the messages with the same destination IP addresses are sent to the same port, and those with different destination IP addresses are sent to different ports.
src-ip	Traffic is distributed according to the source IP addresses of the incoming packets. For all the links of an aggregate port, the messages from different addresses are distributed to different ports, and those from the same addresses are distributed to the same port.
src-dst-mac	Traffic is distributed according to the source and destination MAC addresses. Packets with different source and destination MAC address pairs are forwarded through different ports. The packets with the same source and destination MAC address pairs are forwarded through the same port.

Default configuration

Traffic is distributed according to the destination and source MAC addresses of the incoming packets.

Command mode

Global configuration mode.

Usage guidelines	Use **show aggregateport** to display load-balance configuration.
Examples	`DES-7200(config)# aggregateport load-balance dst-mac`

Related commands

Command	Description
show aggregateport load-balance	Use this command to display aggregate port configurations.

Platform description	N/A

3.1.2 port-group

Use this command to assign a physical interface to be a member port of an aggregate port. Use the **no** form of the command to remove the membership from the aggregate port.

port-group *port-group-number*

no port-group

Parameter description

Parameter	Description
port-group-number	Number of the member group of an aggregate port, the interface number of the aggregate port

Default configuration	By default, the physical port does not belong to any aggregate port.
Command mode	Interface configuration mode.
Usage guidelines	All the members of an aggregate port belong to a VLAN or configured to be trunk ports. The ports belonging to different native VLANs cannot form an aggregate port.
Examples	This example shows how to specify the Ethernet interface 1/3 and 1/4 as members of AP 3: `DES-7200(config)# interface gigabitethernet 1/3`

```
DES-7200(config-if)# port-group 3
```

Platform description	DES-7200 series support up to 8 member ports and create up to 128 AP globally.

3.2 Showing Related Command

3.2.1 show aggregateport

Use this command to display the aggregate port configurations.

show aggregateport {[*aggregate-port-number*] **summary** | **load-balance**}

Parameter description

Parameter	Description
aggregate-port-number	Number of the aggregate port.
load-balance	Show the load-balance algorithm on the aggregate port.
summary	Show the summary of the aggregate port.

Command mode

Privileged mode.

Usage guidelines

If the aggregate port number is not specified, all the aggregate port information will be displayed.

Examples

```
DES-7200# show aggregateport 1 summary
AggregatePort  MaxPorts       SwitchPort Mode   Ports
-------------  --------       -------------   ------
Ag1              8             Enabled     ACCESS
```

Related commands

Command	Description
aggregateport load-balance	Configure a load-balance algorithm of AP.

4 LACP Configuration Commands

4.1 Configuration Related Commands

4.1.1 port-group mode

Use this command to enable LACP and specify the group ID and the aggregation mode. Use the **no** form of this command to disable the LACP.

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

no port-group

Parameter description

Parameter	Description
key	Specify the group ID on the port to be aggregated. The key values vary with the aggregation group numbers supported for different products.
active	Places a port into an active negotiating state, in which the port initiates negotiations with remote ports by sending LACP packets.
passive	Places a port into a passive negotiating state, in which the port responds to LACP packets it receives but does not initiate LACP negotiation.

Default configuration By default, the LACP function is disabled on the interface.

Command mode Interface configuration mode.

Usage N/A

guidelines

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# port-group 1 mode active
```

Related commands

Command	Description
lacp port-priority	Set the LACP port priority.

4.1.2 lacp port-priority

Use this command to set the LACP port priority. Use the **no** form of this command to return to the default value.

lacp port-priority *port-priority*

no lacp port-priority

Parameter description

Parameter	Description
port-priority	The port priority, in the range of 0-65535.

Default configuration

By default, the port priority is 32768.

Command mode

Interface configuration mode.

Usage guidelines

When multiple ports are to be aggregated, the ports with high priorities take precedence and the port with the highest priority is selected as the master port. The port priority sequence is determined according to the wire quality.

The LACP cannot be enabled on the ports with the function of forbidding the member ports to add to or leave the AP enabled; and the function of forbidding the member ports to add to or leave the AP cannot be enabled on the LACP member ports. The AP with the function of forbidding the member ports to add to or leave cannot configured as the LACP AP, and function of forbidding the member ports to add to or leave the AP cannot be enabled on the LACP AP.

The SYSLOG will be displayed when the LACP fails to

leave the AP due to external function limitations, such as: %LACP-5-UNBUNDLE_FAIL: Interface FastEthernet 0/1 failed to leave the AggregatePort 1. In this case, please modify the configuration to cancel the related configuration of forbidding the member ports to leave the AP, otherwise the normal packets transmission on the AP will be influenced.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# lacp port-priority 4096
```

Related commands

Command	Description
port-group *key* **mode** {**active**	**passive**}	Enable the LACP on the port and specify the aggregation group ID and operation mode.

4.1.3 lacp system-priority

Use this command to set the LACP system priority. The **no** form of it restores it to the default.

lacp system-priority *system-priority*

no lacp system-priority

Parameter description

Parameter	Description
system-priority	The LACP system priority, in the range of 0-65535.

Default configuration

By default, the system priority is 32768.

Command mode

Global configuration mode.

Usage guidelines

LACP system priority consists of the Layer2 management MAC address and its priority value, where the MAC address is fixed but the priority value is configurable. If two

priorities are equal, then the smaller the MAC address is, the higher the priority is. All LACP groups on the switch share the system priority. Changing the system priority may influence the whole aggregation groups on the switch.

Examples

```
DES-7200(config)# lacp system-priority 4096
```

Related commands

Command	Description
port-group *key* **mode** {**active** | **passive**}	Enable the LACP on the port and specify the aggregation group ID and operation mode.
lacp port-priority	Set the LACP port priority.

4.2 Showing Related Command

4.2.1 show lacp summary

Use this command to show the LACP aggregation information.

show lacp summary [*key***]**

Parameter description

Parameter	Description
key	Specify the aggregation group id to show. If it is not specified, all aggregation group information is shown by default.

Command mode

Privileged mode.

Usage guidelines

N/A.

Examples

```
DES-7200# show LACP summary
Flags:S - Device is sending Slow LACPDUs   F - Device is sending
fast LACPDUs.
A - Device is in active mode.   P - Device is in passive mode.
Aggregate port 3:
Local information:
```

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

Field	Description
Local information	Show the local LACP information.
Port	Show the system port ID.
Flags	Show the port state flag: “S” indicates that the LACP is stable and in the state of periodically sending the LACPPDU; “A” indicates that the port is in the active mode.
State	Show the port aggregation information: “bndl” indicates that the port is aggregated; “Down” represents the disconnection port state; “susp” indicates that the port is not aggregated.

LACP Port Priority	Show the LACP port priority.
Oper Key	Show the port operation key.
Port Number	Show the port number.
Port State	Show the flag bit for the LACP port state.
Partner infomation	Partly show the LACP information of the peer port.
Dev ID	Partly show the system MAC information of the peer device.

Related commands

Command	Description
port-group *key* **mode**	Enable the LACP on the port and specify the aggregation group ID and operation mode.

5 VLAN Configuration Commands

5.1 Configuration Related Commands

5.1.1 add

Use this command to add one or a group Access interface into current VLAN. Use the **no** form of the command to remove the Access interface.

add interface { *interface-id* | **range** *interface-range* }

no add interface { *interface-id* | **range** *interface-range* }

Parameter description

Parameter	Description
interface-id	Layer-2 Ethernet interface or layer-2 AP port.
range *interface-range*	Range of the Layer-2 Ethernet interface or layer-2 AP port.

Default configuration

All layer-2 Ethernet interfaces are in the VLAN1.

Command mode

VLAN configuration mode.

Usage guidelines

- This command is only valid for the access port.
- The configuration of this command is the same as specifying the VLAN to which interface belongs in the interface configuration mode (that is the **switchport access vlan** v*lan-id*). For the two commands of adding the interface to the VLAN, the command configured later will overwrite the one configured before and take effect.
- The configuration of adding the layer-2 AP into current VLAN through this command will only take effect for the layer-2 AP port, but not for the member port of the layer-2 AP port.

Examples

The following example adds the interface GigabitEthernet 0/10 into the VLAN20.

```
DES-7200# configure terminal
SwitchA(config)#vlan 20
SwitchA(config-vlan)#add interface GigabitEthernet 0/10
DES-7200# show interface GigabitEthernet 0/10 switchport
Interface  Switchport  Mode  Access  Native Protected
VLAN lists
---------- --------     -----  -----  ---- ----------
-------
GigabitEthernet 0/10 enabled  ACCESS  20   1   Disabled
ALL
```

The following example adds the interface range GigabitEthernet 0/1-10 into the VLAN200.

```
DES-7200# configure terminal
SwitchA(config)#vlan 200
SwitchA(config-vlan)#add interface range GigabitEthernet
0/1-10
DES-7200# show vlan
SwitchA#show vlan
VLAN Name       Status                    Ports
----      -------                          ------------
----------------------------
1        VLAN0001                                STATIC
                              Gi0/11,Gi0/12,Gi0/13,Gi0/1
                              4,Gi0/15,
                              Gi0/16,Gi0/17,Gi0/18,Gi0/1
                              9,Gi0/20,Gi0/21,    Gi0/22,
```

```
                                    Gi0/23, Gi0/24
200  VLAN0200  STATIC    Gi0/1,Gi0/2,Gi0/3,Gi0/4,Gi0/5,
                                    Gi0/6,Gi0/7,Gi0/8,Gi0
                                    /9,Gi0/10
```

The following example adds the AggregatePort10 into the VLAN20.

```
DES-7200# configure terminal
SwitchA(config)#vlan 20
SwitchA(config-vlan)#add interface aggregateport 10
DES-7200# show interface aggregateport 10 switchport
Interface  Switchport   Mode  Access  Native Protected
VLAN lists
---------- --------      -----  -----  ---- ----------
-------
AggregatePort 10 enabled  ACCESS  20   1   Disabled  ALL
```

Related commands

Command	Description
show interface *interface-id* **switchport**	Show the layer-2 interfaces.

5.1.2 name

Use the command to specify the name of a VLAN. Use the **no** form of the command to restore it to the default setting.

name *vlan-name*

no name

Parameter description

Parameter	Description
vlan-name	VLAN name

Default configuration

The default name of a VLAN is the combination of “VLAN” and VLAN ID, for example, the default name of the VLAN 2 is “VLAN0002”.

Command mode

VLAN configuration Mode.

Usage

You can view the VLAN settings by using the **show vlan**

guidelines	command.

Examples

```
DES-7200(config)# vlan 10
DES-7200(config-vlan)# name vlan10
```

Related commands

Command	Description
show vlan	Show member ports of the VLAN.

5.1.3 switchport access

Use this command to configure an interface as a statics access port and assign it to a VLAN. Use the **no** form of the command to assign the port to the default VLAN.

switchport access vlan *vlan-id*

no switchport access vlan

Parameter description

Parameter	Description
vlan-id	The VLAN ID at which the port to be added.

Default configuration	By default, the switch port is an access port and the VLAN is VLAN 1.
Command mode	Interface configuration mode.
Usage guidelines	Enter one VLAN ID. The system will create a new one and add the interface to the VLAN if you enter a new VLAN ID. If the VLAN ID already exists, the command adds the port to the VLAN. If the port is a trunk port, the operation does not take effect.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# switchport access vlan 2
```

Related commands

Command	Description
switchport mode	Specify the interface as Layer 2 mode (switch port mode).

	switchport trunk	Use this command to specify a native VLAN and the allowed-VLAN list for the trunkport.

5.1.4 switchport mode

Use this command to specify a L2 interface (switch port) mode. You can specify this interface to be an access port or a trunk port or an 802.1Q tunnel. Use the **no** form of the command to restore the default setting.

switchport mode {**access** | **trunk | hybrid | uplink | dot1q-tunnel**}

no switchport mode

Parameter description

Parameter	Description
access	Configure the switch port as an access port.
trunk	Configure the switch port as a trunk port.
hybrid	Configure the switch port as a hybrid port.
uplink	Configure the switch port as an uplink port.
dot1q-tunnel	Configure the switch port as a 802.1Q tunnel port.

Default configuration

By default, the switch port is an access port.

Command mode

Interface configuration mode.

Usage guidelines

If a switch port mode is access port, it can be the member port of only one VLAN. Use **switchport access vlan** to specify the member of the VLAN.

A trunk port can be the member port of various VLANs defined by the allowed-VLAN list. The allowed VLAN list of the interface determines the VLANs to which the interface may belong. The trunk port is the member of all the VLANs in the allowed VLAN list. Use **switchport trunk** to define the allowed-VLANs list.

Examples

```
DES-7200(config-if)# switchport mode trunk
```

Related commands

Command	Description
switchport access	Use this command to configure an interface as a statics access port and assign it to a VLAN.
switchport trunk	Use this command to specify a native VLAN and the allowed-VLAN list for the trunkport.

5.1.5 switchport trunk

Use this command to specify a native VLAN and the allowed-VLAN list for the trunk port. Use the **no** form of the command to restore the default setting.

switchport trunk {**allowed vlan** { **all** | [**add** | **remove** | **except**] *vlan-list* }| **native vlan** *vlan-id*}

no switchport trunk {**allowed vlan** | **native vlan** }

Parameter description

Parameter	Description
allowed vlan *vlan-list*	Configure the list of VLANs allowed on the trunk port. *vlan-list* can be a VLAN or a range of VLANs starting with the smaller VLAN ID and ending with the larger VLAN ID and being separated by hyphen, for example, 10 to 20. The segments can be separated with a comma (,), for example, 1 to 10, 20 to 25, 30, 33. **all** means that the allowed VLAN list contains all the supported VLANs; **add** means to add the specified VLAN list to the allowed VLAN list; **remove** means to remove the specified VLAN list from the allowed VLAN list; **except** means to add all the VLANs other than those in the specified VLAN list to the allowed VLAN list;
native vlan *vlan-id*	Specify the native VLAN.

Default configuration

The default allowed-VLAN list is all the VLANs, the default native VLAN is VLAN 1.

Command mode	Interface configuration mode.
Usage guidelines	**Native VLAN:** A trunk port belongs to one native VLAN. A native VLAN means that the untagged packets received/sent on the trunk port belong to the VLAN. Obviously, the default VLAN ID of the interface (that is, the PVID in the IEEE 802.1Q) is the VLAN ID of the native VLAN. In addition, when frames belonging to the native VLAN are sent over the trunk port, they are untagged. **Allowed-VLAN List:** By default, a trunk port sends traffic to and received traffic from all VLANs (ID 1 to 4094). However, you can prevent the traffic from passing over the trunk port by configuring allowed VLAN lists on a trunk port . Use **show interfaces switchport** to display configuration.

Examples	The example below removes port 1/15 from VLAN 2:
	`DES-7200(config)# interface fastethernet 1/15`
	`DES-7200(config-if)# switchport trunk allowed vlan remove 2`
	`DES-7200(config-if)# end`
	`DES-7200# show interfaces fastethernet1/15 switchport`
	`Interface Switchport Mode Access Native Protected VLAN lists`
	`--------- --------- --------- ---------`
	`FigabitEthernet 1/15 enabled TRUNK 1 1 Disabled 1,3-4094`

Related commands

Command	Description
show interfaces	Show the interface information.
switchport access	Use this command to configure an interface as a statics access port and assign it to a VLAN.

5.1.6 vlan

Use this command to enter the VLAN configuration mode. Use the **no** form of the command to remove the VLAN.

vlan vlan-id

no vlan *vlan-id*

Parameter description

Parameter	Description
vlan-id	VLAN ID Default VLAN (VLAN 1) cannot be removed.

Command mode

Global configuration mode.

Usage guidelines

To return to the privileged EXEC mode, input **end** or pressing **Ctrl+C**.

To return to the global configuration mode, input **exit.**

Examples

```
DES-7200(config)# vlan 1
DES-7200(config-vlan)#
```

Related commands

Command	Description
show vlan	Show member ports of the VLAN.

5.2 Showing Related Commands

5.2.1 show vlan

Show member ports of the VLAN.

show vlan [**id** *vlan-id*]

Parameter description

Parameter	Description
vlan-id	VLAN ID

Default configuration

Show all the information by default.

Command mode

Privileged mode.

Usage guidelines

To return to the privileged EXEC mode, input **end** or pressing **Ctrl+C**.

To return to the global configuration mode, input **exit.**

Examples

```
DES-7200# show vlan id 1
VLAN Name      Status    Ports
---------- ------------ ------------
1   VLAN0001       STATIC    Fa0/1, Fa0/2
```

Related commands

Command	Description
name	VLAN name.
switchport access	Add the interface to a VLAN.

6 Super-VLAN Configuration Commands

6.1 Configuring Related Commands

6.1.1 subvlan

Use this command to set the sub VLAN of this super VLAN or delete sub VLAN.

subvlan *vlan-id-list*

no subvlan *[vlan-id-list]*

Parameter description

Parameter	Description
vlan-id-list	Sub VLAN ID of the VLAN. Multiple VLANs are supported.

Command mode

VLAN configuration Mode.

Usage guidelines

Use **no subvlan** command to delete all sub VLANs of this super VLAN.

Examples

```
DES-7200(config)# vlan 3
DES-7200(config-vlan)# supervlan
DES-7200(config-vlan)# subvlan 5
DES-7200(config-vlan)# subvlan 7-19
```

Related commands

Command	Description
show supervlan	Show the super VLAN information.

6.1.2 subvlan-address-range

Use this command to set the IP address range of the sub VLAN.

subvlan-address-range *start-ip end-ip*

no subvlan-address-range

Parameter description

Parameter	Description
start-ip	The start IP address of this sub VLAN
end-ip	The end IP address of this sub VLAN

Command mode

VLAN configuration Mode.

Usage guidelines

To return to the privileged EXEC mode, input **end** or press **Ctrl+C**.

To return to the global configuration mode, input **exit.**

Examples

```
DES-7200(config)# vlan 3
DES-7200(config-vlan)# subvlan-address-range
192.168.3.10 192.168.3.100
```

Related commands

Command	Description
show supervlan	Show the super VLAN information.

6.1.3 supervlan

Use this command to set the VLAN as a super VLAN.

supervlan

no supervlan

Parameter description

N/A.

Command mode

VLAN configuration Mode.

Usage guidelines

To return to the privileged EXEC mode, input **end** or press **Ctrl+C**.

To return to the global configuration mode, input **exit.**

Examples

```
DES-7200(config)# vlan 3
DES-7200(config-vlan)# supervlan
```

Related commands

Command	Description
show supervlan	Show the super VLAN information.

Platform description N/A.

6.1.4 proxy-arp

Use this command to enable the ARP agent function of a VLAN.

proxy -arp

no proxy -arp

Parameter description N/A.

Command mode VLAN configuration Mode.

Usage guidelines

To return to the privileged EXEC mode, input **end** or press **Ctrl+C**.

To return to the global configuration mode, input **exit.**

Examples

```
DES-7200(config)# vlan 3
DES-7200(config-vlan)# proxy-arp
```

Related commands

Command	Description
show supervlan	Show the super VLAN information.

Platform description N/A.

6.2 Showing Related Command

6.2.1 show supervlan

Use this command to show the configuration of the super VLAN and its sub VLANs.

show supervlan

show supervlan id *vlan-id*

Parameter description

Parameter	Description
vlan-id	VLAN ID

Command mode

Privileged mode.

Usage guidelines

N/A.

Examples

```
DES-7200# show supervlan
supervlan id  supervlan arp-agent  subvlan id  subvlan
arp-agent  subvlan ip range
-------    ----------  -------------
-----------------
3               ON         4              ON
                           5              ON
```

7 Protocol VLAN Configuration Commands

7.1 Configuration Related Commands

7.1.1 protocol-vlan ipv4 *addr* mask *addr* vlan *id*

Use this command to configure the IP address, subnet mask and VLAN classification.

Parameter description

Parameter	Description
addr	IP address in the x.x.x.x format.
id	VLAN ID, the maximal VLAN the product supports

Default configuration N/A.

Command mode Global configuration mode.

Examples

```
DES-7200(config)# protocol-vlan ipv4 192.168.100.3 mask 255. 255.255.0 vlan 100
```

Related commands

Command	Description
show protocol-vlan ipv4	
no protocol-vlan ipv4 *addr* **mask** *addr*	
no protocol-vlan ipv4	

Platform description The software version must be firmware v10.1 and later.

7.1.2 protocol-vlan ipv4

Use this command to enable configuring the IP address, subnet mask and VLAN classification.

Parameter description

Parameter	Description
-	-

Default configuration N/A.

Command mode Interface configuration mode.

Examples

```
DES-7200(config-if)# protocol vlan ipv4
```

Related commands

Command	Description
no protocol-vlan ipv4	-

Platform description The software version must be firmware v10.1 and later.

7.1.3 protocol-vlan profile *num* frame-type *type* ether-type *type*

Use this command to configure message type and Ethernet type profile.

Parameter description

Parameter	Description
num	Profile indexes
type	Type of message and Ethernet

Default configuration N/A.

Command mode Global configuration mode.

Examples

```
DES-7200(config)# protocol-vlan  profile 1 frame-type
ETHERII ether-type aarp
```

Related commands	**Command**	**Description**
	show protocol-vlan profile	
	show protocol-vlan profile *num*	
	no protocol-vlan profile	
	no protocol-vlan profile *num*	

Platform description	The software version must be firmware v10.1 and later.

7.1.4 protocol-vlan profile *num* vlan *id*

Use this command to apply some profile to an interface.

Parameter description	**Parameter**	**Description**
	num	Profile indexes
	id	VLAN ID, the maximal VLAN the product supports.

Command mode	Interface mode.

Examples	`DES-7200(config-if)# protocol-vlan profile 1 vlan 101`

Related commands	**Command**	**Description**
	show protocol-vlan profile	
	show protocol-vlan profile *num*	
	no protocol-vlan profile	
	no protocol-vlan profile *num*	

Platform description	The software version must be firmware v10.1 and later.

7.2 Showing Related Commands

7.2.1 show protocol-vlan

Show the configuration of protocol VLAN.

show protocol-vlan

Parameter description	N/A.
Default configuration	N/A.
Command mode	Privileged mode.
Examples	`DES-7200# show protocol-vlan`
Platform description	The software version must be firmware v10.1 and later.

8 Private VLAN Configuration Commands

8.1 Configuration Related Commands

8.1.1 private-vlan *type*

Use this command to configure the VLAN as the private VLAN.

private-vlan {**community | isolated | primary**}

no private-vlan {**community | isolated | primary**}

Parameter description

Parameter	Description
community	Configure it as the community VLAN.
isolated	Configure it as the isolated VLAN.
primary	Configure it as the primary VLAN.
no	Delete the corresponding private VLAN configuration.

Default configuration

No private VLAN is configured.

Command mode

VLAN configuration Mode.

Examples

```
DES-7200(config)# vlan 22
DES-7200(config-vlan)# private-vlan primary
```

Related commands

Command	Description
show vlan private-vlan	

Platform description	The software version must be firmware v10.1 and later.

8.1.2 private-vlan association

Use this command to associate the secondary VLAN with the primary command.

private-vlan association {*svlist* **| add** *svlist* **| remove** *svlist*}

no private-vlan association

Parameter description

Parameter	Description
svlist	The secondary VLAN list
no	Remove the association between the primary VLAN and all the secondary VLANs.

Default configuration	No association.
Command mode	Primary VLAN configuration Mode.

Examples

```
DES-7200(config)# vlan 22
DES-7200(config-vlan)# private-vlan association add 24-26
```

Related commands

Command	Description
show vlan private-vlan	

Platform description	The software version must be firmware v10.1 and later.

8.1.3 private-vlan mapping

Use this command to map the secondary VLAN to the L3 SVI interface.

private-vlan mapping {*svlist* **| add** *svlist* **| remove** *svlist*}

no private-vlan mapping

Parameter description

Parameter	Description
svlist	secondary VLAN list
no	Delete the mapping.

Command mode

The interface mode corresponding to the primary VLAN

Examples

```
DES-7200(config)# interface vlan 22
DES-7200(config-if)# private-vlan mapping add 24-26
```

Related commands

Command	Description
show vlan private-vlan	

Platform description

The software version must be firmware v10.1 and later.

8.1.4 switchport mode private-vlan

Use this command to declare the private VLAN mode of the interface.

switchport mode private-vlan {**host | promiscuous** }

no switchport mode

Parameter description

Parameter	Description
host	Host mode of the private VLAN
promiscuous	Promiscuous mode of the private VLAN
no	Delete the private VLAN configuration of the port.

Command mode

Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitEthernet0/2
DES-7200(config-if)# switchport mode private-vlan host
```

Related

Command	Description

	show vlan private-vlan	

Platform description The software version must be firmware v10.1 and later.

8.1.5 switchport private-vlan host-association

Use this command to associate the primary VLAN, which is associated with the private VLAN mode of the interface, with the secondary VLAN.

switchport private-vlan host-association *p_vid s_vid*

no switchport private-vlan host-association

Parameter description

Parameter	Description
p_vid	Primary VID.
s_vid	Secondary VID
no	Delete the host port from the private VLAN.

Command mode Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode private-vlan host
DES-7200(config-if)# switchport private-vlan
host-association 22 23
```

Related commands

Command	Description
show vlan private-vlan	

Platform description The software version must be firmware v10.1 and later.

8.1.6 switchport private-vlan association trunk

Use this command to associate the trunk port in the private VLAN mode, which is associated with the primary VLAN and the secondary VLAN.

switchport private-vlan association trunk *p_vid s_vid*

no switchport private-vlan association trunk

Parameter description

Parameter	Description
p_vid	Primary VID.
s_vid	Secondary VID
no	Delete the host port from the private VLAN.

Command mode

Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitEthernet 0/2
DES-7200(config-if)# switchport mode trunk
DES-7200(config-if)# switchport private-vlan
association trunk 202 203
```

Related commands

Command	Description
show vlan private-vlan	

Platform description

The software version must be firmware v10.4 (3) and later.

8.1.7 switchport private-vlan mapping

Use this command to configure the promiscuous secondary VLANs that the promiscuous mode of the private VLAN maps.

switchport private-vlan mapping *p_vid* {*svlist*|**add** *svist* |**remove** *svlist*}

no switchport private-vlan mapping

Parameter description

Parameter	Description
p_vid	Primary VID
svlist	Secondary VLAN list.
no	Remove all the promiscuous secondary VLANs.

Default configuration

No promiscuous secondary VLAN is configured.

Command mode	Hybrid interface configuration mode of private VLAN

Examples

```
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode private-vlan promiscuous
DES-7200(config-if)# switchport private-vlan mapping 22 add 23-25
```

Related commands

Command	Description
show vlan private-vlan	

Platform description	The software version must be firmware v10.1 and later.

8.1.8 switchport private-vlan promiscuous trunk

Use this command to configure the ports as a promiscuous trunk port , which is associated with the L2 port and the private VLAN. Multiple pairs are allowed to associate.

[no] switchport private-vlan promiscuous trunk *p_vid_s_list*

Parameter description

Parameter	Description
p_vid	Primary VID
svlist	Secondary VLAN list.
no	Remove all the relationships between the layer-2 ports and private VLANs.

Default configuration	None.
Command mode	Interface configuration mode

Examples

```
DES-7200(config)# interface gigabitEthernet 0/2
DES-7200(config-if)# switchport mode trunk
DES-7200(config-if)# switchport private-vlan promiscuous trunk 202 203
```

Related commands

Command	Description
-	-

Platform description The software version must be firmware v10.4 (3) and later.

8.2 Showing Related Commands

8.2.1 show vlan private-vlan

Show the configuration of private VLAN.

show vlan private-vlan [**community** | **primary** | **isolated**]

Parameter description

Parameter	Description
primary	Show the primary VLAN information.
community	Show the community VLAN information.
isolated	Show the isolated VLAN information.

Default configuration No private VLAN is configured.

Command mode Privileged mode.

Examples

```
DES-7200# show vlan private-vlan
```

Platform description The software version must be firmware v10.1 and later.

8.3 Hybrid Commands

8.3.1 switchport mode hybrid

Use this command to configure the port as a hybrid port.

switchport mode hybrid

no switchport mode

Parameter description

Parameter	Description
no	Delete the hybrid port.

Default configuration No hybrid port is configured.

Command mode Interface configuration mode.

Examples

```
DES-7200(config-if)# switchport mode hybrid
```

Platform description The software version must be firmware v10.1 and later.

8.3.2 switchport hybrid native vlan

Use this command to configure the default VLAN of a hybrid port.

switchport hybrid native vlan *vid*

no switchport hybrid native vlan

Parameter description

Parameter	Description
no	Restore the hybrid port to the default VLAN.

Default configuration No default VLAN is configured.

Command mode Interface mode.

Examples

```
DES-7200(config-if)# switchport hybrid native vlan 3
```

Platform description The software version must be firmware v10.1 and later.

8.3.3 switchport hybrid allowed vlan

Use this command to configure the output rules of a hybrid port.

switchport hybrid allowed vlan [[add] [tagged | untagged] | remove] v*list*

no switchport hybrid allowed vlan

Parameter description

Parameter	Description
no	Restore the output rules of the hybrid port to the default settings.

Default configuration No output rules are configured.

Command mode Interface mode.

Examples

```
DES-7200(config-if)# switchport hybrid allowed vlan add untagged 3-5
```

Platform description The software version must be firmware v10.1 and later.

9 Share VLAN Configuration Commands

9.1 Configuration Related Commands

9.1.1 share

Use this command to set the share vlan.

Parameter description

Parameter	Description
-	-

Default Settings

N/A.

Command mode

VLAN configuration mode.

Usage guidelines

Use the **no share** command to cancel the share vlan.

Enter the **end** command or **Ctrl+C** to return to the privileged EXEC mode.

Enter the **exit** command to return to the global configuration mode.

Examples

```
DES-7200(config)# vlan 2
DES-7200(config-vlan)# share
```

Related commands

Command	Description
-	-

9.2 Showing Related Commands

9.2.1 show mac-address-table share

Use this command to show the mac address status: original, duplicated and null. The “null” item indicates that share vlan has not been configured.

Parameter description

Parameter	Description
-	-

Default Settings

N/A.

Command mode

Any configuration mode.

Usage guidelines

Enter the **end** command or **Ctrl+C** to return to the privileged EXEC mode.

Enter the **exit** command to return to the global configuration mode.

Examples

```
DES-7200# show mac-address-table share
Vlan  MAC Address     Type    Interface   Status
----  -------------- ------- ----------- ----------
   1   0040.4650.1e1e DYNAMIC Gigabit 0/1 original
   2   0040.4650.1e1e DYNAMIC Gigabit 0/1 duplicated
```

Related commands

Command	Description
-	-

10 MSTP Configuration Commands

10.1 Configuration Related Commands

10.1.1 spanning-tree

Use this command to enable MSTP and configure its basic settings globally. The **no** form of the command disables the spanning-tree function. The **no** form of the command with parameters only restores the corresponding parameters to the default values, but does not disable the spanning-tree function.

spanning-tree [**forward-time** *seconds*|**hello-time** *seconds* |**max-age** *seconds*]

no spanning-tree [**forward-time** | **hello-time** | **max-age**]

Parameter description

Parameter	Description
forward-time *seconds*	Interval at which the port status changes
hello-time *seconds*	Interval at which the switch sends the BPDU message
max-age *seconds*	Maximum aging time of the BPDU message

Default configuration Disabled.

Command mode Global configuration mode.

Usage guidelines

The values of **forward-time, hello time** and **max-age** are interrelated. Modifying one of these three parameters will affect the others. There is a restricted relationship among the above three values.
2*(Hello Time+1.0snd) <= Max-Age Time <= 2*(Forward-Delay–1.0snd)
If the values do not according with the condition, the settings do not work.

Examples

Enable the spanning-tree function:

```
DES-7200(config)# spanning-tree
```

Configure the BridgeForwardDelay:

```
DES-7200(config)# spanning-tree  forward-time 10
```

Related commands

Command	Description
show spanning-tree	Show the global STP configuration.
spanning-tree mst cost	Set the PathCost of an STP interface.
spanning-tree tx-hold-count	Set the global TxHoldCount of STP.

10.1.2 spanning-tree bpdufilter

Use this command to enable BPDU filter on the interface. You can use the **enabled** or **disabled** option of the command to enable or disable the BPDU filter function on the interface.

spanning-tree bpdufilter [**enabled** | **disabled**]

Parameter description

Parameter	Description
enabled	Enable BPDU filter on the interface.
Disabled	Disable BPDU filter on the interface.

Default configuration

Disabled.

Command mode

Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# spanning-tree bpdufilter enable
```

Related commands

Command	Description
show spanning-tree interface	Show the STP configuration of the interface.

10.1.3 spanning-tree bpduguard

Use this command to enable the BPDU guard function on the interface. You can use the **enabled** or **disabled** option of the command to enable or disable the BPDU guard function on the interface.

spanning-tree bpduguard [**enabled** | **disabled**]

Parameter description

Parameter	Description
enabled	Enable BPDU guard on the interface.
disabled	Disable BPDU guard on the interface.

Default configuration Disabled.

Command mode Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# spanning-tree bpduguard enable
```

Related commands

Command	Description
show spanning-tree interface	Show the STP configuration of the interface.

10.1.4 spanning-tree link-type

Use this command to configure the link type of the interface. Use the **no** form of the command to restore the configuration to the default value.

spanning-tree link-type [**point-to-point** | **shared**]

no spanning-tree link-type

Parameter description

Parameter	Description
point-to-point	Set the link type of the interface to point-to-point.
shared	Forcibly set the link type of the interface to shared.

Default configuration

For a full-duplex interface, its link type is set to point-to-point link; for a half-duplex interface, its link type is set to shared.

Command mode

Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# spanning-tree link-type
point-to-point
```

Related commands

Command	Description
show spanning-tree interface	Show the STP configuration of the interface.

10.1.5 spanning-tree max-hops

Use this command to set the maximum number of hops(Max-hopsCount) of the BPDU message in the global configuration mode, the number of hops in a region that the BPDU message passes before being dropped. This parameter takes effect for all instances. Use the **no** form of the command to restore it to the default setting.

spanning-tree max-hops *hop-count*

no spanning-tree max-hops

Parameter description

Parameter	Description
hop-count	Number of hops in a region that the BPDU message passes before being dropped. The range is 1 to 40 hops.

Default configuration

The default is 20 hops.

Command mode	Global configuration mode.
Usage guidelines	In the region, the BPDU message sent by the root bridge includes a Hot Count field. When the BPDU message passes a device, the Hop Count is decreased by 1 until it reaches 0, which indicates the BPDU message times out. The device will drop the BPDU message whose Hop Count is 0. Changing the **max-hops** command affects all instances.
Examples	This example shows how to set the max-hops of the spanning tree to 10 for all instances: `DES-7200(config)# spanning-tree max-hops 10` You can verify your setting by entering the **show spanning-tree mst** command in the privileged configuration mode.

Related commands

Command	Description
show spanning-tree	Show the MSTP information.

10.1.6 spanning-tree mode

Use this command to set the STP version in the global configuration mode. Use the **no** form of the command to restore the version of the spanning-tree to the default setting.

spanning-tree mode [**stp** | **rstp** | **mstp**]

no spanning-tree mode

Parameter description

Parameter	Description
stp	Spanning tree protocol(IEEE 802.1d)
rstp	Rapid spanning tree protocol(IEEE 802.1w)
mstp	Multiple spanning tree protocol(IEEE 802.1s)

Default	MSTP version.

configuration	
Command mode	Global configuration mode.
Examples	`DES-7200(config)# spanning-tree mode stp`

Related commands

Command	Description
show spanning-tree	Show the spanning-tree configuration.

10.1.7 spanning-tree mst configure

Use this command to enter the MST configuration mode in the global configuration mode and configure the MSTP region. Use the **no** form of the command to restore all parameters (name, revision, vlan map) to the default values.

spanning-tree mst configuration

no spanning-tree mst configuration

Default configuration	By default, all VLANs are mapped to the instance 0,*name* is empty, and *revision* is 0.
Command mode	Global configuration mode.
Usage guidelines	To return to the privileged EXEC mode, enter **end** or **Ctrl+C.** To return to the global configuration mode, enter **exit**. After entering the MST configuration mode, you can use the following commands to configure parameters: **instance** *instance-id* **vlan** *vlan-range*: Adds the VLANs to the MST instance. The range of *instance-id* is 0 to 64 and the range of VLAN is 1 to 4095. The *vlan-range* can be a collection of some inconsecutive VLANs separated with comma or some consecutive VLANs in the form of start VLAN number–end VLAN number. For example, **instance 10 vlan 2,3,6-9** means that VLANs 2, 3, 6, 7, 8, 9 are added to instance 10. By default, all VLANs are in Instance0. To remove a VLAN from an instance, use the

no form of the command: **no instance** *instance-id* [**vlan** *vlan-range*]. (In this case, the range of instance is 1 to 64).

name *name*: Specify the MST name, a string of up to 32 characters. You can use the **no name** command to restore it to the default setting.

revision *version*: Set the MST versions in the range 0 to 65535. You can use the **no name** command to restore it the default setting.

Show: Shows the information of the MST region.

Examples

This example shows how to enter the MST configuration mode, and map VLANs 3. 5 to 10 to MST instance 1:

```
DES-7200(config)# spanning-tree mst configuration
DES-7200(config-mst)# instance 1 vlan 3, 5-10
DES-7200(config-mst)# name region 1
DES-7200(config-mst)# revision 1
DES-7200(config-mst)# show
MST configuration
Name [region1]
Revision 1
Instance  Vlans Mapped
----------  --------------------
0       1-2,4,11-4094
1       3,5-10
---------------------------------
DES-7200(config-mst)# exit
DES-7200(config)#
```

To remove VLAN 3 from instance 1, execute this command after entering the MST configuration mode:

```
DES-7200(config-mst)# no instance 1 vlan 3
```

Delete instance 1:

```
DES-7200(config-mst)# no instance 1
```

You can verify your settings by entering the **show** command of the MST configuration commands.

Related commands

Command	Description
show spanning-tree mst	Show the MST region configuration.
instance *instance-id* **vlan** *vlan-range*	Add VLANs to the MST instance.
name	Configure the name of MST.
revision	Configure the version of MST.

	show	Show the MST mode in the MST configuration mode.

10.1.8 spanning-tree mst cost

Use this command to set the path cost of an instance in the interface configuration mode. Use the **no** form of the command to restore it to the default setting.

spanning-tree [**mst** *instance-id*] **cost** *cost*

no spanning-tree [**mst** *instance-id*] *cost*

Parameter description

Parameter	Description
instance-id	Instance ID in the range of 0 to 64
cost	Path cost in the range of 1 to 200,000,000

Default configuration

The default instance-id is 0.

The default value is calculated by the link rate of the interface automatically.

- 1000 Mbps—20000
- 100 Mbps—200000
- 10 Mbps—2000000

Command mode

Interface configuration mode.

Usage guidelines

A higher cost value means a higher path cost.

Examples

This example shows how to set the path cost to 400 on the interface associated with instances 3:

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# spanning-tree mst 3 cost 400
```

You can verify your settings by entering the **show spanning-tree mst interface** *interface-id* command in the privileged EXEC mode.

Related

Command	Description

show spanning-tree mst	Show the MSTP information of an interface.
spanning-tree mst port-priority	Configure the priority of an interface.
spanning-tree mst priority	Configure the priority of an instance.

10.1.9 spanning-tree mst port-priority

Use this command to configure the interface priority for different instances in the interface configuration mode. It will determine which interface of a loop in a region is in charge of forwarding. Use the **no** form of the command to restore it to the default setting.

spanning-tree [**mst** *instance-id*] **port-priority** *priority*

no spanning-tree [**mst** *instance-id*] **port-priority**

Parameter description

Parameter	Description
Instance-id	Instance ID in the range of 0 to 64
priority	Interface priority. Sixteen integers are available: 0, 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, 208, 224, 240, which are the multiples of 16.

Default configuration

The default instance-id is 0.

The default priority is 128.

Command mode

Interface configuration mode.

Usage guidelines

When a loop occurs in the region, the interface of the higher priority will be in charge of forwarding. If all interfaces have the same priority value, the interface of the smaller number will be in charge of the forwarding.

Examples

This example shows how to set the priority of **gigabitethernet 1/1** to 10 in instance 20:

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# spanning-tree mst 20 port-priority 0
```

	You can verify your settings by entering the **show spanning-tree mst** *instance-id* privileged command.

Related commands

Command	Description
show spanning-tree mst	Show the MSTP information of an interface.
spanning-tree mst cost	Set the path cost.
spanning-tree mst priority	Set the device priority for different instances.

10.1.10 spanning-tree mst priority

Use this command to set the device priority for different instances in the global configuration mode. Use the **no** form of the command to restore it to the default setting.

spanning-tree [**mst** *instance-id*] **priority** *priority*

no spanning-tree [**mst** *instance-id*] **priority**

Parameter description

Parameter	Description
instance-id	Instance ID in the range of 0 to 64
priority	Device priority. Sixteen integers are available: 0, 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152,53248, 57344 and 61440, which are all multiples of 4096.

Default configuration	The default instance ID is 0. The default device priority is 32768.
Command mode	Global configuration mode.

Examples	The following example sets the device priority of the Instance as 8192. `DES-7200(config-if)# spanning-tree mst 20 priority 8192` You can verify your settings by entering the **show spanning-tree mst** instance **interface** *instance-id* command in the privileged EXEC mode.

Related commands

Command	Description
show spanning-tree mst	Show the MSTP information of an interface.
spanning-tree mst cost	Set path cost.
spanning-tree mst port-priority	Set the port priority of an instance.

10.1.11 spanning-tree reset

Use this command to restore the **spanning-tree** configuration to the default value. This command does not have the **no** form.

spanning-tree reset

Parameter description	N/A.
Command mode	Global configuration mode.
Examples	`DES-7200(config)# spanning-tree reset`

Related commands

Command	Description
show spanning-tree	Show the global STP configuration.
show spanning-tree interface	Show the STP configuration of the interface.

10.1.12 spanning-tree tx-hold-count

Use this command to configure the TxHoldCount of the STP in the global configuraiton mode, the maximum number of the BPDU messages sent in one second. Use the **no** form of the command to restore it to the default setting.

spanning-tree tx-hold-count *tx-hold-count*

no spanning-tree tx-hold-count

Parameter description

Parameter	Description
tx-hold-count	Maximum number of the BPDU messages sent in one second in the range 1 to 10.

Default configuration The default value is 3.

Command mode Global configuration mode.

Examples

```
DES-7200(config)# spanning-tree tx-hold-count 5
```

Related commands

Command	Description
show spanning-tree	Show the global MSTP configuration.

10.1.13 spanning-tree pathcost method

Use this command to configure the path cost of the port. Use the **no** form of the command to restore it to the default setting.

spanning-tree pathcost method [**long [standard]** | **short**]

no spanning-tree pathcost method

Parameter description

Parameter	Description
Long [standard]	Adopt the 802.1t standard to configure path cost. The standard indicates that use the expression recommended by the standard to calculate the cost value.
short	Adopt the 802.1d standard to configure path cost.

Default configuration Adopt the 802.1T standard to set path cost by default.

Command mode	Global configuration mode.

Examples

```
DES-7200(config-if)# spanning-tree pathcost method long
```

Related commands

Command	Description
show spanning-tree interface	Show the STP configuration of the interface.

10.1.14 spanning-tree portfast

Use this command to enable the portfast on the interface. You can use the **disabled** option of this command to disable the portfast feature on the interface.

spanning-tree portfast [**disabled**]

Parameter description

Parameter	Description
disabled	Disable the portfast on the interface.

Default configuration	Disabled.
Command mode	Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitethernet 1/1
DES-7200(config-if)# spanning-tree portfast
```

Related commands

Command	Description
show spanning-tree interface	Show the STP configuration of the interface.

10.1.15 spanning-tree portfast bpduguard default

Use this command to enable the GPDU guard globally. You can use the **no** form of the command to disable the BPDU guard.

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

Parameter description	N/A.
Default configuration	Disabled.
Command mode	Global configuration mode.
Usage guidelines	Once the BPDU guard is enabled on the interface, it will enter the error-disabled status if the BPDU message arrives at the interface. Use the **show spanning-tree** command to display the configuration.
Examples	`DES-7200(config)# spanning-tree portfast bpduguard default`

Related commands

Command	Description
show spanning-tree interface	Show the global STP configuration.

10.1.16 spanning-tree portfast bpdufilter default

Use this command to enable the BPDU filter function globally. You can use the **no** form of the command to disable the BPDU filter.

spanning-tree portfast bpdufilter default

no spanning-tree portfast bpdufilter default

Parameter description	N/A.
Default configuration	Disabled.
Command mode	Global configuration mode.

Usage guidelines	Once the BPDU filter is enabled, the BPDU message is neither received nor sent on the interface. Use the **show spanning-tree** command to display the configuration.
Examples	`DES-7200(config)# spanning-tree portfast bpdufilter default`

Related commands

Command	Description
show spanning-tree interface	Show the global STP configuration.

10.1.17 spanning-tree portfast default

Use this command to enable the portfast feature on all interfaces globally. Use the **no** form of the command to disable the portfast on all interfaces globally.

spanning-tree portfast default

no spanning-tree portfast default

Parameter description	N/A.
Default configuration	Disabled.
Command mode	Global configuration mode.
Examples	`DES-7200(config)# spanning-tree portfast default`

Related commands

Command	Description
show spanning-tree interface	Show the global STP configuration.

10.1.18 spanning-tree tc-protection

Use this command to enable **tc-protection** globally. Use The **no** form of this command to disable **tc- protection** globally.

spanning-tree tc- protection

no spanning-tree tc- protection

Parameter description	N/A.
Default configuration	Enabled.
Command mode	Global configuration mode.
Examples	`DES-7200(config)# spanning-tree tc-protection`

10.1.19 spanning-tree tc-protection tc-guard

Use this command to enable **tc-guard** globally to prevent the spread of TC messages. Use the **no** form of this command to disable **tc-guard** globally.

spanning-tree tc- protection tc-guard

no spanning-tree tc- protection tc-guard

Parameter description	N/A.
Default configuration	Disabled.
Command mode	Global configuration mode.
Examples	`DES-7200(config)# spanning-tree tc- protection tc-guard`

10.1.20 spanning-tree tc-guard

Use this command to enable **tc-guard** on the interface to prevent the spread of TC messages. Use the **no** form of this command to disable **tc-guard** on the interface.

spanning-tree tc-guard

no spanning-tree tc-guard

Parameter description	N/A.

Default configuration	Disabled.
Command mode	Global configuration mode.
Examples	`DES-7200(config)# spanning-tree tc-guard`

10.1.21 spanning-tree ignore tc

Use this command to turn on the tc filtering switch on the interface. Use the **no** form of this command to turn off the tc filtering switch on the interface. With tc filtering enabled, the TC packets received on the interface will not be processed.

spanning-tree ignore tc

no spanning-tree ignore tc

Parameter description	N/A.
Default configuration	By default, the TC filtering function is enabled.
Command mode	Interface configuration mode.
Examples	`DES-7200(config-if)# spanning-tree ignore tc`

10.1.22 spanning-tree guard root

Use this command to enable **root guard** on the interface to prevent the change of current root bridge position because of error configuration and illegal packet attack. Use the **no** form of this command to disable **root guard** on the interface.

spanning-tree guard root

no spanning-tree guard root

Parameter description	N/A.

Default configuration	Disabled.
Command mode	Interface configuration mode.
Examples	`DES-7200(config)# spanning-tree guard root`

10.1.23 spanning-tree loopguard default

Use this command to enable **loop guard** globally to prevent the root port or backup port from generating loop since they can not receive bpdu. Use the **no** form of this command to disable **loop guard**.

spanning-tree loopguard default

no spanning-tree loopguard default

Parameter description	N/A.
Default configuration	Disabled.
Command mode	Global configuration mode.
Examples	`DES-7200(config)# spanning-tree loopguard default`

10.1.24 spanning-tree guard loop

Use this command to enable **loop guard** on the interface to prevent the root port or backup port from generating loop since they can not receive bpdu. Use the **no** form of this command to disable **loop guard**.

spanning-tree guard loop

no spanning-tree guard loop

Parameter description	N/A.

Default configuration	Disabled.
Command mode	Interface configuration mode.
Examples	`DES-7200(config)# spanning-tree guard loop`

10.1.25 spanning-tree guard none

Use this command to disable **guard** on the interface. Use the **no** form of this command to delete **guard** on the interface.

spanning-tree guard none

no spanning-tree guard none

Parameter description	N/A.
Default configuration	Disabled.
Command mode	Interface configuration mode.
Examples	`DES-7200(config)# spanning-tree guard none`

10.1.26 spanning-tree autoedge

Use this command to enable Autoedge on the interface. Use the **disabled** option of this command to disable Autoedge on the interface.

spanning-tree autoedge [**disabled**]

Parameter description	The **disabled** parameter is used to disable **Autoedge** on the interface.
Default configuration	Enabled.

Command mode	Interface configuration mode.
Examples	`DES-7200(config)# interface gigabitethernet 1/1` `DES-7200(config-if)# spanning-tree autoedge disabled`

Related commands

Command	Function
show spanning-tree interface	Show the STP configuration information of the interface.

10.1.27 bpdu src-mac-check

Use this command to enable the BPDU source MAC address check function on the interface. Use the **no** form of this command to disable the function.

bpdu src-mac-check *H.H.H*

no bpdu src-mac-check

Parameter description

Parameter	Description
H.H.H	Indicate that only the BPDU messages from this MAC address are received.
no	Indicate that the BPDU messages from any MAC address are received.

Default configuration	Disabled.
Command mode	Interface configuration mode.
Examples	`DES-7200(config)# interface gigabitethernet 1/1` `DES-7200(config-if)# bpdu src-mac-check 00d0.f800.1e2f`

10.1.28 clear spanning-tree detected-protocols

Use this command to force the interface to send the RSTP BPDU message and check the BPDU messages.

clear spanning-tree detected-protocols [**interface** *interface-id*]

Parameter description

Parameter	Description
interface-id	ID of the interface

Default configuration N/A.

Command mode Privileged configuration mode.

Examples

```
DES-7200# clear spanning-tree detected-protocols
```

Related commands

Command	Description
show spanning-tree interface	Show the STP configuration of the interface.

10.1.29 spanning-tree compatible enable

Use this command to send the message selectively carried with MSTI according to the interface attibute of current port to realize interconnection with other vendors.

spanning-tree compatible enable

no spanning-tree compatible enable

Parameter description N/A.

Default configuration Disabled.

Command mode Interface configuration mode.

Examples

```
DES-7200(config)# spanning-tree compatible enable
```

10.2 Showing Related Command

10.2.1 show spanning-tree

Use this command to display the global spanning-tree configurations.

show spanning-tree [**summary** |**forward-time** | **hello-time** | **max-age** | **inconsistentports | tx-hold-count** | **pathcost** *method* | *max_hops*]

Parameter description

Parameter	Description
summary	Show the information of MSTP instances and forwarding status of the interfaces.
inconsistentports	Show the block port due to root guard or loop guard.
forward-time	Show BridgeForwardDelay.
hello-time	Show BridgeHelloTime.
max-age	Show BridgeMaxAge.
max-hops	Show the maximum hops of an instance.
tx-hold-count	Show TxHoldCount.
pathcost *method*	Show the method used for calculating path cost.

Command mode

Privileged EXEC mode.

Examples

```
DES-7200# show spanning-tree hello-time
```

Related commands

Command	Description
spanning-tree pathcost method	Set the pathcost method.
spanning-tree forward-time	Set BridgeForwardDelay.
spanning-tree hello-time	Set BridgeHelloTime.
spanning-tree max-age	Set BridgeMaxAge.
spanning-tree max-hops	Set the maximum hops of an instance.

	spanning-tree tx-hold-count	Show TxHoldCount.

10.2.2 show spanning-tree interface

Use this command to show the STP configuration of the interface, including the optional spanning tree.

show spanning-tree interface *interface-id* [{**bpdufilter** | **portfast** | **bpduguard** | **link-type** }]

Parameter description

Parameter	Description
interface-id	Interface ID
bpdufilter	Show the status of BPDU filter.
portfast	Show the status of portfast.
bpduguard	Show the status of BPDU guard.
link-type	Show the link type of an interface.

Command mode

Privileged EXEC mode.

Examples

```
DES-7200# show spanning-tree interface gigabitethernet 1/5
```

Related commands

Command	Description
spanning-tree bpdufilter	Enable the BPDU filter feature someone the interface.
spanning-tree portfast	Enable the portfast on the interface.
spanning-tree bpduguard	Enable the BPDU guard on the interface.
spanning-tree link-type	Set the link type of the interface to point-to-point.

10.2.3 show spanning-tree mst

In privileged EXEC mode, use this command to display the information of MST and instances.

show spanning-tree mst {**configuration** |*instance-id* [**interface** *interface-id*] }

Parameter description

Parameter	Description
configuration	The MST configuration of the

	equipment.
instance-id	Instance number
interface-id	Interface number

Default configuration

All the instances are displayed by default.

Command mode

Privileged mode.

Examples

```
DES-7200# show spanning-tree mst configuration
```

Related commands

Command	Description
spanning-tree mst configuration	Configure the MST region.
spanning-tree mst cost	Show the path cost of the instance.
spanning-tree mst max-hops	Show the maximum hops of the instance.
spanning-tree mst priority	Show the equipment priority of the instance.
spanning-tree mst port-priority	Show the port priority of the instance.

11 GVRP Configuration Commands

11.1 Configuration Related Command

11.1.1 gvrp applicant state

Use this command to set the port advertising mode, which determines whether to allow sending the GVRP advertisement on the port. Use the **no** form of this command to restore it to the default setting.

gvrp applicant state {**normal** | **non-applicant**}

no gvrp applicant state

Parameter description

Parameter	Description
-	-

Default Allow sending the GVRP advertisement on the port.

Command mode Interface configuration mode.

Usage guidelines Use the **show gvrp configuration** to show the related configurations.

Examples

```
DES-7200(config-if)# gvrp applicant state normal
```

Related commands

Command	Description
show gvrp configuration	Show the GVRP configurations.

11.1.2 gvrp dynamic-vlan-creation

Use this command to control whether to allow creating the vlan dynamically. Use the **no** form of this command to restore it to the default setting. .

gvrp dynamic-vlan-creation enable

no gvrp dynamic-vlan-creation enable

Parameter description

Parameter	Description
-	-

Default Creating the vlan dynamically is not allowed.

Command mode Global configuration mode.

Usage guidelines Use the **show gvrp configuration** to show the related configurations.

Examples

```
DES-7200(config)# gvrp dynamic-vlan-creation enable
```

Related commands

Command	Description
show gvrp configuration	Show the GVRP configurations.

11.1.3 gvrp enable

Use this command to enable the GVRP function. Use the **no** form of this command to restore it to the default setting.

gvrp enable

no gvrp enable

Parameter description

Parameter	Description
-	-

Default Disabled.

Command mode Global configuration mode.

Usage guidelines	Use the **show gvrp configuration** to show the related configurations.
Examples	`DES-7200(config)#gvrp enable`

Related commands

Command	Description
show gvrp configuration	Show the GVRP configurations.

11.1.4 gvrp registration mode

Use this command to set the registration mode to control whether to allow creating/registering/canceling the vlan dynamically on the port. Use the **no** form of this command to restore it to the default setting.

gvrp registration mode {**normal** | **disabled**}

no gvrp registration mode

Parameter description

Parameter	Description
-	-

Default	Creating/registering/canceling the vlan dynamically is allowed.
Command mode	Interface configuration mode.
Usage guidelines	Use the **show gvrp configuration** to show the related configurations.
Examples	`DES-7200(config-if)# gvrp registration mode normal`

Related commands

Command	Description
show gvrp configuration	Show the GVRP configurations.

11.1.5 gvrp timer

Use this command to set the GVRP timer. Use the **no** form of this command to restore it to the default setting.

gvrp timer {**join** | **leave** | **leaveall**} *timer_value*

no gvrp timer

Parameter description

Parameter	Description
join *timer_value*	Control the maximum delay before sending the advertisement on the port. The actual sending interval is in the range of 0 to the maximum delay.
leave *timer_value*	Control the waiting time before removing the VLAN from the port with the Leave Message received. If the Join Message is received again within this time range, the port-VLAN relation is still exist and the timer becomes invalid. If no Join Message is received on the port, the port status will be the Empty and removed from the VLAN member list.
leave all *timer_value*	Control the minimum interval of sending the LeaveAll Message on the port. If the LeaveAll Message is received before the timer expires, the timer re-counts. If the timer expires, send the LeaveAll Message on the port and also send this Message to the port, so that the Leave timer begins counting. The actual sending interval is ranging from leaveall to leaveall+join.

Default

Join timer: 200ms;
Leave timer: 600ms;
Leaveall timer: 10000ms.

Command mode

Global configuration mode.

Usage guidelines	Use the **show gvrp configuration** to show the related configurations.
Examples	`DES-7200(config)# gvrp timer join 200`

Related commands

Command	Description
show gvrp configuration	Show the GVRP configurations.

11.2 Showing Related Commands

11.2.1 clear gvrp statistic

Use this command to clear the GVRP statistics for re-counting.

clear gvrp statistics { *interface-id* | **all**}

Parameter description

Parameter	Description
interface-id	Interface id.

Default	NA
Command mode	Privileged mode.
Usage guidelines	Use the **show gvrp statistics** to show the statistics.
Examples	`DES-7200# clear gvrp statistics all`

Related commands

Command	Description
show gvrp statistics	Show the GVRP statistics.

11.2.2 show gvrp configuration

Use this command to show the GVRP configurations.

show gvrp configuration

Parameter description

Parameter	Description
-	-

Default

NA

Command mode

Privileged mode.

Usage guidelines

Use the **show gvrp configuration** to show the related configurations.

Examples

```
DES-7200# show gvrp configuration
Global GVRP Configuration:
GVRP Feature:enabled
GVRP dynamic VLAN creation:enabled
Join Timers(ms):200
Join Timers(ms):600
Join Timers(ms):10000
Port based GVRP Configuration:
Port:GigabitEthernet 3/1 app mode:normal reg mode:normal
Port:GigabitEthernet 3/2 app mode:normal reg mode:normal
Port:GigabitEthernet 3/3 app mode:normal reg mode:normal
Port:GigabitEthernet 3/4 app mode:normal reg mode:normal
Port:GigabitEthernet 3/5 app mode:normal reg mode:normal
Port:GigabitEthernet 3/6 app mode:normal reg mode:normal
Port:GigabitEthernet 3/7 app mode:normal reg mode:normal
Port:GigabitEthernet 3/8 app mode:normal reg mode:normal
Port:GigabitEthernet 3/9 app mode:normal reg mode:normal
Port:GigabitEthernet 3/10 app mode:normal reg
mode:normal
Port:GigabitEthernet 3/11 app mode:normal reg
mode:normal
Port:GigabitEthernet 3/12 app mode:normal reg
mode:normal
```

Related

Command	Description

	-	-

11.2.3 show gvrp statistics

Use this command to show the GVRP statistics of one interface or all interfaces.

show gvrp statistics {*interface-id* | **all**}

Parameter description

Parameter	Description
interface-id	Interface id.

Default NA

Command mode Privileged mode.

Usage guidelines Use the **show gvrp statistics** to show the statistics of one interface or all interfaces.

Examples

```
DES-7200# show gvrp statistics gigabitethernet 1/1
Interface      GigabitEthernet 3/1
RecValidGvrpPdu        0
RecInvalidGvrpPdu      0
RecJoinEmpty    0
RecJoinIn      0
RecEmpty       0
RecLeaveEmpty   0
RecLeaveIn     0
RecLeaveAll    0
SentGvrpPdu    0
SentJoinEmpty   0
SentJoinIn     0
SentEmpty      0
SentLeaveEmpty  0
SentLeaveIn    0
SentLeaveAll   0
JoinIndicated   0
LeaveIndicated  0
JoinPropagated  0
```

```
LeavePropagated  0
```

Related commands

Command	Description
clear gvrp statistics	Clear the statistics of one interface or all interfaces.

11.2.4 show gvrp status

Use this command to show the GVRP status.

show gvrp status

Parameter description

Parameter	Description
-	-

Default NA

Command mode Privileged mode.

Usage guidelines Use the **show gvrp status** command to show the GVRP status.

Examples

```
DES-7200# show gvrp status
```

Related commands

Command	Description
-	-

12 QinQ Configuration Commands

12.1 Configuration Related Commands

12.1.1 dot1q outer-vid *vid* register inner-vid *v_list*

Use this command to configure the add policy list of outer vid based on protocol on tunnel port.

dot1q outer-vid *vid* **register inner-vid** *v_list*

no dot1q outer-vid *vid* **register inner-vid** *v_list*

Parameter description

Parameter	Description
v_list	Inner vlan id list
vid	Outer vlan id list
no	Remove the settings.

Default configuration

N/A.

Command mode

Interface configuration mode.

Examples

Here is an example of configuring vid in the tag of input message as 4-22,adding the vid in the tag as 3:

```
DES-7200#configure
DES-7200(config)#interface gigabitEthernet 0/1
DES-7200(config-if)#switchport mode dot1q-tunnel
DES-7200(config-if)#dot1q outer-vid 3 register inner-vid
4-22
DES-7200(config-if)#end
```

Related

Command	Description

	show registration-table [**interface** *intf-id*]	

Platform description	The software version must be firmware v10.3 and later.

12.1.2 dot1q relay-vid *vid* translate local-vid *v-list*

Use this command to configure the modify policy list of outer vid based on protocol on access，trunk，hybrid port.

dot1q relay-vid *vid* **translate local-vid** *v-list*

no dot1q relay-vid *vid* **translate local-vid** *v-list*

Parameter description

Parameter	Description
v_list	Outer vlan list of input message
vid	Modified outer vlan id list
no	Remove the settings.

Default configuration	Null policy list.

Command mode	Interface configuration mode.

Examples

Here is an example of configuring vid in the outer tag of input message as 10-20,modifying the vid as 100:

```
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode access
DES-7200(config-if)# dot1q relay-vid 100 translate
local-vid 10-20
DES-7200(config-if)# end
```

Related commands

Command	Description
show translation-table [**interface** *intf-id*]	

Platform description	The software version must be firmware v10.3 and later.

12.1.3 dot1q relay-vid *vid* translate inner-vid *v-list*

Use this command to configure the modify policy list of outer vid based on protocol on access，trunk，hybrid port.

dot1q relay-vid *vid* **translate inner-vid** *v-list*

no dot1q relay-vid *vid* **translate inner-vid** *v-list*

Parameter description

Parameter	Description
v_list	Outer vlan list of input message
vid	Modified outer vlan id list
no	Remove the settings.

Default configuration	Null policy list.
Command mode	Interface configuration mode.

Examples

Here is an example of configuring vid in the outer tag of input message as 10-20,modifying the vid as 100:

```
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode access
DES-7200(config-if)#  dot1q  relay-vid  100  translate
inner-vid 10-20
DES-7200(config-if)# end
```

Related commands

Command	Description
show translation-table [**interface** *intf-id*]	

Platform description	The software version must be firmware v10.4 and later.

12.1.4 dot1q new-outer-vlan vid translate old-outer-vlan vid inner-vlan v-list

Use this command to modify the policy list of outer vid based on the inner Tag VID and outer Tag VID on the access, trunk, hybrid, uplink port.

dot1q new-outer-vlan *vid* **translate old-outer-vlan** *vid* **inner-vlan** ***v-list***

no dot1q new-outer-vlan *vid* **translate old-outer-vlan** *vid* **inner-vlan** *v-list*

Parameter description

Parameter	Description
v_list	Vid list of the
vid	Vid of outer tag.
no	Remove the setting.

Default configuration

Null policy list.

Command mode

Interface configuration mode.

Usage guideline

N/A.

Examples

The following example modifies the vid to 3888 when the input packets inner tag vid

```
DES-7200(config)# vlan 1888, 3888
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode trunk
DES-7200(config-if)# dot1q new-outer-vlan 3888 translate old-outer-vlan 1888 inner-vlan 2001-3000
DES-7200(config-if)# end
```

Related commands

Command	Description
show translate-table [**interface** *intf-id*]	

Platform description

The software version must be firmware v10.4 and later.

12.1.5 dot1q-tunnel cos inner-cos-value remark-cos outer-cos-value

Use this command to map the priority from the outer tag to the inner tag for the packets on the interface.

dot1q-tunnel cos *inner-cos-value* **remark-cos** *outer-cos-value*

no dot1q-tunnel cos *inner-cos-value* **remark-cos** *outer-cos-value*

Parameter description

Parameter	Description
no	Cancel the priority mapping of the packets on the interface.

Default configuration

N/A.

Command mode

Interface configuration mode.

Usage guideline

N/A.

Examples

Here is an example of configuring the priority mapping from the outer tag to the inner tag:

```
DES-7200# configure
DES-7200(config)# interface gigabitEthernet 0/2
DES-7200(config-if)# dot1q-tunnel cos 3 remark-cos 5
DES-7200(config-if)# end
```

Related commands

Command	Description
show interface intf-name remark	

Platform description

The software version must be firmware v10.4 and later.

12.1.6 frame-tag tpid *tpid*

Use this command to set the manufacturer tpid.

frame-tag tpid <*tpid*>

no frame-tag tpid

Parameter description

Parameter	Description
no	Remove the setting.

Command mode

Interface configuration mode.

Examples

```
DES-7200(config)# interface g0/3
DES-7200(config-if)# frame-tag tpid 0x9100
DES-7200(config-if)# end
DES-7200# show frame-tag tpid
Port    tpid
------  ---------
Gi0/3     0x9100
```

Related commands

Command	Description
show frame-tag tpid	

Platform description

The software version must be firmware v10.1 and later.

12.1.7 inner-priority-trust enable

Use this command to copy the priority of the inner tag to the outer tag of the packets on the interface.

inner-priority-trust enable

no inner-priority-trust enable

Parameter description

Parameter	Description
no	Remove the settings.

Command mode

Interface configuration mode.

Examples

```
DES-7200(config)# interface gigabitEthernet 0/2
DES-7200(config-if)# inner-priority-trust enable
```

Related commands

Command	Description
show inner-priority-trust	

Platform description The software version is firmware v10.1 and later.

12.1.8 mac-address-mapping x source-vlan src-vlan-list destination-vlan dst-vlan-id

Use this command to copy the MAC address dynamically-learned from the source VLAN to the destination VLAN.

mac-address-mapping *x* **destination-vlan** *dst-vlan-id* **source-vlan** *src-vlan-list*

no mac-address-mapping *x* **destination-vlan** *dst-vlan-id* **source-vlan** *src-vlan-list*

Parameter description

Parameter	Description
no	Cancel to copy the MAC address dynamically-learned from the source VLAN to the destination VLAN.

Command mode Interface configuration mode.

Examples

```
DES-7200#configure
DES-7200(config)# interface gigabitEthernet 0/2
DES-7200(config-if)# mac-address-mapping 1 destination-vlan 5 source-vlan 1-3
DES-7200(config-if)#end
```

Related commands

Command	Description
show interface mac-address-mapping x	

Platform description The software version is firmware v10.4 and later.

12.1.9 switchport mode dot1q-tunnel

Use this command to configure the interface as the dot1q-tunnel interface.

switchport mode dot1q-tunnel

no switchport mode

Parameter description

Parameter	Description
no	Delete the corresponding dot1q-tunnel interface configuration.

Default configuration

No dot1q-tunnel interface is configured.

Command mode

Interface configuration mode.

Examples

Here is an example of configuring the interface as the dot1q-tunnel interface:

```
DES-7200(config)# interface gi 0/1
DES-7200(config-if)# switchport access vlan 22
DES-7200(config-if)# switchport mode dot1q-tunnel
DES-7200(config)# end
```

Related commands

Command	Description
show vlan	

Platform description

The software version must be firmware v10.1 and later.

12.1.10 switchport mode uplink

Use this command to configure the interface as a uplink port.

switchport mode uplink

no switchport mode

Parameter description

Parameter	Description
no	Remove the settings.

Default configuration	No uplink port is configured.
Command mode	Interface configuration mode.

Examples	Here is an example of configuring the interface as a uplink port.
	`DES-7200(config)# interface gigabitEthernet 0/1`
	`DES-7200(config-if)# switchport mode up-link`
	`DES-7200(config)# end`

Related commands

Command	Description
show vlan	

Platform description	The software version must be firmware v10.1 and later.

12.1.11 switchport dot1q-tunnel allowed vlan

Use this command to configure the allowed VLAN of dot1q-tunnel.

switchport dot1q-tunnel allowed vlan [**add**] {**tagged|untagged**} *v_list*

switchport dot1q-tunnel allowed vlan remove *v_list*

no switchport dot1q-tunnel allowed vlan

Parameter description

Parameter	Description
tagged	Tag-carried.
untagged	Not tag-carried.
v_list	vlan id list.
no	Remove the settings.

Default configuration	Allowed vlan 1，untagged.
Command mode	Interface configuration mode.
Examples	Here is an example of configuring vlan 3-6 of dot1q-tunnel

port as allowed VLAN and outputting the frame with tag:

```
DES-7200(config)#interface gigabitEthernet 0/1
DES-7200(config-if)#switchport dot1q-tunnel allowed vlan tagged 3-6
DES-7200(config)#end
```

Related commands

Command	Description
show interface dot1q-tunnel	

Platform description

The software version must be firmware v10.3 and later.

12.1.12 switchport dot1q-tunnel native vlan

Use this command to configure the default vlan id of dot1q-tunnel.

switchport dot1q-tunnel native vlan *vid*

no switchport dot1q-tunnel native vlan

Parameter description

Parameter	Description
vid	Configure default vlan id.
no	Configure default vlan as 1.

Default configuration

Vlan 1

Command mode

Interface configuration mode.

Examples

Here is an example of configuring default vlan of dot1q-tunnel port as 8:

```
DES-7200(config)#interface gigabitEthernet 0/1
DES-7200(config-if)#switchport dot1q-tunnel native vlan 8
DES-7200(config)#end
```

Related

Command	Description

	show interface dot1q-tunnel	

Platform description	The software version must be firmware v10.3 and later.

12.1.13 traffic-redirect access-group acl outer-vlan

Use this command to configure the modify policy list of outer vid based on flow on access，trunk，hybrid port.

traffic-redirect access-group *acl* **outer-vlan** *vid* **in**

no traffic-redirect access-group *acl* **outer-vlan**

Parameter description

Parameter	Description
acl	Flow matching.
vid	Modified outer vid list
no	Remove the settings.

Default configuration	Null policy list.
Command mode	Interface configuration mode.

Examples

Here is an example of configuring outer vid of input message whose source address is 1.1.1.1 as 3:

```
DES-7200# configure
DES-7200(config)#ip access-list standard 2
DES-7200(config-std-nacl)# permit host 1.1.1.1
DES-7200(config-std-nacl)# exit
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode trunk
DES-7200(config-if)# traffic-redirect access-group 2
outer-vlan 3 in
DES-7200(config-if)# end
```

Related

Command	Description

	show traffic-redirect	

Platform description	The software version must be firmware v10.3 and later.

12.1.14 traffic-redirect access-group *acl* inner-vlan

Use this command to configure the modification policy of inner vid based on flow for the packets outputted from the access，trunk，hybrid port.

traffic-redirect access-group *acl* **inner-vlan** *vid* **out**

no traffic-redirect access-group *acl* **inner-vlan**

Parameter description

Parameter	Description
acl	Flow matching.
vid	Modified inner vid
no	Remove the settings.

Default configuration	None

Command mode	Interface configuration mode.

Examples

Here is an example of configuring the outer vid of outgoing messages whose source address is 1.1.1.2 as 6:

```
DES-7200#configure
DES-7200(config)#ip access-list standard to_6
DES-7200(config-std-nacl)#permit host 1.1.1.2
DES-7200(config-std-nacl)#exit
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode trunk
DES-7200(config-if)# traffic-redirect access-group to_6
inner-vlan 6 out
DES-7200(config-if)# end
```

Related commands

Command	Description
show traffic-redirect	

Platform description	The software version must be firmware v10.3 and later.

12.1.15 traffic-redirect access-group acl nested-vlan

Use this command to configure vid add policy list based on flow on dot1q-tunne port.

traffic-redirect access-group *acl* **nested-vlan** *vid* **in**

no traffic-redirect access-group *acl* **nested –vlan**

Parameter description

Parameter	Description
acl	Flow matching.
vid	vid list to be added.
no	Remove the settings.

Default configuration	Null policy list.
Command mode	Interface configuration mode.

Examples

Here is an example of adding the vid of input message whose source address is 1.1.1.3 as 9:

```
DES-7200#configure
DES-7200(config)#ip access-list standard 20
DES-7200(config-std-nacl)#permit host 1.1.1.3
DES-7200(config-std-nacl)#exit
DES-7200(config)# interface gigabitEthernet 0/1
DES-7200(config-if)# switchport mode dot1q-tunnel
DES-7200(config-if)# traffic-redirect access-group 20
nested-vlan 10 in
DES-7200(config-if)# end
```

Related commands

Command	Description
show traffic-redirect	

Platform description	The software version must be firmware v10.1 and later.

12.1.16 l2protocol-tunnel

Use this command to set the dot1q-tunnel port to receive L2 protocol message.

l2protocol-tunnel {**stp | gvrp**}

no l2protocol-tunnel {**stp | gvrp**}

Parameter description

Parameter	Description
stp	Receive stp message.
gvrp	Receive gvrp message.
no	Remove the settings.

Command mode

Global configuration mode.

Examples

Here is an example of enabling the function of receiving L2 protocol gvrp and stp:

```
DES-7200#configure
DES-7200(config)# l2protocol-tunnel stp
DES-7200(config)# l2protocol-tunnel gvrp
DES-7200(config)#end
```

Related commands

Command	Description
show l2protocol-tunnel { gvrp | stp }	

Platform description

The software version must be firmware v10.3 and later.

12.1.17 l2protocol-tunnel *proto-type* enable

Use this command to enable transparent transmission of L2 protocol message.

l2protocol-tunnel {stp | gvrp} enable

no l2protocol-tunnel {stp | gvrp} enable

Parameter description

Parameter	Description
stp	Transparently transmit stp message.

gvrp	Transparently transmit gvrp message.
no	Remove the settings.

Command mode Intereface configuration mode.

Examples Here is an example of enabling transparent transmission of L2 protocol message ：

```
DES-7200#configure
DES-7200(config)# interface fa 0/1
DES-7200(config-if)# l2protocol-tunnel gvrp enable
DES-7200(config-if)#end
```

Related commands

Command	Description
show l2protocol-tunnel {gvrp|stp}	

Platform description The software version must be firmware v10.3 and later.

12.1.18 l2protocol-tunnel *proto-type* tunnel-dmac *mac-address*

Use this command to set the MAC address for the transparent transmission of the corresponding protocol messages.

l2protocol-tunnel { **stp|gvrp** } **tunnel-dmac mac-address**

no l2protocol-tunnel { **stp**|**gvrp** } **tunnel-dmac mac-address**

Parameter description

Parameter	Description
stp	Set the STP transparent transmission address.
gvrp	Set the GVRP transparent transmission address.
no	Restore the transparent transimission address to the default value.

Command Global configuration mode.

mode

Examples

Here is an example of setting the MAC address for the L2-protocol transparent transmission function:

```
DES-7200(config-if)# l2protocol-tunnel gvrp tunnel-dmac 011AA9 000005
DES-7200(config-if)#end
```

Related commands

Command	Description
show l2protocol-tunnel {gvrp|stp}	

Platform description

The software version must be firmware v10.4 and later.

12.2 Showing Commands

12.2.1 show dot1q-tunnel

Use this command to show whether dot1q-tunnel of interface is enabled or not.

show dot1q-tunnel [**interface** *intf-id*]

Parameter description

Parameter	Description
intf-id	The specified interface.

Default configuration

N/A.

Command mode

Privileged mode.

Examples

```
DES-7200# show dot1q-tunnel
Ports   Dot1q-tunnel
-----   ---------
Gi0/1     Enable
```

Platform description

The software version must be firmware v10.3 and later.

12.2.2 show frame-tag tpid

Use this command to show the configuration of interface tpid.

show frame-tag tpid [**interface <***intf-id***>**]

Parameter description

Parameter	Description
intf-id	Specific Interface

Default configuration

The tpid is not modified.

Command mode

Privileged mode.

Examples

```
DES-7200# show frame-tag tpid
Ports    tpid
-----  ---------
Gi0/1     0x9100
```

Platform description

The software version must be firmware v10.1 and later.

12.2.3 show inner-priority-trust

Use this command to show the priority copy configuration.

show inner-priority-trust

Parameter description

N/A.

Default configuration

Priority copy is disabled by default.

Command mode

Privileged mode.

Examples

```
DES-7200# show inner-priority-trust
Port     inner-priority-trust
----    ----------
Gi0/1     enable
```

Platform description	The software version must be firmware v10.1 and later.

12.2.4 show interface dot1q-tunnel

Use this command to show dot1q-tunnel configuration.

show interface [*intf-id*] **dot1q-tunnel**

Parameter description

Parameter	Description
intf-id	The specified interface.

Default configuration	N/A.
Command mode	Privileged mode.

Examples

```
DES-7200# show interface dot1q-tunnel
Interface: Gi0/3
Native vlan: 10
Allowed vlan list: 4-6，10，30-60
Tagged vlan list: 4，6，30-60
```

Platform description	The software version must be firmware v10.3 and later.

12.2.5 show interface intf-name remark

Use this command to show the priority mapping configurations.

show interface intf-name remark

Parameter description

Parameter	Description
-	-

Default configuration	N/A.
Command mode	Privileged mode.

Examples

```
DES-7200# show interface intf-name remark
Ports        Type        From value  To value
------------ ----------- ----------- --------
Gi0/1        Cos-To-Cos  3           5
```

Platform description The software version must be firmware v10.1 and later.

12.2.6 show interface mac-address-mapping x

Use this command to show the mac address mapping configurations.

show interface mac-address-mapping x

Parameter description

Parameter	Description
-	-

Default configuration N/A.

Command mode Privileged mode.

Examples

```
DES-7200# show mac-address-mapping 1
Ports        Destination-VID  Source-VID-list
------------ ---------------- ---------------
Gi0/1        5                1-3
```

Platform description The software version must be firmware v10.1 and later.

12.2.7 show registration-table

Use this command to show vid add policy list of prorocol-based dot1q-tunnel port.

show registration-table [**interface** *intf-id*]

Parameter description

Parameter	Description
intf-id	Specific Interface

Default configuration

Null policy list.

Command mode

Privileged mode.

Examples

```
DES-7200# show registration-table
Ports        Outer-VID  Inner-VID-list
------------ ---------- -----------------
Gi0/7        5          7-10,15,20-30
```

Platform description

The software version must be firmware v10.3 and later.

12.2.8 show traffic-redirect

Use this command to show flow-based vid change or add policy list.

show traffic-redirect [**interface** *intf-id*]

Parameter description

Parameter	Description
intf-id	Specific Interface

Default configuration

Null policy list.

Command mode

Privileged mode.

Examples

```
DES-7200# show traffic-redirect
Ports           Type          VID   Match-filter
------------ ----------- ---- ------------
Gi0/3        Mod-outer   23   11
Gi0/3        Mod-outer   3    4
Gi0/3        Mod-outer   6    5
Gi0/3        Mod-inner   8    inner-to-8
Gi0/6        Mod-inner   9    100
```

```
Gi0/7        Nested-vid   13   nest-13
```

Platform description	The software version must be firmware v10.3 and later.

12.2.9 show translation-table

Use this command to show vid modify policy list of prorocol-based access, trunk, hybrid port.

show translation-table [**interface** *intf-id*]

Parameter description

Parameter	Description
intf-id	Specific Interface

Default configuration	Null policy list.
Command mode	Privileged mode.

Examples

```
DES-7200# show translation-table
Ports        Relay-VID  Local-VID-list
------------ ---------- ------------------
Gi0/8        10         8-9,15,20-30
```

Platform description	The software version must be firmware v10.3 and later.

12.2.10 show l2protocol-tunnel

Use this command to show transparent transmission configuration of L2 protocol.

show l2protocol-tunnel { **gvrp | stp** }

Parameter description

Parameter	Description
gvrp	Show configuration of transparently transmitting gvrp protocol.
stp	Show configuration of transparently

		transmitting stp protocol.

Default configuration	N/A .
Command mode	Privileged mode.

Examples	`DES-7200# show l2protocol-tunnel stp`
	`L2protocol-tunnel: Stp Enable`
	`DES-7200# show l2protocol-tunnel gvrp`
	`L2protocol-tunnel: gvrp Disable`

Platform description	The software version must be firmware v10.3 and later.