



CLI Reference Guide

Product Model: DGS-3000 Series
Layer 2 Managed Gigabit Ethernet Switch
Release 2.00



Table of Contents

Chapter 1	Using Command Line Interface.....	1
Chapter 2	Basic Command List	8
Chapter 3	802.1Q VLAN Command List.....	21
Chapter 4	802.1X Command List.....	35
Chapter 5	Access Authentication Control Command List.....	52
Chapter 6	Access Control List (ACL) Command List.....	78
Chapter 7	Address Resolution Protocol (ARP) Command List.....	95
Chapter 8	ARP Spoofing Prevention Command List	99
Chapter 9	Auto-Configuration Command List.....	101
Chapter 10	Basic Commands Command List.....	104
Chapter 11	BPDU Attack Protection Command List.....	120
Chapter 12	Cable Diagnostics Command List.....	125
Chapter 13	Command Logging Command List.....	127
Chapter 14	Compound Authentication Command List	129
Chapter 15	Configuration Command List.....	138
Chapter 16	Connectivity Fault Management (CFM) Command List	143
Chapter 17	CPU Interface Filtering Command List.....	170
Chapter 18	Debug Software Command List	178
Chapter 19	DHCP Local Relay Command List.....	189
Chapter 20	DHCP Relay Command List.....	196
Chapter 21	DHCP Server Command List	218
Chapter 22	DHCP Server Screening Command List.....	245
Chapter 23	DHCPv6 Relay Command List.....	256
Chapter 24	DHCPv6 Server Command List	267
Chapter 25	Digital Diagnostic Monitoring (DDM) Command List.....	280
Chapter 26	D-Link Unidirectional Link Detection (DULD) Command List.....	286
Chapter 27	Domain Name System (DNS) Resolver Command List.....	288
Chapter 28	DoS Attack Prevention Command List.....	294
Chapter 29	Energy Efficient Ethernet (EEE) Command List	298
Chapter 30	Ethernet Ring Protection Switching (ERPS) Command List.....	300
Chapter 31	External Alarm Command List	310
Chapter 32	Filter Command List	312
Chapter 33	Filter Database (FDB) Command List.....	315
Chapter 34	Flash File System (FFS) Command List	324
Chapter 35	Flex Link Command List.....	332
Chapter 36	FTP Client Command List	334
Chapter 37	Gratuitous ARP Command List	341
Chapter 38	Historical Counter Command List	346
Chapter 39	IGMP Snooping Command List.....	351
Chapter 40	IP-MAC-Port Binding (IMPB) Command List	374
Chapter 41	IPv6 Neighbor Discover Command List	395

Chapter 42	IPv6 Route Command List	399
Chapter 43	Japanese Web-Based Access Control (JWAC) Command List	402
Chapter 44	Jumbo Frame Command List.....	424
Chapter 45	Layer 2 Protocol Tunneling (L2PT) Command List.....	426
Chapter 46	Link Aggregation Command List	430
Chapter 47	Link Layer Discovery Protocol (LLDP) Command List.....	436
Chapter 48	Loop Back Detection (LBD) Command List	458
Chapter 49	MAC Notification Command List	464
Chapter 50	MAC-based Access Control Command List.....	468
Chapter 51	MAC-based VLAN Command List.....	482
Chapter 52	Mirror Command List.....	485
Chapter 53	MLD Snooping Command List	488
Chapter 54	MSTP debug enhancement Command List	509
Chapter 55	Multicast Filter Command List.....	514
Chapter 56	Multicast VLAN Command List	525
Chapter 57	Multiple Spanning Tree Protocol (MSTP) Command List	544
Chapter 58	ND Spoofing Prevention Command List	556
Chapter 59	Network Load Balancing (NLB) Command List	558
Chapter 60	Network Monitoring Command List.....	563
Chapter 61	OAM Command List.....	568
Chapter 62	Password Recovery Command List.....	575
Chapter 63	Peripherals Command List.....	577
Chapter 64	Ping Command List.....	580
Chapter 65	Port Security Command List	582
Chapter 66	Power Saving Command List.....	589
Chapter 67	PPPoE Circuit ID Insertions Command List.....	595
Chapter 68	Protocol VLAN Command List	598
Chapter 69	QinQ Command List.....	603
Chapter 70	Quality of Service (QoS) Command List	610
Chapter 71	RADIUS Client Command List	626
Chapter 72	Remote Copy Protocol (RCP) Command List.....	632
Chapter 73	RSPAN Command List.....	640
Chapter 74	Safeguard Engine Command List	646
Chapter 75	Secure Shell (SSH) Command List.....	648
Chapter 76	Secure Sockets Layer (SSL) Command List	656
Chapter 77	Show Technical Support Command List.....	661
Chapter 78	Simple Mail Transfer Protocol (SMTP) Command List	664
Chapter 79	Simple Network Management Protocol (SNMP) Command List	669
Chapter 80	Simple RED Command List	695
Chapter 81	Single IP Management Command List.....	700
Chapter 82	Super VLAN Command List.....	710
Chapter 83	Syslog and Trap Source-interface Command List	715
Chapter 84	System Log Command List	718

Chapter 85	System Severity Command List	728
Chapter 86	Telnet Client Command List	730
Chapter 87	TFTP Client Command List	731
Chapter 88	Time and SNTP Command List	737
Chapter 89	Trace Route Command List	744
Chapter 90	Traffic Control Command List	747
Chapter 91	Traffic Segmentation Command List	751
Chapter 92	Trusted Host Command List	753
Chapter 93	Unicast Routing Command List	757
Chapter 94	VLAN Trunking Command List	760
Chapter 95	Voice VLAN Command List	765
Chapter 96	Web-based Access Control (WAC) Command List	775
Appendix A	Password Recovery Procedure	789
Appendix B	System Log Entries	790
Appendix C	Trap Log Entries	800
Appendix D	RADIUS Attributes Assignment	807

Chapter 1 Using Command Line Interface

The Switch can be managed through the Switch's serial port, Telnet, SNMP or the Web-based management agent. The Command Line Interface (CLI) can be used to configure and manage the Switch via the serial port or Telnet interfaces.

This manual provides a reference for all of the commands contained in the CLI. Every command will be introduced in terms of purpose, format, description, parameters, and examples. Configuration and management of the Switch via the Web-based management agent are discussed in the Web UI Reference Guide. For detailed information on installing hardware please also refer to the Hardware Installation Guide.

1-1 Accessing the Switch via the Serial Port

The Switch's serial port's default settings are as follows:

- 115200 baud
- no parity
- 8 data bits
- 1 stop bit

A computer running a terminal emulation program capable of emulating a VT-100 terminal and a serial port configured as above are then connected to the Switch's Console port via an included RS-232 to RJ-45 convertor cable.

With the serial port properly connected to a management computer, the following screen should be visible. If this screen does not appear, try pressing Ctrl+r to refresh the console screen.

```
DGS-3000-26TC Gigabit Ethernet Switch
Command Line Interface

Firmware: Build 2.00.004
Copyright(C) 2016 D-Link Corporation. All rights reserved.

UserName:
PassWord:

DGS-3000-26TC:admin#
```

There is no initial username or password. Just press the **Enter** key twice to display the CLI input cursor – **DGS-3000-26TC:admin#**. This is the command line where all commands are input.

1-2 Setting the Switch's IP Address

Each Switch must be assigned its own IP Address, which is used for communication with an SNMP network manager or other TCP/IP application (for example BOOTP, TFTP). The Switch's default IP address is 10.90.90.90. You can change the default Switch IP address to meet the specification of your networking address scheme.

The Switch is also assigned a unique MAC address by the factory. This MAC address cannot be changed, and can be found on the initial boot console screen – shown below.

```

Boot Procedure                                     V2.00.001
-----
Power On Self Test ..... 100 %

MAC Address   : B0-C5-54-30-00-A0
H/W Version  : A2

Please Wait, Loading V2.00.004 Runtime Image ..... 100 %
UART init ..... 100 %
Starting runtime image
Device Discovery ..... 100 %
Configuration init ..... 100 %

```

The Switch's MAC address can also be found in the Web management program on the Switch Information (Basic Settings) window on the Configuration menu.

The IP address for the Switch must be set before it can be managed with the Web-based manager. The Switch IP address can be automatically set using BOOTP or DHCP protocols, in which case the actual address assigned to the Switch must be known.

Starting at the command line prompt, enter the commands **config ipif System ipaddress xxx.xxx.xxx.xxx/yyy.yyy.yyy.yyy**. Where the **x**'s represent the IP address to be assigned to the IP interface named **System** and the **y**'s represent the corresponding subnet mask.

Alternatively, you can enter **config ipif System ipaddress xxx.xxx.xxx.xxx/z**. Where the **x**'s represent the IP address to be assigned to the IP interface named **System** and the **z** represents the corresponding number of subnets in CIDR notation.

The IP interface named **System** on the Switch can be assigned an IP address and subnet mask which can then be used to connect a management station to the Switch's Telnet or Web-based management agent.

```

DGS-3000-26TC:admin#config ipif System ipaddress 10.24.22.100/255.0.0.0
Command: config ipif System ipaddress 10.24.22.100/8

Success.

DGS-3000-26TC:admin#

```

In the above example, the Switch was assigned an IP address of 10.24.22.100 with a subnet mask of 255.0.0.0. The system message **Success** indicates that the command was executed successfully. The Switch can now be configured and managed via Telnet, SNMP MIB browser and the CLI or via the Web-based management agent using the above IP address to connect to the Switch.

There are a number of helpful features included in the CLI. Entering the **?** command will display a list of all of the top-level commands.

```

DGS-3000-26TC:admin# ?
Command: ?
..
?
cable_diag ports
cd
cfm linktrace
cfm lock md
cfm loopback
clear
clear address_binding dhcp_snoop binding_entry ports
clear address_binding nd_snoop binding_entry ports
clear arptable
clear attack_log
clear cfm pkt_cnt
clear counters
clear ethernet_oam ports
clear fdb
clear historical_counters ports
clear igmp_snooping data_driven_group
clear igmp_snooping statistics counter
clear jvac auth_state
clear log
clear mac_based_access_control auth_state
clear mld_snooping data_driven_group
clear mld_snooping statistics counter
CTRL+C ESC q Quit SPACE n Next Page ENTER Next Entry a All

```

When entering a command without its required parameters, the CLI will prompt you with a **Next possible completions:** message.

```

DGS-3000-26TC:admin#config account
Command: config account
Next possible completions:
<username>

DGS-3000-26TC:admin#

```

In this case, the command **config account** was entered with the parameter **<username>**. The CLI will then prompt to enter the **<username>** with the message, **Next possible completions:**. Every command in the CLI has this feature, and complex commands have several layers of parameter prompting.

In addition, after typing any given command plus one space, users can see all of the next possible sub-commands, in sequential order, by repeatedly pressing the **Tab** key.

To re-enter the previous command at the command prompt, press the up arrow cursor key. The previous command will appear at the command prompt.

```

DGS-3000-26TC:admin#config account
Command: config account
Next possible completions:
<username>

DGS-3000-26TC:admin#config account

```

In the above example, the command **config account** was entered without the required parameter **<username>**, the CLI returned the **Next possible completions: <username>** prompt. The up arrow cursor control key was pressed to re-enter the previous command (**config account**) at the command prompt. Now the appropriate username can be entered and the **config account** command re-executed.

All commands in the CLI function in this way. In addition, the syntax of the help prompts are the same as presented in this manual – angle brackets **< >** indicate a numerical value or character string, braces **{ }** indicate optional parameters or a choice of parameters, and brackets **[]** indicate required parameters.

If a command is entered that is unrecognized by the CLI, the top-level commands will be displayed under the **Available commands:** prompt.

```
DGS-3000-26TC:admin#the
Available commands:
..                ?                cable_diag        cd
cfm               clear                config            copy
create           debug                del               delete
dir              disable              download          enable
erase            login                logout            md
move             no                   ping              ping6
rd               reboot              reconfig          rename
reset            save                 show              smtp
telnet           traceroute          traceroute6       upload

DGS-3000-26TC:admin#
```

The top-level commands consist of commands such as **show** or **config**. Most of these commands require one or more parameters to narrow the top-level command. This is equivalent to **show what?** or **config what?** Where the **what?** is the next parameter.

For example, entering the **show** command with no additional parameters, the CLI will then display all of the possible next parameters.


```

DGS-3000-26TC:admin#show
Command: show
Next possible completions:
802.lp          802.lx          aaa              access_profile
account         accounting      acct_client      address_binding
arp_spoofing_prevention  arpentry        attack_log
auth_client     auth_diagnostics  auth_session_statistics
auth_statistics  authen          authen_enable    authen_login
authen_policy   authentication    authorization     autoconfig
bandwidth_control  boot_file       bpdu_protection  cfm
command         command_history  community_encryption
config          control_pkt      cpu              cpu_filter
current_config   ddm             device_status    dhcp
dhcp_local_relay  dhcp_relay      dhcp_server      dhcpv6
dhcpv6_local_relay  dhcpv6_relay    dhcpv6_server    dhcpv6_server
dos_prevention   dot1v_protocol_group  dscp
duld           eee             environment      erps
error           ethernet_oam    external_alarm    fdb
filter          flow_meter      gratuitous_arp    greeting_message
gvrp           historical_counter
historical_utilization  host_name        igmp
igmp_snooping   ipif           ipif_ipv6_link_local_auto
iproute         ipv6           ipv6route        jumbo_frame
jwac           l2protocol_tunnel  lacp_port        led
limited_multicast_addr  link_aggregation  lldp
lldp_med        log            log_save_timing
log_software_module  loopdetect
mac_based_access_control  mac_based_access_control_local
mac_based_vlan   mac_notification  max_mcast_group
mcast_filter_profile  mirror          mld_snooping
multicast        multicast_fdb    name_server
nd_spoofing_prevention  nlb            packet
password_recovery  per_queue       port              port_security
port_security_entry  port_vlan       ports
power_saving      pppoe          private_vlan     pvid
qinq             radius          rcp              rmon
router_ports      rspan          safeguard_engine  scheduling
scheduling_mechanism  serial_port     session
sim              smtp           snmp             sntp
sred             ssh            ssl
storage_media_info  stp            sub_vlan
super_vlan        switch          syslog           system_severity
tech_support      terminal        tftp             time
time_range        traffic         traffic_segmentation
trap             trusted_host    utilization       vlan
vlan_translation  vlan_trunk     voice_vlan       wac
DGS-3000-26TC:admin#

```

In the above example, all of the possible next parameters for the **show** command are displayed. At the next command prompt, the up arrow was used to re-enter the **show** command, followed by the **account** parameter. The CLI then displays the user accounts configured on the Switch.

1-3 Command Syntax Symbols

Syntax	Description
angle brackets < >	Encloses a variable or value. Users must specify the variable or value. For example, in the command create ipif <ipif_name 12> {<network_address>} <vlan_name 32> {secondary state [enable disable] proxy_arp [enable disable] {local [enable disable]}} users must supply an IP interface name for <ipif_name 12> , a VLAN name for <vlan_name 32> and an address for <network_address> when entering the command. DO NOT TYPE THE ANGLE BRACKETS.
square brackets []	Encloses a required value or list of required arguments. Only one value or argument must be specified. For example, in the command create account [admin operator power_user user] <username 15> {encrypt [plain_text sha_1] <password>} users must specify the account level to be either the admin, operator, power_user, or user level when entering the command. DO NOT TYPE THE SQUARE BRACKETS.
vertical bar 	Separates mutually exclusive items in a list, one of which must be entered. For example, in the command create account [admin operator power_user user] <username 15> {encrypt [plain_text sha_1] <password>} users must specify the account level to be either the admin, operator, power_user, or user level when entering the command. DO NOT TYPE THE VERTICAL BAR.
braces { }	Encloses an optional value or a list of optional arguments. One or more values or arguments can be specified. For example, in the command reset {[config system]} {force_agree} users may choose to reset the configuration or the system in the command. DO NOT TYPE THE BRACES.
parentheses ()	Indicates at least one or more of the values or arguments in the preceding syntax enclosed by braces must be specified. For example, in the command config bpdu_protection ports [<portlist> all] {state [enable disable] mode [drop block shutdown]}(1) users have the option to specify to configure the state or the mode. The (1) following the set of braces indicates at least one argument or value within the braces must be specified. DO NOT TYPE THE PARENTHESES.
ipif <ipif_name 12> metric <value 1-31>	12 means the maximum length of the IP interface name. 1-31 means the legal range of the metric value.

1-4 Line Editing Keys

Keys	Description
Delete	Delete character under cursor and shift remainder of line to left.
Backspace	Delete character to left of cursor and shift remainder of line to left.
Insert	Toggle on and off. When toggled on, inserts text and shifts previous text to right.
Left Arrow	Move cursor to left.
Right Arrow	Move cursor to right
Tab	Help user to select appropriate token.
P	Display the previous page.
n or Space	Display the next page.

Keys	Description
CTRL+C	Escape from displayed pages.
ESC	Escape from displayed pages.
q	Escape from displayed pages.
r	refresh the displayed pages
a	Display the remaining pages. (The screen display will not pause again.)
Enter	Display the next line.

The screen display pauses when the show command output reaches the end of the page.

In the above example, all of the possible next parameters for the **show** command are displayed. At the next command prompt, the up arrow was used to re-enter the **show** command, followed by the **account** parameter. The CLI then displays the user accounts configured on the Switch.

Chapter 2 Basic Command List

show session
show serial_port
config serial_port {baud_rate [9600 19200 38400 115200] auto_logout [never 2_minutes 5_minutes 10_minutes 15_minutes]}
enable clipaging
disable clipaging
login
logout
?
clear
show command_history
config command_history <value 1-40>
config greeting_message {default}
show greeting_message
config command_prompt [<string 16> username default]
config terminal width [default <value 80-200>]
show terminal width
config ports [<portlist> all] {medium_type [fiber copper]} {speed [auto {capability_advertised {10_half 10_full 100_half 100_full 1000_full}} 10_half 10_full 100_half 100_full 1000_full {[master slave]} 10g_full] auto_negotiation [restart_an remote_fault_advertised [disable offline link_fault auto_negotiation_error]] flow_control [enable disable] learning [enable disable] state [enable disable] mdix [auto normal cross] [description <desc 1-32> clear_description] auto_speed_downgrade [enable disable]}(1)
show ports {<portlist>} {[description err_disabled auto_negotiation details media_type]}

2-1 show session

Description

This command is used to display a list of current users logged into the Switch.

Format

show session

Parameters

None.

Restrictions

Only administrators and Operators can issue this command.

Example

To display the session entries:

```
DGS-3000-26TC:admin#show session
```

```
Command: show session
```

ID	Live Time	From	Level Name
8	00:00:17.080	Serial Port	admin Anonymous

```
Total Entries: 1
```

```
CTRL+C ESC q Quit SPACE n Next Page p Previous Page r Refresh
```

2-2 show serial_port

Description

This command is used to display the current serial port settings.

Format

```
show serial_port
```

Parameters

None.

Restrictions

None.

Example

To display the serial port setting:

```
DGS-3000-26TC:admin#show serial_port
```

```
Command: show serial_port
```

```
Baud Rate      : 115200
Data Bits      : 8
Parity Bits    : None
Stop Bits     : 1
Auto-Logout    : 10 mins
```

```
DGS-3000-26TC:admin#
```

2-3 config serial_port

Description

This command is used to configure the serial bit rate used to communicate with the management host and the idle connection auto logout time.

Format

config serial_port {baud_rate [9600 | 19200 | 38400 | 115200] | auto_logout [never | 2_minutes | 5_minutes | 10_minutes | 15_minutes]}

Parameters

baud_rate - (Optional) The serial bit rate that will be used to communicate with the management host. The default baud rate is 115200.

9600 - Specify the serial bit rate to be 9600.

19200 - Specify the serial bit rate to be 19200.

38400 - Specify the serial bit rate to be 38400.

115200 - Specify the serial bit rate to be 115200.

auto_logout - (Optional) The auto logout time out setting.

never - Never timeout.

2_minutes - When idle over 2 minutes, the device will auto logout.

5_minutes - When idle over 5 minutes, the device will auto logout.

10_minutes - When idle over 10 minutes, the device will auto logout.

15_minutes - When idle over 15 minutes, the device will auto logout.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure baud rate:

```
DGS-3000-26TC:admin#config serial_port baud_rate 9600
Command: config serial_port baud_rate 9600

Success.

DGS-3000-26TC:admin#
```

2-4 enable clipaging

Description

This command is used to enable the pausing of the screen display when the show command output reaches the end of the page. The default setting is enabled.

Format

enable clipaging

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable pausing of the screen display when show command output reaches the end of the page:

```
DGS-3000-26TC:admin#enable clipaging
Command: enable clipaging

Success.

DGS-3000-26TC:admin#
```

2-5 disable clipaging

Description

This command is used to disable the pausing of the screen display when the show command output reaches the end of the page. The default setting is enabled.

Format

disable clipaging

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable pausing of the screen display when show command output reaches the end of the page:

```
DGS-3000-26TC:admin#disable clipaging
Command: disable clipaging

Success.

DGS-3000-26TC:admin#
```

2-6 login

Description

This command is used to allow user login to the Switch.

Format

login

Parameters

None.

Restrictions

None.

Example

To login the Switch with a user name dlink:

```
DGS-3000-26TC:admin#login
Command: login

UserName:dlink
PassWord:****

DGS-3000-26TC:admin#
```

2-7 logout

Description

This command is used to logout from the command prompt.

Format

logout

Parameters

None.

Restrictions

None.

Example

To logout from the current user:

```
DGS-3000-26TC:admin#logout
Command: logout

*****
* Logout *
*****

                DGS-3000-26TC Gigabit Ethernet Switch
                Command Line Interface

                Firmware: Build 2.00.004
                Copyright(C) 2016 D-Link Corporation. All rights reserved.

UserName:
```

2-8 ?

Description

This command is used to display a description of a specific command or general command.

Format

?

Parameters

None.

Restrictions

None.

Example

To get “ping” command usage, descriptions:

```
DGS-3000-26TC:admin#? ping
Command: ? ping

Command: ping
Usage: [<ipaddr> | <domain_name 255>] { times <value 1-255> | timeout <sec 1-99>}
Description: Used to test the connectivity between network devices.

DGS-3000-26TC:admin#
```

2-9 clear

Description

This command is used to clear the screen.

Format

clear

Parameters

None.

Restrictions

None.

Example

To clear screen:

```
DGS-3000-26TC:admin#clear
Command: clear

DGS-3000-26TC:admin#
```

2-10 show command_history

Description

This command is used to display command history.

Format

show command_history

Parameters

None.

Restrictions

None.

Example

To display command history:

```
DGS-3000-26TC:admin#show command_history
Command: show command_history

? ping
login
show serial_port
show session
? config bpdu_protection ports
? reset
? create account
? create ipif
show
the
?

DGS-3000-26TC:admin#
```

2-11 config command_history

Description

This command is used to configure the number of commands that the Switch can recall. The Switch “remembers” upto the last 40 commands you entered.

Format

config command_history <value 1-40>

Parameters

<value 1-40> - Enter the number of commands that the Switch can recall. This value must be between 1 and 40.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the number of command history:

```
DGS-3000-26TC:admin#config command_history 25
Command: config command_history 25

Success.

DGS-3000-26TC:admin#
```

2-12 config greeting_message

Description

This command is used to configure the greeting message (or banner).

Format

config greeting_message {default}

Parameters

default - (Optional) Add this parameter to the **config greeting_message** command will return the greeting message (banner) to its original factory default entry.

Restrictions

Only Administrators and Operators can issue this command.

Example

To edit the banner:

```
DGS-3000-26TC:admin#config greeting_message
Command: config greeting_message

Greeting Messages Editor
=====

                DGS-3000-26TC Gigabit Ethernet Switch
                  Command Line Interface

                Firmware: Build 2.00.004
                Copyright(C) 2016 D-Link Corporation. All rights reserved.
=====

<Function Key>          <Control Key>
Ctrl+C      Quit without save    left/right/
Ctrl+W      Save and quit        up/down   Move cursor
                                           Ctrl+D    Delete line
                                           Ctrl+X    Erase all setting
                                           Ctrl+L    Reload original setting
-----
```

2-13 show greeting_message

Description

This command is used to display a greeting message.

Format

show greeting_message

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To display greeting message:

```
DGS-3000-26TC:admin#show greeting_message
Command: show greeting_message

=====

                DGS-3000-26TC Gigabit Ethernet Switch
                Command Line Interface

                Firmware: Build 2.00.004
                Copyright(C) 2016 D-Link Corporation. All rights reserved.
=====

DGS-3000-26TC:admin#
```

2-14 config command_prompt

Description

This command is used to modify the command prompt.

The current command prompt consists of four parts: “product name” + “:” + “user level” + “#” (e.g. “DGS-3000-26TC:admin#”). This command is used to modify the first part (1. “product name”) with a string consisting of a maximum of 16 characters, or to be replaced with the users’ login user name.

When issuing the reset command, the current command prompt will remain the same. However, when issuing the reset system command, the command prompt will return to its original factory default value.

Format

config command_prompt [<string 16> | username | default]

Parameters

<string 16> - Enter the new command prompt string of no more than 16 characters.

username - Enter this command to set the login username as the command prompt.

default - Enter this command to return the command prompt to its original factory default value.

Restrictions

Only Administrators and Operators can issue this command.

Example

To edit the command prompt:

```
DGS-3000-26TC:admin#config command_prompt Prompt#
Command: config command_prompt Prompt#

Success.

Prompt#:admin#
```

2-15 config terminal width

Description

This command is used to set current terminal width.

The usage is described as below:

1. Users login and configure the terminal width to 120, this configuration take effect on this login section. If users implement "save" command, the configuration is saved. After users log out and log in again, the terminal width is 120.
2. If user did not save the configuration, another user login, the terminal width is default value.
3. If at the same time, two CLI sessions are running, once section configure to 120 width and save it, the other section will not be effected, unless it log out and then log in.

Format

config terminal width [default | <value 80-200>]

Parameters

default	- Specify the default terminal width setting. The default value is 80.
<value 80-200>	- Enter the configured terminal width. The width is between 80 and 200 characters.

Restrictions

None.

Example

To configure the current terminal width:

```
DGS-3000-26TC:admin#config terminal width 120
Command: config terminal width 120

Success.

DGS-3000-26TC:admin#
```

2-16 show terminal width

Description

This command is used to display the configuration of current terminal width.

Format

show terminal width

Parameters

None.

Restrictions

None.

Example

To display the configuration of current terminal width:

```
DGS-3000-26TC:admin#show terminal width
Command: show terminal width

Global terminal width      : 80
Current terminal width    : 80

DGS-3000-26TC:admin#
```

2-17 config ports

Description

This command is used to configure the Switch's Ethernet port settings.

Format

config ports [**<portlist>** | **all**] {**medium_type** [**fiber** | **copper**]} {**speed** [**auto** {**capability_advertised** {**10_half** | **10_full** | **100_half** | **100_full** | **1000_full**}} | **10_half** | **10_full** | **100_half** | **100_full** | **1000_full** {**[master** | **slave]**} | **10g_full**] | **auto_negotiation** [**restart_an** | **remote_fault_advertised** [**disable** | **offline** | **link_fault** | **auto_negotiation_error**]] | **flow_control** [**enable** | **disable**] | **learning** [**enable** | **disable**] | **state** [**enable** | **disable**] | **mdix** [**auto** | **normal** | **cross**] | [**description** **<desc 1-32>** | **clear_description**] | **auto_speed_downgrade** [**enable** | **disable**]}(1)

Parameters

<portlist> - Enter a range of ports to be configured.

all - Specify all ports in the system, you may use the "all" parameter command.

medium_type - (Optional) Specify the medium type for the combo ports. This parameter is optional. For non-combo ports, the user doesn't need to specify **medium_type** in the command.

fiber - Specify the fiber port.

copper - Specify the copper port

speed - Specify the port speed.

auto - Specify the port auto negotiation speed.

capability_advertised - Specify that the capability will be advertised.

10_half - Specify the port speed to 10_half.

10_full - Specify the port speed to 10_full.

100_half - Specify the port speed to 100_half.

100_full - Specify the port speed to 100_full.

1000_full - Specify the port speed to 1000_full. Using master or slave mode in this mode is optional.

10_half - Specify the port speed to 10_half.

10_full - Specify the port speed to 10_full.

100_half - Specify the port speed to 100_half.

100_full - Specify the port speed to 100_full.

1000_full - Specify the port speed to 1000_full. While set port speed to 1000_full, user should specify master or slave mode for 1000BASE-T interface, and leave the 1000_full without any master or slave setting for other interface.

master - (Optional) Specify that the port(s) will be set to master.

slave - (Optional) Specify that the port(s) will be set to slave.

10g_full - Specify the port speed to 10g_full.

auto_negotiation - Specify that the auto-negotiation option will be configured.

restart_an - Specify to restart the auto-negotiation process.

remote_fault_advertised - Specify that the remote fault advertisement option will be configured.

disable - Specify to disable remote fault advertisement.

offline - Specify that a local device may indicate Offline prior to powering off, running transmitter tests, or removing the local device from the active configuration. If it is set and detected offline, it will advertise at the next auto-negotiation. It interacted for 1000Mbps MAUs.

link_fault - Specify that if set and local device was detected, a Link_Failure condition indicated by the loss of synchronization, will advertise at the next auto-negotiation. It interacted for 1000Mbps MAUs.

auto_negotiation_error - Specify the resolution which precludes operation between a local device and link partner advertised at the next auto-negotiation. It interacted for 1000Mbps MAUs.

flow_control - Turns on or turns off the flow control on one or more ports by enabling or disabling this function.

enable - Specify that the flow control option will be enabled.

disable - Specify that the flow control option will be disabled.

learning - Turns on or turns off the MAC address learning on one or more ports.

enable - Specify that the learning option will be enabled.

disable - Specify that the learning option will be disabled.

state - Enables or disables the specified port. If the specified ports are in error-disabled status, configure their state to enable will recover these ports from disabled to enable state.

enable - Specify that the port state will be enabled.

disable - Specify that the port state will be disabled.

mdix - The MDIX mode can be specified as auto, normal, and cross. If set to the normal state, the port is in the MDIX mode and can be connected to PC NIC using a straight cable. If set to the cross state, the port is in the MDI mode, and can be connected to a port (in the MDIX mode) on another switch through a straight cable.

auto - Specify that the MDIX mode for the port will be set to auto.

normal - Specify that the MDIX mode for the port will be set to normal.

cross - Specify that the MDIX mode for the port will be set to cross.

description - Specify the description of the port interface.

<desc 1-32> - Enter the port interface description. This value can be up to 32 characters long.

clear description - (Optional) Specify that the description field will be cleared.

auto_speed_downgrade - Specify to enable or disable the option to automatically downgrade the advertised speed. This setting has no effect when the port is working in the forced mode.

enable - Specify to enable the option to automatically downgrade the advertised speed.

disable - Specify to disable the option to automatically downgrade the advertised speed.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the ports:

```
DGS-3000-26TC:admin# config ports 1-3 speed 10_full learning enable state enable flow_control
enable
Command: config ports 1-3 speed 10_full learning enable state enable flow_control enable

Success.

DGS-3000-26TC:admin#
```

2-18 show ports

Description

This command is used to display the current configurations of a range of ports. No parameter will show all ports.

Format

show ports {<portlist>} {[description | err_disabled | auto_negotiation | details | media_type]}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.
description - (Optional) Specify to display the port description.
err_disabled - (Optional) Specify to display disabled information.
auto_negotiation - (Optional) Specify to display detailed auto-negotiation information.
details - (Optional) Specify if port information is included in the display.
media_type - (Optional) Displays SFP information.

Restrictions

None.

Example

To display the port details:

```
DGS-3000-26TC:admin#show ports details
Command: show ports details

Port : 1
-----
Port Status           : Link Up
Description           :
HardWare Type        : Gigabits Ethernet
MAC Address           : B0-C5-54-30-00-A1
Bandwidth             : 100000Kbit
Auto-Negotiation     : Enabled
Duplex Mode           : Full Duplex
Flow Control          : Disabled
MDI                   : Cross
Address Learning      : Enabled
Last Clear of Counter : 3 hours 9 mins ago
BPDU Hardware Filtering Mode: Disabled
Queuing Strategy      : FIFO
TX Load               :    0/100,          0 bits/sec,          0 packets/sec
RX Load               :    0/100,          0 bits/sec,          0 packets/sec

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```


Chapter 3 802.1Q VLAN Command List

create vlan <vlan_name 32> tag <vlanid 2-4094> {type [1q_vlan private_vlan]} {advertisement}
create vlan vlanid <vidlist> {type [1q_vlan private_vlan]} {advertisement}
delete vlan <vlan_name 32>
delete vlan vlanid <vidlist>
config vlan <vlan_name 32> {[add [tagged untagged forbidden] delete] <portlist> advertisement [enable disable]}(1)
config vlan vlanid <vidlist> {[add [tagged untagged forbidden] delete] <portlist> advertisement [enable disable] name <vlan_name 32>}(1)
config port_vlan [<portlist> all] {gvrp_state [enable disable] ingress_checking [enable disable] acceptable_frame [tagged_only admit_all] pvid <vlanid 1-4094>}(1)
show vlan {<vlan_name 32>}
show vlan ports {<portlist>}
show vlan vlanid <vidlist>
show port_vlan {<portlist>}
enable pvid auto_assign
disable pvid auto_assign
show pvid auto_assign
config gvrp [timer {join <value 100-100000> leave <value 100-100000> leaveall <value 100-100000>} nni_bpdu_addr [dot1d dot1ad]]
show gvrp
enable gvrp
disable gvrp
config private_vlan [<vlan_name 32> vid <vlanid 2-4094>] [add [isolated community] remove] [<vlan_name 32> vlanid <vidlist>]
show private_vlan {[<vlan_name 32> vlanid<vidlist>]}

3-1 create vlan

Description

This command is used to create a VLAN on the Switch. The VLAN ID must be always specified for creating a VLAN.

Format

```
create vlan <vlan_name 32> tag <vlanid 2-4094> {type [1q_vlan | private_vlan]} {advertisement}
```

Parameters

<vlan_name 32> - Enter the VLAN name to be created. The VLAN name can be up to 32 characters long.

tag - Creates the VLAN ID.

<vlanid 2-4094> - Enter the VLAN ID. The VLAN ID value must be between 2 and 4094.

type - (Optional) Specify the type of VLAN here.

1q_vlan - (Optional) Specify that the type of VLAN used is based on the 802.1Q standard.

private_vlan - (Optional) Specify that the private VLAN type will be used.

advertisement - (Optional) Specify the VLAN as being able to be advertised out.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a VLAN with name “p1” and VLAN ID 2:

```
DGS-3000-26TC:admin#create vlan p1 tag 2 type private_vlan advertisement
Command: create vlan p1 tag 2 type private_vlan advertisement

Success.

DGS-3000-26TC:admin#
```

3-2 create vlan vlanid**Description**

This command is used to create more than one VLANs at a time. A unique VLAN name (e.g. VLAN10) will be automatically assigned by the system. The automatic assignment of VLAN name is based on the following rule: “VLAN”+ID. For example, for VLAN ID 100, the VLAN name will be VLAN100. If this VLAN name is conflict with the name of an existing VLAN, then it will be renamed based on the following rule: “VLAN”+ID+”ALT”+ collision count. For example, if this conflict is the second collision, then the name will be VLAN100ALT2.

Format

create vlan vlanid <vidlist> {type [1q_vlan | private_vlan]} {advertisement}

Parameters

<vidlist> - Enter the VLAN ID list to be created.

type - (Optional) Specify the type of VLAN to be created.

1q_vlan - (Optional) Specify that the VLAN created will be a 1Q VLAN.

private_vlan - (Optional) Specify that the private VLAN type will be used.

advertisement - (Optional) Specify the VLAN as being able to be advertised out.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create some VLANs using VLAN ID:

```
DGS-3000-26TC:admin#create vlan vlanid 10-30
Command: create vlan vlanid 10-30

Success.

DGS-3000-26TC:admin#
```

3-3 delete vlan**Description**

This command is used to delete a previously configured VLAN by the name on the Switch.

Format

delete vlan <vlan_name 32>

Parameters

vlan - The VLAN name of the VLAN to be deleted.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To remove a vlan v1:

```
DGS-3000-26TC:admin#delete vlan v1
Command: delete vlan v1

Success.

DGS-3000-26TC:admin#
```

3-4 delete vlan vlanid

Description

This command is used to delete one or a number of previously configured VLAN by VID list.

Format

delete vlan vlanid <vidlist>

Parameters

vlanid - The VLAN ID list to be deleted.

<vidlist> - Enter the VLAN ID list here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To remove VLANs from 10-30:

```
DGS-3000-26TC:admin#delete vlan vlanid 10-30
Command: delete vlan vlanid 10-30

Success.

DGS-3000-26TC:admin#
```

3-5 config vlan

Description

This command is used to configure a VLAN based on the name.

Format

config vlan <vlan_name 32> {[add [tagged | untagged | forbidden] | delete] <portlist> | advertisement [enable | disable]}(1)

Parameters

<vlan_name 32> - Enter the VLAN name you want to add ports to. This name can be up to 32 characters long.

add - (Optional) Specify to add tagged, untagged or forbidden ports to the VLAN.

tagged - Specify the additional ports as tagged.

untagged - Specify the additional ports as untagged.

forbidden - Specify the additional ports as forbidden.

delete - (Optional) Specify to delete ports from the VLAN.

<portlist> - (Optional) Enter the list of ports used for the configuration here.

advertisement - (Optional) Specify the GVRP state of this VLAN.

enable - Specify to enable advertisement for this VLAN.

disable - Specify to disable advertisement for this VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add 4 through 8 as tagged ports to the VLAN v2:

```
DGS-3000-26TC:admin#config vlan v2 add tagged 4-8
Command: config vlan v2 add tagged 4-8

Success.

DGS-3000-26TC:admin#
```

3-6 config vlan vlanid

Description

This command is used to configure multiple VLANs at one time. But conflicts will be generated if you configure the name of multiple VLANs at one time.

Format

config vlan vlanid <vidlist> {[add [tagged | untagged | forbidden] | delete] <portlist> | advertisement [enable | disable] | name <vlan_name 32>}(1)

Parameters

<vidlist> - Enter a list of VLAN IDs to configure.

add - (Optional) Specify to add tagged, untagged or forbidden ports to the VLAN.

tagged - Specify the additional ports as tagged.

untagged - Specify the additional ports as untagged.

forbidden - Specify the additional ports as forbidden.

delete - (Optional) Specify to delete ports from the VLAN.

<portlist> - (Optional) Enter the list of ports used for the configuration here.

advertisement - (Optional) Specify the GVRP state of this VLAN.

enable - Specify to enable advertisement for this VLAN.

disable - Specify to disable advertisement for this VLAN.

name - (Optional) The new name of the VLAN.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add 4 through 8 as tagged ports to the VLAN ID from 10-20:

```
DGS-3000-26TC:admin#config vlan vlanid 10-20 add tagged 4-8
Command: config vlan vlanid 10-20 add tagged 4-8

Success.

DGS-3000-26TC:admin#
```

3-7 config port_vlan

Description

This command is used to set the ingress checking status, the sending and receiving GVRP information.

Format

config port_vlan [<portlist> | all] {gvrp_state [enable | disable] | ingress_checking [enable | disable] | acceptable_frame [tagged_only | admit_all] | pvid <vlanid 1-4094>}(1)

Parameters

<portlist> - Enter a range of ports for which you want ingress checking. The port list is specified by listing the beginning port number on the Switch, separated by a colon. Then highest port number of the range (also separated by a colon) is specified. The beginning and end of the port list range are separated by a dash.

all - Specify all ports for ingress checking.

gvrp_state - (Optional) Enables or disables the GVRP for the ports specified in the port list.
enable - Specify that GVRP for the specified ports will be enabled.
disable - Specify that GVRP for the specified ports will be disabled.

ingress_checking - (Optional) Enables or disables ingress checking for the specified portlist.
enable - Specify that ingress checking will be enabled for the specified portlist.
disable - Specify that ingress checking will be disabled for the specified portlist.

acceptable_frame - (Optional) The type of frame will be accepted by the port. There are two types:
tagged_only - Only tagged packets can be accepted by this port.
admit_all - All packets can be accepted.

pvid - (Optional) Specify the PVID of the ports.
<vlanid 1-4094> - Enter the VLAN ID here. The VLAN ID value must be between 1 and 4094.

Restrictions

Only Administrators and Operators can issue this command.

Example

To sets the ingress checking status, the sending and receiving GVRP information:

```
DGS-3000-26TC:admin#config port_vlan 1-5 gvrp_state enable ingress_checking enable
acceptable_frame tagged_only pvid 2
Command: config port_vlan 1-5 gvrp_state enable ingress_checking enable acceptable_frame
tagged_only pvid 2

Success.

DGS-3000-26TC:admin#
```

3-8 show vlan

Description

This command is used to display the vlan information including of parameters setting and operational value.

Format

show vlan {<vlan_name 32>}

Parameters

<vlan_name 32> - (Optional) Enter the VLAN name to be displayed. The VLAN name can be up to 32 characters long.

Restrictions

None.

Example

To display VLAN settings:

```
DGS-3000-26TC:admin#show vlan
Command: show vlan

VLAN Trunk State          : Disabled
VLAN Trunk Member Ports  :

VID           : 1           VLAN Name       : default
VLAN Type     : Static      Advertisement  : Enabled
Member Ports  : 1-26
Static Ports  : 1-26
Current Tagged Ports    :
Current Untagged Ports: 1-26
Static Tagged Ports    :
Static Untagged Ports  : 1-26
Forbidden Ports        :

Total Static VLAN Entries: 1
Total GVRP VLAN Entries: 0

DGS-3000-26TC:admin#
```

3-9 show vlan ports

Description

This command is used to display the vlan information per ports.

Format

show vlan ports {<portlist>}

Parameters

<portlist> - (Optional) Enter the list of ports for which the VLAN information will be displayed.

Restrictions

None.

Example

To display the VLAN configuration for port 6:

```
DGS-3000-26TC:admin#show vlan ports 6
Command: show vlan ports 6

  Port      VID      Untagged  Tagged   Dynamic  Forbidden
  -----  -
  6         1         X         -        -        -
  6         2         -         X        -        -

DGS-3000-26TC:admin#
```

3-10 show vlan vlanid

Description

This command is used to display the vlan information using the VLAN ID.

Format

show vlan vlanid <vidlist>

Parameters

<vidlist> - Enter the VLAN ID to be displayed.

Restrictions

None.

Example

To display the VLAN configuration for VLAN ID 1:

```

DGS-3000-26TC:admin#show vlan vlanid 1
Command: show vlan vlanid 1

VID                : 1                VLAN Name          : default
VLAN Type          : Static            Advertisement     : Enabled
Member Ports       : 1-26
Static Ports       : 1-26
Current Tagged Ports :
Current Untagged Ports: 1-26
Static Tagged Ports :
Static Untagged Ports : 1-26
Forbidden Ports    :

Total Entries : 1

DGS-3000-26TC:admin#

```

3-11 show port_vlan

Description

This command is used to display the ports' VLAN attributes on the Switch.

Format

show port_vlan {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.
 If no parameter specified, system will display all ports gvrp information.

Restrictions

None.

Example

To display 802.1Q port setting:


```
DGS-3000-26TC:admin#show port_vlan
```

```
Command: show port_vlan
```

Port	PVID	GVRP	Ingress Checking	Acceptable Frame Type
1	2	Enabled	Enabled	Only VLAN-tagged Frames
2	2	Enabled	Enabled	Only VLAN-tagged Frames
3	2	Enabled	Enabled	Only VLAN-tagged Frames
4	2	Enabled	Enabled	Only VLAN-tagged Frames
5	2	Enabled	Enabled	Only VLAN-tagged Frames
6	1	Disabled	Enabled	All Frames
7	1	Disabled	Enabled	All Frames
8	1	Disabled	Enabled	All Frames
9	1	Disabled	Enabled	All Frames
10	1	Disabled	Enabled	All Frames
11	1	Disabled	Enabled	All Frames
12	1	Disabled	Enabled	All Frames
13	1	Disabled	Enabled	All Frames
14	1	Disabled	Enabled	All Frames
15	1	Disabled	Enabled	All Frames
16	1	Disabled	Enabled	All Frames
17	1	Disabled	Enabled	All Frames
18	1	Disabled	Enabled	All Frames
19	1	Disabled	Enabled	All Frames
20	1	Disabled	Enabled	All Frames

```
CTRL+C ESC q Quit SPACE n Next Page ENTER Next Entry a All
```

3-12 enable pvid auto assign

Description

This command is used to enable the auto-assignment of PVID.

If "Auto-assign PVID" is enabled, PVID will be possibly changed by PVID or VLAN configuration. When user configures a port to VLAN X's untagged membership, this port's PVID will be updated with VLAN X. In the form of VLAN list command, PVID is updated with last item of VLAN list. When user removes a port from the untagged membership of the PVID's VLAN, the port's PVID will be assigned with "default VLAN". The default setting is enabled.

Format

```
enable pvid auto_assign
```

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the auto-assign PVID:

```
DGS-3000-26TC:admin#enable pvid auto_assign
Command: enable pvid auto_assign

Success.

DGS-3000-26TC:admin#
```

3-13 disable pvid auto assign

Description

This command is used to disable auto assignment of PVID.

Format

disable pvid auto_assign

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the auto-assign PVID:

```
DGS-3000-26TC:admin#disable pvid auto_assign
Command: disable pvid auto_assign

Success.

DGS-3000-26TC:admin#
```

3-14 show pvid auto_assign

Description

This command is used to display the PVID auto-assignment state.

Format

show pvid auto_assign

Parameters

None.

Restrictions

None.

Example

To display PVID auto-assignment state:

```
DGS-3000-26TC:admin#show pvid auto_assign
Command: show pvid auto_assign

PVID Auto-assignment: Enabled

DGS-3000-26TC:admin#
```

3-15 config gvrp

Description

This command is used to set the GVRP timer's value. The default value for Join time is 200 milliseconds; for Leave time is 600 milliseconds; for LeaveAll time is 10000 milliseconds.

Format

config gvrp [timer {join <value 100-100000> | leave <value 100-100000> | leaveall <value 100-100000>} | nni_bpdu_addr [dot1d | dot1ad]]

Parameters

timer - Specify that the GVRP timer parameter will be configured.
join - (Optional) Specify the Join time will be set. <value 100-100000> - Enter the time used here. This value must be between 100 and 100000.
leave - (Optional) Specify the Leave time will be set. <value 100-100000> - Enter the time used here. This value must be between 100 and 100000.
leaveall - (Optional) Specify the LeaveAll time will be set. <value 100-100000> - Enter the time used here. This value must be between 100 and 100000.
nni_bpdu_addr - This address is used to determine the BPDU protocol address for GVRP at a service provider's site. It can use either an 802.1d GVRP address (0180C2000021) or an 802.1ad service provider GVRP address (0180C200000D).
dot1d - Specify that the NNI BPDU protocol address value will be set to Dot1d.
dot1ad - Specify that the NNI BPDU protocol address value will be set to Dot1ad.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the Join time to 200 milliseconds:

```
DGS-3000-26TC:admin#config gvrp timer join 200
Command: config gvrp timer join 200

Success.

DGS-3000-26TC:admin#
```

3-16 show gvrp

Description

This command is used to display the GVRP global setting.

Format

show gvrp

Parameters

None.

Restrictions

None.

Example

To display the global setting of GVRP:

```
DGS-3000-26TC:admin#show gvrp
Command: show gvrp

Global GVRP      : Disabled
Join Time       : 200 Milliseconds
Leave Time       : 600 Milliseconds
LeaveAll Time    : 10000 Milliseconds
NNI BPDU Address: dot1d

DGS-3000-26TC:admin#
```

3-17 enable gvrp

Description

This commands is used to enable the Generic VLAN Registration Protocol (GVRP).

Format

enable gvrp

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the generic VLAN Registration Protocol (GVRP):

```
DGS-3000-26TC:admin#enable gvrp
Command: enable gvrp

Success.

DGS-3000-26TC:admin#
```

3-18 disable gvrp

Description

This command is used to disable the Generic VLAN Registration Protocol (GVRP).

Format

disable gvrp

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the Generic VLAN Registration Protocol (GVRP):

```
DGS-3000-26TC:admin#disable gvrp
Command: disable gvrp

Success.

DGS-3000-26TC:admin#
```

3-19 config private_vlan

Description

This command is used to add or remove a secondary VLAN from a private VLAN.

Format

config private_vlan [<vlan_name 32> | vid <vlanid 2-4094>] [add [isolated | community] | remove] [<vlan_name 32> | vlanid <vidlist>]

Parameters

<vlan_name 32> - Enter the name of the private VLAN.
vid - Specify the VLAN ID of the private VLAN.
<vlanid 2-4094> - Enter the VLAN ID used here. This value must be between 2 and 4094.
add - Specify that a secondary VLAN will be added to the private VLAN.
isolated - Specify the secondary VLAN as isolated VLAN.
community - Specify the secondary VLAN as community VLAN.
remove - Specify that a secondary VLAN will be removed from the private VLAN.
<vlan_name 32> - Enter the secondary VLAN name used. This name can be up to 32 characters long.
vlanid - A range of secondary VLAN to add or remove to the private VLAN.
<vidlist> - Enter the secondary VLAN ID used here.

Restrictions

Only Administrators and Operators can issue this command.

Example

To associate secondary vlan to private vlan p1:

```
DGS-3000-26TC:admin#config private_vlan p1 add community vlanid 3
Command: config private_vlan p1 add community vlanid 3

Success.

DGS-3000-26TC:admin#
```

3-20 show private_vlan

Description

This command is used to show the private VLAN information.

Format

show private_vlan {[<vlan_name 32> | vlanid<vidlist>]}

Parameters

<vlan_name 32> - (Optional) Enter the name of the private VLAN or its secondary VLAN. This name can be up to 32 characters long.

vlanid - (Optional) Specify the VLAN ID of the private VLAN or its secondary VLAN.

<vidlist> - Enter the VLAN ID used here.

Restrictions

Only Administrators and Operators can issue this command.

Example

To display private VLAN settings:

```
DGS-3000-26TC:admin#show private_vlan
Command: show private_vlan

Primary VLAN      3
-----
Promiscuous Ports :
Trunk Ports       :

Total Entries: 1

DGS-3000-26TC:admin#
```

Chapter 4 802.1X Command List

```

enable 802.1x
disable 802.1x
create 802.1x user <username 15>
delete 802.1x user <username 15>
show 802.1x user
config 802.1x auth_protocol [local | radius_eap]
config 802.1x fwd_pdu system [enable | disable]
config 802.1x fwd_pdu ports [<portlist> | all] [enable | disable]
config 802.1x authorization attributes radius [enable | disable]
show 802.1x {[auth_state | auth_configuration] ports {<portlist>}}
config 802.1x capability ports [<portlist> | all] [authenticator | none]
config 802.1x max_users [<value 1-448> | no_limit]
config 802.1x auth_parameter ports [<portlist> | all] [default | {direction [both | in] | port_control [force_unauth |
  auto | force_auth] | quiet_period <sec 0-65535> | tx_period <sec 1-65535> | supp_timeout <sec 1-65535> |
  server_timeout <sec 1-65535> | max_req <value 1-10> | reauth_period <sec 1-65535> | max_users [<value 1-
  448> | no_limit] | enable_reauth [enable | disable]}(1)]
config 802.1x init [port_based ports [<portlist> | all] | mac_based ports [<portlist> | all] {mac_address
  <macaddr>}]
config 802.1x auth_mode [port_based | mac_based]
config 802.1x reauth [port_based ports [<portlist> | all] | mac_based ports [<portlist> | all] {mac_address
  <macaddr>}]
create 802.1x guest_vlan <vlan_name 32>
delete 802.1x guest_vlan <vlan_name 32>
config 802.1x guest_vlan ports [<portlist> | all] state [enable | disable]
config 802.1x trap state [enable | disable]
show 802.1x guest_vlan
show auth_statistics {ports <portlist>}
show auth_diagnostics {ports <portlist>}
show auth_session_statistics {ports <portlist>}

```

4-1 enable 802.1x

Description

This command is used to enable the 802.1X function.

Format

```
enable 802.1x
```

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Used to enable the 802.1X function:

```
DGS-3000-26TC:admin#enable 802.1x
Command: enable 802.1x

Success.

DGS-3000-26TC:admin#
```

4-2 disable 802.1x

Description

This command is used to disable the 802.1X function.

Format

disable 802.1x

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the 802.1X function:

```
DGS-3000-26TC:admin#disable 802.1x
Command: disable 802.1x

Success.

DGS-3000-26TC:admin#
```

4-3 create 802.1x user

Description

This command is used to create an 802.1X user.

Format

create 802.1x user <username 15>

Parameters

<username 15> - Enter the username to be added. This value can be up to 15 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a 802.1x user "test":

```
DGS-3000-26TC:admin#create 802.1x user test
Command: create 802.1x user test

Enter a case-sensitive new password:****
Enter the new password again for confirmation:****
Success.

DGS-3000-26TC:admin#
```

4-4 delete 802.1x user

Description

This command is used to delete an 802.1X user.

Format

delete 802.1x user <username 15>

Parameters

<username 15> - Enter the username to be deleted. This value can be up to 15 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete user "test":

```
DGS-3000-26TC:admin#delete 802.1x user test
Command: delete 802.1x user test

Success.

DGS-3000-26TC:admin#
```

4-5 show 802.1x user

Description

This command is used to display the 802.1X user.

Format

show 802.1x user

Parameters

None.

Restrictions

None.

Example

To display the 802.1X user information:

```
DGS-3000-26TC:admin#show 802.1x user
Command: show 802.1x user

Current Accounts:
Username          Password
-----
test              test

Total Entries:1

DGS-3000-26TC:admin#
```

4-6 config 802.1x auth_protocol

Description

This command is used to configure the 802.1X authentication protocol.

Format

config 802.1x auth_protocol [local | radius_eap]

Parameters

local - Specify the authentication protocol as local.

radius_eap - Specify the authentication protocol as RADIUS EAP.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the 802.1X authentication protocol to RADIUS EAP:

```
DGS-3000-26TC:admin#config 802.1x auth_protocol radius_eap
Command: config 802.1x auth_protocol radius_eap

Success.

DGS-3000-26TC:admin#
```

4-7 config 802.1x fwd_pdu system

Description

This command is used to globally control the forwarding of EAPOL PDU. When 802.1X functionality is disabled globally or for a port, and if 802.1X fwd_pdu is enabled both globally and for the port, a received EAPOL packet on

the port will be flooded in the same VLAN to those ports for which 802.1X fwd_pdu is enabled and 802.1X is disabled (globally or just for the port). The default state is disabled.

Format

config 802.1x fwd_pdu system [enable | disable]

Parameters

enable - Enables the forwarding of EAPOL PDU.

disable - Disables the forwarding of EAPOL PDU.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure forwarding of EAPOL PDU system state enable:

```
DGS-3000-26TC:admin#config 802.1x fwd_pdu system enable
Command: config 802.1x fwd_pdu system enable

Success.

DGS-3000-26TC:admin#
```

4-8 config 802.1x fwd_pdu ports

Description

This command is used to control the forwarding of EAPOL PDU. When 802.1X functionality is disabled globally or for a port, and if 802.1X fwd_pdu is enabled both globally and for the port, a received EAPOL packet on the port will be flooded in the same VLAN to those ports for which 802.1X fwd_pdu is enabled and 802.1X is disabled (globally or just for the port). The default state is disabled.

Format

config 802.1x fwd_pdu ports [<portlist> | all] [enable | disable]

Parameters

<portlist> - Enter the list of ports used for the configuration.

all - Specify that all the ports will be used.

enable - Enables forwarding EAPOL PDU receive on the ports.

disable - Disables forwarding EAPOL PDU receive on the ports.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure 802.1X fwd_pdu for ports:

```
DGS-3000-26TC:admin#config 802.1x fwd_pdu ports 1-2 enable
Command: config 802.1x fwd_pdu ports 1-2 enable

Success.

DGS-3000-26TC:admin#
```

4-9 config 802.1x authorization attributes

Description

This command is used to enable or disable the acceptance of authorized configuration.

When the authorization is enabled for 802.1X's RADIUS authentication, the authorized attributes (for example VLAN, 802.1p default priority, and ACL) assigned by the RADIUS server will be accepted.

Format

config 802.1x authorization attributes radius [enable | disable]

Parameters

radius - If specified to enable, the authorization attributes (for example VLAN, 802.1p default priority, and ACL) assigned by the RADIUS server will be accepted. The default state is enabled.
enable - Specify to enable the authorization attributes.
disable - Specify to disable the authorization attributes.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

The following example will disable to accept the authorized data assigned from the RADIUS server:

```
DGS-3000-26TC:admin#config 802.1x authorization attributes radius disable
Command: config 802.1x authorization attributes radius disable

Success.

DGS-3000-26TC:admin#
```

4-10 show 802.1x

Description

This command is used to display the 802.1X state or configurations.

Format

show 802.1x {[auth_state | auth_configuration] ports {<portlist>}}

Parameters

auth_state - (Optional) Displays 802.1X authentication state machine of some or all ports.
auth_configuration - (Optional) Used to display 802.1X configurations of some or all ports.

port - (Optional) Specify a range of ports to be displayed. If no port is specified, all ports will be displayed.

<portlist> - Enter the list of ports used for the configuration here.

If no parameter is specified, the 802.1X system configurations will be displayed.

Restrictions

None.

Example

To display the 802.1X port level configurations:

```
DGS-3000-26TC:admin#show 802.1x auth_configuration ports 1
Command: show 802.1x auth_configuration ports 1

Port Number      : 1
Capability        : None
AdminCrlDir      : Both
OpenCrlDir       : Both
Port Control     : Auto
QuietPeriod      : 60    sec
TxPeriod         : 30    sec
SuppTimeout      : 30    sec
ServerTimeout    : 30    sec
MaxReq           : 2     times
ReAuthPeriod     : 3600  sec
ReAuthenticate   : Disabled
Forward EAPOL PDU On Port : Enabled
Max User On Port : 16

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

4-11 config 802.1x capability ports

Description

This command is used to configure the port capability.

Format

config 802.1x capability ports [<portlist> | all] [authenticator | none]

Parameters

<portlist> - Enter the list of ports used for the configuration here.

all - Specify all ports to be configured.

authenticator - Specify the port that will enforce authentication before allowing access to services that are accessible from that port. This port will adopt the authenticator role.

none - Disables authentication on the specified ports.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the port capability:

```
DGS-3000-26TC:admin#config 802.1x capability ports 1-10 authenticator
Command: config 802.1x capability ports 1-10 authenticator

Success.

DGS-3000-26TC:admin#
```

4-12 config 802.1x max_users

Description

This command is used to limit the maximum number of users that can be learned via 802.1X authentication. In addition to the global limitation, maximum user for per port is also limited. It is specified by config 802.1x auth_parameter command.

Format

config 802.1x max_users [<value 1-448> | no_limit]

Parameters

<value 1-448> - Enter the maximum number of users. This value must be between 1 and 448.

no_limit - Specify that the maximum user limit will be set to 448.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure 802.1X number of users to be limited to 200:

```
DGS-3000-26TC:admin#config 802.1x max_users 200
Command: config 802.1x max_users 200

Success.

DGS-3000-26TC:admin#
```

4-13 config 802.1x auth_parameter ports

Description

This command is used to configure the parameters that control the operation of the authenticator associated with a port.

Format

config 802.1x auth_parameter ports [<portlist> | all] [default | {direction [both | in] | port_control [force_unauth | auto | force_auth] | quiet_period <sec 0-65535> | tx_period <sec 1-65535> | supp_timeout <sec 1-65535> | server_timeout <sec 1-65535> | max_req <value 1-10> | reauth_period <sec 1-65535> | max_users [<value 1-448> | no_limit] | enable_reauth [enable | disable]}(1)]

Parameters

<portlist> - Enter the list of ports used for the configuration here.

all - Specify that all the ports will be used.

default - Sets all parameter to be default value.

direction - (Optional) Sets the direction of access control.

both - For bidirectional access control.

in - For unidirectional access control.

port_control - (Optional) You can force a specific port to be unconditionally authorized or unauthorized by setting the parameter of port_control to be force_auth or force_unauth. Besides, the controlled port will reflect the outcome of authentication if port_control is auto.

force_unauth - Forces a specific port to be unconditionally unauthorized.

auto - The controlled port will reflect the outcome of authentication.

force_auth - Forces a specific port to be unconditionally authorized.

quiet_period - (Optional) It is the initialization value of the quietWhile timer. The default value is 60 seconds and can be any value among 0 to 65535.

<sec 0-65535> - Enter the quiet period value here. This value must be between 0 and 65535 seconds.

tx_period - (Optional) It is the initialization value of the transmit timer period. The default value is 30 seconds and can be any integer value among 1 to 65535.

<sec 1-65535> - Enter the TX period value here. This value must be between 1 and 65535 seconds.

supp_timeout - (Optional) The initialization value of the aWhile timer when timing out the supplicant. Its default value is 30 seconds and can be any integer value among 1 to 65535.

<sec 1-65535> - Enter the supplicant timeout value here. This value must be between 1 and 65535 seconds.

server_timeout - (Optional) The initialization value of the aWhile timer when timing out the authentication server. Its default value is 30 seconds and can be any integer value among 1 to 65535.

<sec 1-65535> - Enter the server timeout value here. This value must be between 1 and 65535 seconds.

max_req - (Optional) The maximum number of times that the authentication PAE state machine will retransmit an EAP Request packet to the supplicant. Its default value is 2 and can be any integer number among 1 to 10.

<value 1-10> - Enter the maximum required value here. This value must be between 1 and 10.

reauth_period - (Optional) It's a nonzero number of seconds, which is used to be the re-authentication timer. The default value is 3600.

<sec 1-65535> - Enter the re-authentication period value here. This value must be between 1 and 65535 seconds.

max_users - (Optional) Specify per port maximum number of users. The default value is 16.

<value 1-448> - Enter the maximum users value here. This value must be between 1 and 448.

no_limit - Specify that no limit is enforced on the maximum users used.

enable_reauth - (Optional) You can enable or disable the re-authentication mechanism for a specific port.

enable - Specify to enable the re-authentication mechanism for a specific port.

disable - Specify to disable the re-authentication mechanism for a specific port.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the parameters that control the operation of the authenticator associated with a port:

```
DGS-3000-26TC:admin#config 802.1x auth_parameter ports 1-20 direction both
Command: config 802.1x auth_parameter ports 1-20 direction both

Success.

DGS-3000-26TC:admin#
```

4-14 config 802.1x init

Description

This command is used to initialize the authentication state machine of some or all ports.

Format

config 802.1x init [**port_based ports** [<portlist> | all] | **mac_based ports** [<portlist> | all] {**mac_address** <macaddr>}]

Parameters

port_based ports - Specify the authentication as the port-based mode.

 <portlist> - Enter the list of ports used for the configuration here.

all - Specify that all ports will be used.

mac_based ports - Specify the authentication as the MAC-based mode.

 <portlist> - Enter the list of ports used for the configuration here.

all - Specify that all ports will be used.

mac_address - (Optional) Specify the MAC address of client.

 <macaddr> - Enter the MAC address used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To initialize the authentication state machine of some or all:

```
DGS-3000-26TC:admin#config 802.1x init port_based ports all
Command: config 802.1x init port_based ports all
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

4-15 **config 802.1x auth_mode****Description**

This command is used to configure 802.1X authentication mode.

Format

config 802.1x auth_mode [**port_based** | **mac_based**]

Parameters

port_based - Specifies the authentication as the port-based mode.

mac_based - Specifies the authentication as the MAC-based mode.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the authentication mode:


```
DGS-3000-26TC:admin#config 802.1x auth_mode port_based
Command: config 802.1x auth_mode port_based

Success.

DGS-3000-26TC:admin#
```

4-16 config 802.1x reauth

Description

This command is used to re-authenticate the device connected to the port. During the re-authentication period, the port status remains authorized until failed re-authentication.

Format

config 802.1x reauth [port_based ports [<portlist> | all] | mac_based ports [<portlist> | all] {mac_address <macaddr>}]

Parameters

port_based ports - Specify the authentication as the port-based mode.

<portlist> - Enter the list of ports used for the configuration here.

all - Specify that all ports will be used.

mac_based ports - Specify the authentication as the MAC-based mode.

<portlist> - Enter the list of ports used for the configuration here.

all - Specify that all ports will be used.

mac_address - (Optional) Specify the MAC address of client.

<macaddr> - Enter the MAC address used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To re-authenticate the device connected to the port:

```
DGS-3000-26TC:admin#config 802.1x reauth port_based ports all
Command: config 802.1x reauth port_based ports all

Success.

DGS-3000-26TC:admin#
```

4-17 create 802.1x guest_vlan

Description

This command is used to assign a static VLAN to be guest VLAN. The specific VLAN which assigned to guest VLAN must be existed. The specific VLAN which assigned to guest VLAN can't be deleting.

Format

create 802.1x guest_vlan <vlan_name 32>

Parameters

<vlan_name 32> - Enter the VLAN to be guest VLAN. The VLAN name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a VLAN named "guestVLAN" as 802.1X guest VLAN:

```
DGS-3000-26TC:admin#create 802.1x guest_vlan guestVLAN
Command: create 802.1x guest_vlan guestVLAN

Success.

DGS-3000-26TC:admin#
```

4-18 delete 802.1x guest_vlan

Description

This command is used to delete guest VLAN setting, but not delete the static VLAN. All ports which enabled guest VLAN will remove to original VLAN after deleted guest VLAN.

Format

delete 802.1x guest_vlan <vlan_name 32>

Parameters

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the guest VLAN named "guestVLAN":

```
DGS-3000-26TC:admin#delete 802.1x guest_vlan guestVLAN
Command: delete 802.1x guest_vlan guestVLAN

Success.

DGS-3000-26TC:admin#
```

4-19 config 802.1x guest_vlan ports

Description

This command is used to configure guest VLAN setting. If the specific port state is changed from enabled state to disable state, this port will move to its original VLAN.

Format

config 802.1x guest_vlan ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter the list of ports used for guest VLAN.
all - Specify that all the port will be used for guest VLAN.
state - Specify the guest VLAN port state of the configured ports.
enable - Specify to join the guest VLAN.
disable - Specify to be removed from the guest VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Enable on port 2 to 8 to configure 802.1x guest VLAN:

```
DGS-3000-26TC:admin#config 802.1x guest_vlan ports 2-8 state enable
Command: config 802.1x guest_vlan ports 2-8 state enable

Warning, The ports are moved to Guest VLAN.

Success.

DGS-3000-26TC:admin#
```

4-20 config 802.1x trap state

Description

This command is used to enable or disable the sending of 802.1X traps.

Format

config 802.1x trap state [enable | disable]

Parameters

enable - Specify to enable the sending of 802.1x traps.
disable - Specify to disable the sending of 802.1x traps.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

This example shows how to enable the trap state for 802.1x.

```
DGS-3000-26TC:admin# config 802.1x trap state enable
Command: config 802.1x trap state enable

Success.

DGS-3000-26TC:admin#
```

4-21 show 802.1x guest_vlan

Description

This command is used to show the information of guest VLANs.

Format

show 802.1x guest_vlan

Parameters

None.

Restrictions

None.

Example

To show 802.1x guest VLAN on the Switch:

```
DGS-3000-26TC:admin#show 802.1x guest_vlan
Command: show 802.1x guest_vlan

Guest VLAN Setting
-----
Guest VLAN : guestVLAN
Enabled Guest VLAN Ports : 2-8

DGS-3000-26TC:admin#
```

4-22 show auth_statistics

Description

This command is used to display information of authenticator statistics.

Format

show auth_statistics {ports <portlist>}

Parameters

ports - (Optional) Specify a range of ports to be displayed.
<portlist> - Enter the list of ports that will be displayed here.

Restrictions

None.

Example

To display authenticator statistics information for port 1:

```

DGS-3000-26TC:admin#show auth_statistics ports 1
Command: show auth_statistics ports 1

MAC Address : 00-01-02-03-04-05
Port Number : 1

EapolFramesRx           0
EapolFramesTx           9
EapolStartFramesRx      0
EapolReqIdFramesTx      6
EapolLogoffFramesRx     0
EapolReqFramesTx        0
EapolRespIdFramesRx     0
EapolRespFramesRx       0
InvalidEapolFramesRx    0
EapLengthErrorFramesRx  0
LastEapolFrameVersion   0
LastEapolFrameSource    00-00-00-00-00-00

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh

```

4-23 show auth_diagnostics

Description

This command is used to display information of authenticator diagnostics.

Format

show auth_diagnostics {ports <portlist>}

Parameters

-
- ports** - (Optional) Specify a range of ports to be displayed.
 - <portlist>** - Enter the list of ports that will be displayed here.
-

Restrictions

None.

Example

To display authenticator diagnostics information for port 1:

```

DGS-3000-26TC:admin#show auth_diagnostics ports 1
Command: show auth_diagnostics ports 1

Mac Address : 00-01-02-03-04-05
Port Number : 1

EntersConnecting                11
EapLogoffsWhileConnecting       0
EntersAuthenticating            0
SuccessWhileAuthenticating      0
TimeoutsWhileAuthenticating     0
FailWhileAuthenticating         0
ReauthsWhileAuthenticating      0
EapStartsWhileAuthenticating    0
EapLogoffWhileAuthenticating    0
ReauthsWhileAuthenticated      0
EapStartsWhileAuthenticated    0
EapLogoffWhileAuthenticated    0
BackendResponses                0
BackendAccessChallenges         0
BackendOtherRequestsToSupplicant 0
BackendNonNakResponsesFromSupplicant 0
BackendAuthSuccesses           0
BackendAuthFails                0

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh

```

4-24 show auth_session_statistics

Description

This command is used to display information of authenticator session statistics.

Format

show auth_session_statistics {ports <portlist>}

Parameters

ports - (Optional) Specify a range of ports to be displayed.
<portlist> - Enter the list of ports that will be displayed here.

Restrictions

None.

Example

To display authenticator session statistics information for port 1:

```
DGS-3000-26TC:admin#show auth_session_statistics ports 1
```

```
Command: show auth_session_statistics ports 1
```

```
Mac Address : 00-01-02-03-04-05
```

```
Port Number : 1
```

```
SessionOctetsRx          0
SessionOctetsTx          0
SessionFramesRx         0
SessionFramesTx         0
SessionId
SessionAuthenticMethod   Remote Authentication Server
SessionTime              0
SessionTerminateCause    SupplicantLogoff
SessionUserName
```

```
CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

Chapter 5 Access Authentication Control Command List

enable password encryption
disable password encryption
enable authen_policy
disable authen_policy
enable authen_policy_encryption
disable authen_policy_encryption
show authen_policy
create authen_login method_list_name <string 15>
config authen_login [default method_list_name <string 15>] method {tacacs xtacacs tacacs+ radius server_group <string 15> local none}
delete authen_login method_list_name <string 15>
show authen_login [default method_list_name <string 15> all]
create authen_enable method_list_name <string 15>
config authen_enable [default method_list_name <string 15>] method {tacacs xtacacs tacacs+ radius server_group <string 15> local_enable none}
delete authen_enable method_list_name <string 15>
show authen_enable [default method_list_name <string 15> all]
config authen application [console telnet ssh http all] [login enable] [default method_list_name <string 15>]
show authen application
create authen server_group <string 15>
config authen server_group [tacacs xtacacs tacacs+ radius <string 15>] [add delete] server_host [<ipaddr> ipv6 <ipv6addr>] protocol [tacacs xtacacs tacacs+ radius]
delete authen server_group <string 15>
show authen server_group {<string 15>}
create authen server_host [<ipaddr> ipv6 <ipv6addr>] protocol [tacacs xtacacs tacacs+ radius] {port <int 1-65535> [key [<key_string 254> none] encryption_key <key_string 344>] timeout <int 1-255> retransmit <int 1-20>}
config authen server_host [<ipaddr> ipv6 <ipv6addr>] protocol [tacacs xtacacs tacacs+ radius] {port <int 1-65535> [key [<key_string 254> none] encryption_key <key_string 344>] timeout <int 1-255> retransmit <int 1-20>}
delete authen server_host [<ipaddr> ipv6 <ipv6addr>] protocol [tacacs xtacacs tacacs+ radius]
show authen server_host
config authen parameter response_timeout <int 0-255>
config authen parameter attempt <int 1-255>
show authen parameter
enable admin
config admin local_enable {encrypt [plain_text sha_1] <password>}
create accounting method_list_name <string 15>
config accounting [default method_list_name <string 15>] method {tacacs+ radius server_group <string 15> none}
delete accounting method_list_name <string 15>
show accounting [default method_list_name <string 15> all]
config accounting service command {administrator operator power_user user} [method_list_name <string> none]
config accounting service [network shell system] state [enable {[radius_only method_list_name <string 15> default_method_list]} disable]
show accounting service
show aaa

5-1 enable password encryption

Description

This command is used to enable password encryption. The user account configuration information will be stored in the configuration file, and can be applied to the system later.

If the password encryption is enabled, the password will be in encrypted form.

Format

enable password encryption

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable the password encryption:

```
DGS-3000-26TC:admin#enable password encryption
Command: enable password encryption

Success.

DGS-3000-26TC:admin#
```

5-2 disable password encryption

Description

This command is used to disable password encryption. The user account configuration information will be stored in the configuration file, and can be applied to the system later.

When password encryption is disabled, if the user Specify the password in plain text form, the password will be in plain text form. However, if the user Specify the password in encrypted form, or if the password has been converted to encrypted form by the last enable password encryption command, the password will still be in the encrypted form. It can not be reverted to the plaintext.

Format

disable password encryption

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable the password encryption:

```
DGS-3000-26TC:admin#disable password encryption
Command: disable password encryption

Success.

DGS-3000-26TC:admin#
```

5-3 enable authen_policy

Description

This command is used to enable system access authentication policy.

Enable system access authentication policy. When authentication is enabled, the device will adopt the login authentication method list to authenticate the user for login, and adopt the enable authentication method list to authenticate the enable password for promoting the user's privilege to Admin level.

Format

enable authen_policy

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable system access authentication policy:

```
DGS-3000-26TC:admin#enable authen_policy
Command: enable authen_policy

Success.

DGS-3000-26TC:admin#
```

5-4 disable authen_policy

Description

This command is used to disable system access authentication policy.

Disable system access authentication policy. When authentication is disabled, the device will adopt the local user account database to authenticate the user for login, and adopt the local enable password to authenticate the enable password for promoting the user's privilege to Admin level.

Format

disable authen_policy

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable system access authentication policy:

```
DGS-3000-26TC:admin#disable authen_policy
Command: disable authen_policy

Success.

DGS-3000-26TC:admin#
```

5-5 enable authen_policy_encryption

Description

This command is used to enable the authentication policy encryption. When enabled, TACACS+ and RADIUS key will be in the encrypted form.

Format

enable authen_policy_encryption

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable the authentication policy encryption:

```
DGS-3000-26TC:admin#enable authen_policy_encryption
Command: enable authen_policy_encryption

Success.

DGS-3000-26TC:admin#
```

5-6 disable authen_policy_encryption

Description

This command is used to disable the authentication policy encryption. When disabled, TACACS+ and RADIUS key will be in the plain text form.

Format

disable authen_policy_encryption

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable the authentication policy encryption:

```
DGS-3000-26TC:admin#disable authen_policy_encryption
Command: disable authen_policy_encryption

Success.

DGS-3000-26TC:admin#
```

5-7 show authen_policy

Description

This command is used to display that system access authentication policy is enabled or disabled.

Format

show authen_policy

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To display system access authentication policy:

```
DGS-3000-26TC:admin#show authen_policy
Command: show authen_policy

Authentication Policy : Enabled

DGS-3000-26TC:admin#
```

5-8 create authen_login

Description

This command is used to create a user-defined method list of authentication methods for user login. The maximum supported number of the login method lists is 8.

Format

create authen_login method_list_name <string 15>

Parameters

<string 15> - Enter the user-defined method list name. This value can be up to 15 characters long.

Restrictions

Only Administrators can issue this command.

Example

To create a user-defined method list for user login:

```
DGS-3000-26TC:admin#create authen_login method_list_name login_list_1
Command: create authen_login method_list_name login_list_1

Success.

DGS-3000-26TC:admin#
```

5-9 config authen_login**Description**

This command is used to configure a user-defined or default method list of authentication methods for user login. The sequence of methods will affect the authentication result. For example, if the sequence is TACACS+ first, then TACACS and local, when user tries to login, the authentication request will be sent to the first server host in TACACS+ built-in server group. If the first server host in TACACS+ group is missing, the authentication request will be sent to the second server host in TACACS+ group, and so on. If all server hosts in TACACS+ group are missing, the authentication request will be sent to the first server host in TACACS group. If all server hosts in TACACS group are missing, the local account database in the device is used to authenticate this user. When user logs in the device successfully while using methods like TACACS/XTACACS/TACACS+/RADIUS built-in or user-defined server groups or none, the "user" privilege level is assigned only. If user wants to get admin privilege level, user must use the "enable admin" command to promote his privilege level. But when local method is used, the privilege level will depend on this account privilege level stored in the local device.

Format

config authen_login [default | method_list_name <string 15>] method {tacacs | xtacacs | tacacs+ | radius | server_group <string 15> | local | none}

Parameters

default - The default method list of authentication methods.

method_list_name - The user-defined method list of authentication methods.

<string 15> - Enter the method list name here. This value can be up to 15 characters long.

method - Specify the authentication method used.

tacacs - (Optional) Specify to authenticate by using the built-in server group called "TACACS".

xtacacs - (Optional) Specify to authenticate by using the built-in server group called "XTACACS".

tacacs+ - (Optional) Specify to authenticate by using the built-in server group called "TACACS+".

radius - (Optional) Specify to authenticate by using the built-in server group called "RADIUS".

server_group - (Optional) Specify to authenticate by using the user-defined server group.

<string 15> - Enter the server group value here. This value can be up to 15 characters long.

local - (Optional) Specify to authenticate by local user account database in device.

none - (Optional) No authentication.

Restrictions

Only Administrators can issue this command.

Example

To configure a user-defined method list for user login:

```
DGS-3000-26TC:admin#config authen_login method_list_name login_list_1 method tacacs+ tacacs local
Command: config authen_login method_list_name login_list_1 method tacacs+ tacacs local

Success.

DGS-3000-26TC:admin#
```

5-10 delete authen_login

Description

This command is used to delete a user-defined method list of authentication methods for user login.

Format

delete authen_login method_list_name <string 15>

Parameters

<string 15> - Enter the user-defined method list name. This value can be up to 15 characters long.

Restrictions

Only Administrators can issue this command.

Example

To delete a user-defined method list for user login:

```
DGS-3000-26TC:admin#delete authen_login method_list_name login_list_1
Command: delete authen_login method_list_name login_list_1

Success.

DGS-3000-26TC:admin#
```

5-11 show authen_login

Description

This command is used to display the method list of authentication methods for user login.

Format

show authen_login [default | method_list_name <string 15> | all]

Parameters**default** - Displays default user-defined method list for user login.**method_list_name** - Displays the specific user-defined method list for user login.**<string 15>** - Enter the method list name here. This value can be up to 15 characters long.**all** - Displays all method lists for user login.**Restrictions**

Only Administrators can issue this command.

Example

To display a user-defined method list for user login:

```
DGS-3000-26TC:admin#show authen_login method_list_name login_list_1
Command: show authen_login method_list_name login_list_1

Method List Name  Priority  Method Name      Comment
-----
login_list_1      1        tacacs+           Built-in Group
                  2        tacacs            Built-in Group
                  3        mix_1             User-defined Group
                  4        local             Keyword

DGS-3000-26TC:admin#
```

5-12 create authen_enable

Description

This command is used to create a user-defined method list of authentication methods for promoting user's privilege to Admin level.

Format**create authen_enable method_list_name <string 15>****Parameters****<string 15>** - Enter the user-defined method list name. This value can be up to 15 characters long.**Restrictions**

Only Administrators can issue this command.

Example

To create a user-defined method list for promoting user's privilege to Admin level:

```
DGS-3000-26TC:admin#create authen_enable method_list_name enable_list_1
Command: create authen_enable method_list_name enable_list_1

Success.

DGS-3000-26TC:admin#
```

5-13 config authen_enable

Description

This command is used to configure a user-defined or default method list of authentication methods for promoting user's privilege to Admin level. The sequence of methods will affect the alteration result. For example, if the sequence is TACACS+ first, then TACACS and local_enable, when user try to promote user's privilege to Admin level, the authentication request will be sent to the first server host in TACACS+ built-in server group. If the first server host in TACACS+ group is missing, the authentication request will be sent to the second server host in TACACS+ group, and so on. If all server hosts in TACACS+ group are missing, the authentication request will be sent to the first server host in TACACS group. If all server hosts in a TACACS group is missing, the local enable password in the device is used to authenticate this user's password.

Format

```
config authen_enable [default | method_list_name <string 15>] method {tacacs | xtacacs | tacacs+ | radius | server_group <string 15> | local_enable | none}
```

Parameters

default	- The default method list of authentication methods.
method_list_name	- The user-defined method list of authentication methods.
<string 15>	- Enter the method list name here. This value can be up to 15 characters long.
method	- Specify the authentication method used.
tacacs	- (Optional) Specify to authenticate by using the built-in server group called "TACACS".
xtacacs	- (Optional) Specify to authenticate by using the built-in server group called "XTACACS".
tacacs+	- (Optional) Specify to authenticate by using the built-in server group called "TACACS+".
radius	- (Optional) Specify to authenticate by using the built-in server group called "RADIUS".
server_group	- (Optional) Specify to authenticate by the user-defined server group.
<string 15>	- Enter the server group name here. This value can be up to 15 characters long.
local_enable	- (Optional) Specify to authenticate by local enable password in device.
none	- (Optional) No authentication.

Restrictions

Only Administrators can issue this command.

Example

To configure a user-defined method list for promoting user's privilege to Admin level:

```
DGS-3000-26TC:admin#config authen_enable method_list_name enable_list_1 method tacacs+ tacacs
local_enable
Command: config authen_enable method_list_name enable_list_1 method tacacs+ tacacs
local_enable

Success.

DGS-3000-26TC:admin#
```

5-14 delete authen_enable

Description

This command is used to delete a user-defined method list of authentication methods for promoting user's privilege to Admin level.

Format

```
delete authen_enable method_list_name <string 15>
```


Parameters

<string 15> - Enter the user-defined method list name. This value can be up to 15 characters long.

Restrictions

Only Administrators can issue this command.

Example

To delete a user-defined method list for promoting user's privilege to Admin level:

```
DGS-3000-26TC:admin#delete authen_enable method_list_name enable_list_1
Command: delete authen_enable method_list_name enable_list_1

Success.

DGS-3000-26TC:admin#
```

5-15 show authen_enable

Description

This command is used to display the method list of authentication methods for promoting user's privilege to Admin level.

Format

show authen_enable [default | method_list_name <string 15> | all]

Parameters

default - Displays default user-defined method list for promoting user's privilege to Admin level.
method_list_name - Displays the specific user-defined method list for promoting user's privilege to Admin level.
<string 15> - Enter the method list name here. This value can be up to 15 characters long.
all - Displays all method lists for promoting user's privilege to Admin level.

Restrictions

Only Administrators can issue this command.

Example

To display all method lists for promoting user's privilege to Admin level:

```
DGS-3000-26TC:admin#show authen_enable method_list_name enable_list_1
Command: show authen_enable method_list_name enable_list_1

Method List Name  Priority  Method Name      Comment
-----
enable_list_1    1        tacacs+          Built-in Group
                  2        tacacs           Built-in Group
                  3        mix_1            User-defined Group
                  4        local_enable     Keyword

DGS-3000-26TC:admin#
```

5-16 config authen application

Description

This command is used to configure login or enable method list for all or the specified application.

Format

```
config authen application [console | telnet | ssh | http | all] [login | enable] [default | method_list_name
<string 15>]
```

Parameters

console - Application: console.

telnet - Application: Telnet.

ssh - Application: SSH.

http - Application: web.

all - Application: console, Telnet, SSH, and web.

login - Selects the method list of authentication methods for user login.

enable - Selects the method list of authentication methods for promoting user's privilege to Admin level.

default - Default method list.

method_list_name - The user-defined method list name.

<string 15> - Enter the method list name here. This value can be up to 15 characters long.

Restrictions

Only Administrators can issue this command.

Example

To configure the login method list for Telnet:

```
DGS-3000-26TC:admin#config authen application telnet login method_list_name login_list_1
Command: config authen application telnet login method_list_name login_list_1

Success.

DGS-3000-26TC:admin#
```

5-17 show authen application

Description

This command is used to display the login/enable method list for all applications.

Format**show authen application****Parameters**

None.

Restrictions

Only Administrators can issue this command.

Example

To display the login/enable method list for all applications:

```
DGS-3000-26TC:admin#show authen application
Command: show authen application

Application      Login Method List      Enable Method List
-----
Console         default                 default
Telnet          login_list_1           default
SSH             default                 default
HTTP            default                 default

DGS-3000-26TC:admin#
```

5-18 create authen server_group**Description**

This command is used to create a user-defined authentication server group. The maximum supported number of server groups including built-in server groups is 8. Each group consists of 8 server hosts as maximum.

Format**create authen server_group <string 15>****Parameters**

<string 15> - Enter the user-defined server group name. This value can be up to 15 characters long.

Restrictions

Only Administrators can issue this command.

Example

To create a user-defined authentication server group:

```
DGS-3000-26TC:admin#create authen server_group mix_1
Command: create authen server_group mix_1

Success.

DGS-3000-26TC:admin#
```

5-19 config authen server_group

Description

This command is used to add or remove an authentication server host to or from the specified server group. Built-in server group "TACACS", "XTACACS", "TACACS+", "RADIUS" accepts the server host with the same protocol only, but user-defined server group can accept server hosts with different protocols.

Format

```
config authen server_group [tacacs | xtacacs | tacacs+ | radius | <string 15>] [add | delete] server_host
[<ipaddr> | ipv6 <ipv6addr> ] protocol [tacacs | xtacacs | tacacs+ | radius]
```

Parameters

tacacs - Built-in server group "TACACS".
xtacacs - Built-in server group "XTACACS".
tacacs+ - Built-in server group "TACACS+".
radius - Built-in server group "RADIUS".
<string 15> - Enter the server group name here. This value can be up to 15 characters long.

add - Adds a server host to a server group.
delete - Removes a server host from a server group.

server_host - Specify the IP address of the server host.
<ipaddr> - Enter the server host IPv4 address.
ipv6 - Specify the server host IPv6 address.
<ipv6addr> - Enter the server host IPv6 address.

protocol - Specify the authentication protocol used.
tacacs - Specify that the TACACS authentication protocol will be used.
xtacacs - Specify that the XTACACS authentication protocol will be used.
tacacs+ - Specify that the TACACS+ authentication protocol will be used.
radius - Specify that the RADIUS authentication protocol will be used.

Restrictions

Only Administrators can issue this command.

Example

To add an authentication server host to an server group:

```
DGS-3000-26TC:admin#config authen server_group mix_1 add server_host 10.1.1.222 protocol
tacacs+
Command: config authen server_group mix_1 add server_host 10.1.1.222 protocol tacacs+

Success.

DGS-3000-26TC:admin#
```

5-20 delete authen server_group

Description

This command is used to delete a user-defined authentication server group.

Format

delete authen server_group <string 15>

Parameters

<string 15> - Enter the user-defined server group name. This value can be up to 15 characters long.

Restrictions

Only Administrators can issue this command.

Example

To delete a user-defined authentication server group:

```
DGS-3000-26TC:admin#delete authen server_group mix_1
Command: delete authen server_group mix_1

Success.

DGS-3000-26TC:admin#
```

5-21 show authen server_group

Description

This command is used to display the authentication server groups.

Format

show authen server_group {<string 15>}

Parameters

<string 15> - (Optional) Enter the built-in or user-defined server group name. This value can be up to 15 characters long.

Restrictions

Only Administrators can issue this command.

Example

To display all authentication server groups:

```
DGS-3000-26TC:admin#show authen server_group
Command: show authen server_group

Group Name          IP Address          Protocol
-----
mix_1               10.1.1.222         tacacs+
                   10.1.1.223         tacacs
radius              10.1.1.224         RADIUS
tacacs              10.1.1.225         tacacs
tacacs+             10.1.1.226         tacacs+
xtacacs             10.1.1.227         xtacacs

Total Entries : 5

DGS-3000-26TC:admin#
```

5-22 create authen server_host

Description

This command is used to create an authentication server host. When an authentication server host is created, IP address and protocol are the index. That means over 1 authentication protocol services can be run on the same physical host. The maximum supported number of server hosts is 16.

Format

```
create authen server_host [<ipaddr> | ipv6 <ipv6addr>] protocol [tacacs | xtacacs | tacacs+ | radius] {port
<int 1-65535> | [key [<key_string 254> | none] | encryption_key <key_string 344>] | timeout <int 1-255> |
retransmit <int 1-20>}
```

Parameters

<ipaddr> - Enter the server host IP address.
ipv6 - Specify the server host IPv6 address.
<ipv6addr> - Enter the server host IPv6 address.
protocol - Specify the host's authentication protocol.
tacacs - Server host's authentication protocol.
xtacacs - Server host's authentication protocol.
tacacs+ - Server host's authentication protocol.
radius - Server host's authentication protocol.
port - (Optional) The port number of authentication protocol for server host. Default value for TACACS/XTACACS/TACACS+ is 49. Default value for RADIUS is 1812.
<int 1-65535> - Enter the authentication protocol port number here. This value must be between 1 and 65535.
key - (Optional) The key for TACACS+ and RADIUS authentication. If the value is null, no encryption will apply. This value is meaningless for TACACS and XTACACS.
<key_string 254> - Enter the TACACS+ or the RADIUS key here. This key can be up to 254 characters long.
none - No encryption for TACACS+ and RADIUS authentication. This value is meaningless for TACACS and XTACACS.
encryption_key - (Optional) Specify the encrypted form key string for TACACS+ and RADIUS authentication. This value is meaningless for TACACS and XTACACS. The encryption algorithm is based on DES.
<key_string 344> - Enter the encrypted form key string for TACACS+ and RADIUS authentication.
timeout - (Optional) The time in second for waiting server reply. Default value is 5 seconds.
<int 1-255> - Enter the timeout value here. This value must be between 1 and 255 seconds.
retransmit - (Optional) The count for re-transmit. This value is meaningless for TACACS+. Default value is 2.
<int 1-20> - Enter the re-transmit value here. This value must be between 1 and 20.

Restrictions

Only Administrators can issue this command.

Example

To create a TACACS+ authentication server host, its listening port number is 15555 and timeout value is 10 seconds:

```
DGS-3000-26TC:admin#create authen server_host 10.1.1.222 protocol tacacs+ port 15555 timeout 10
Command: create authen server_host 10.1.1.222 protocol tacacs+ port 15555 timeout 10

Key is empty for tacacs+ or RADIUS.
Success.

DGS-3000-26TC:admin#
```

5-23 config authen server_host

Description

This command is used to configure an authentication server host.

Format

```
config authen server_host [<ipaddr> | ipv6 <ipv6addr>] protocol [tacacs | xtacacs | tacacs+ | radius] {port <int 1-65535> | [ key [<key_string 254> | none] | encryption_key <key_string 344> ] | timeout <int 1-255> | retransmit <int 1-20>}
```

Parameters

<ipaddr> - Enter the server host IP address.
ipv6 - Specify the server host IPv6 address. <ipv6addr> - Enter the server host IPv6 address.
protocol - Specify the server host's authentication protocol. tacacs - Server host's authentication protocol. xtacacs - Server host's authentication protocol. tacacs+ - Server host's authentication protocol. radius - Server host's authentication protocol.
port - (Optional) The port number of authentication protocol for server host. Default value for TACACS/XTACACS/TACACS+ is 49. Default value for RADIUS is 1812. <int 1-65535> - Enter the port number here. This value must be between 1 and 65535.
key - (Optional) The key for TACACS+ and RADIUS authentication. If the value is null, no encryption will apply. This value is meaningless for TACACS and XTACACS. <key_string 254> - Enter the TACACS+ key here. This value can be up to 254 characters long. none - No encryption for TACACS+ and RADIUS authentication. This value is meaningless for TACACS and XTACACS.
encryption_key - (Optional) Specify the encrypted form key string for TACACS+ and RADIUS authentication. This value is meaningless for TACACS and XTACACS. The encryption algorithm is based on DES. <key_string 344> - Enter the encrypted form key string for TACACS+ and RADIUS authentication.
timeout - (Optional) The time in second for waiting server reply. Default value is 5 seconds. <int 1-255> - Enter the timeout value here. This value must be between 1 and 255 seconds.
retransmit - (Optional) The count for re-transmit. This value is meaningless for TACACS+. Default value is 2. <int 1-20> - Enter the re-transmit value here. This value must be between 1 and 20.

Restrictions

Only Administrators can issue this command.

Example

To configure a TACACS+ authentication server host's key value:

```
DGS-3000-26TC:admin#config authen server_host 10.1.1.222 protocol tacacs+ key "This is a
secret."
Command: config authen server_host 10.1.1.222 protocol tacacs+ key "This is a secret."

Success.

DGS-3000-26TC:admin#
```

5-24 delete authen server_host

Description

This command is used to delete an authentication server host.

Format

delete authen server_host [**<ipaddr>** | **ipv6 <ipv6addr>**] **protocol** [**tacacs** | **xtacacs** | **tacacs+** | **radius**]

Parameters

<ipaddr> - Enter the server host's IP address.

ipv6 - Specify the server host IPv6 address.

<ipv6addr> - Enter the server host IPv6 address.

protocol - Specify that server host's authentication protocol.

tacacs - Server host's authentication protocol.

xtacacs - Server host's authentication protocol.

tacacs+ - Server host's authentication protocol.

radius - Server host's authentication protocol.

Restrictions

Only Administrators can issue this command.

Example

To delete an authentication server host:

```
DGS-3000-26TC:admin#delete authen server_host 10.1.1.222 protocol tacacs+
Command: delete authen server_host 10.1.1.222 protocol tacacs+

Success.

DGS-3000-26TC:admin#
```

5-25 show authen server_host

Description

This command is used to display the authentication server hosts.

Format

show authen server_host

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To display all authentication server hosts:

```
DGS-3000-26TC:admin#show authen server_host
Command: show authen server_host

IP Address          Protocol  Port    Timeout  Retransmit  Key
-----
10.1.1.222          tacacs+  15555   10       -----    This is a secret.

Total Entries : 1

DGS-3000-26TC:admin#
```

5-26 config authen parameter response_timeout**Description**

This command is used to configure the amount of time waiting or user input on console, Telnet, SSH application.

Format

config authen parameter response_timeout <int 0-255>

Parameters

<int 0-255> - Enter the timeout response time for user input on console, Telnet or SSH. 0 means there is no time out. This value must be between 0 and 255. Default value is 30 seconds.

Restrictions

Only Administrators can issue this command.

Example

To configure the amount of time waiting or user input to be 60 seconds:

```
DGS-3000-26TC:admin#config authen parameter response_timeout 60
Command: config authen parameter response_timeout 60

Success.

DGS-3000-26TC:admin#
```

5-27 config authen parameter attempt

Description

This command is used to configure the maximum attempts for user's trying to login or promote the privilege on console, Telnet, or SSH application.

Format

config authen parameter attempt <int 1-255>

Parameters

<int 1-255> - Enter the amount of attempts for user's trying to login or promote the privilege on console, Telnet or SSH. This value must be between 1 and 255. Default value is 3.

Restrictions

Only Administrators can issue this command.

Example

To configure the maximum attempts for user's trying to login or promote the privilege to be 9:

```
DGS-3000-26TC:admin#config authen parameter attempt 9
Command: config authen parameter attempt 9

Success.

DGS-3000-26TC:admin#
```

5-28 show authen parameter

Description

This command is used to display the parameters of authentication.

Format

show authen parameter

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To display the parameters of authentication:

```
DGS-3000-26TC:admin#show authen parameter
Command: show authen parameter

Response Timeout : 60 seconds
User Attempts    : 9

DGS-3000-26TC:admin#
```

5-29 enable admin

Description

This command is used to enter the administrator level privilege. Promote the "user" privilege level to "admin" level. When the user enters this command, the authentication method TACACS, XTACACS, TACACS+, user-defined server groups, local_enable or none will be used to authenticate the user. Because TACACS, XTACACS and RADIUS don't support "enable" function in itself, if user wants to use either one of these 3 protocols to do enable authentication, user must create a special account on the server host first, which has a username "enable" and then configure its password as the enable password to support "enable" function.

This command can not be used when authentication policy is disabled.

Format

enable admin

Parameters

None.

Restrictions

None.

Example

To enable administrator lever privilege:

```
DGS-3000-26TC:puser#enable admin
Command: enable admin

PassWord:*****
Success.

DGS-3000-26TC:admin#
```

5-30 config admin local_enable

Description

This command is used to config the local enable password of administrator level privilege. When the user chooses the "local_enable" method to promote the privilege level, the enable password of local device is needed. When the password information is not specified in the command, the system will prompt the user to input the password interactively. For this case, the user can only input the plain text password. If the password is present in the command, the user can select to input the password in the plain text form or in the encrypted form. The encryption algorithm is based on SHA-1.

Format

```
config admin local_enable {encrypt [plain_text | sha_1] <password>}
```

Parameters

encrypt - (Optional) Specify the password form.

plain_text - Specify the password in plain text form.

sha_1 - Specify the password in SHA-1 encrypted form.

<password> - (Optional) Enter the password for promoting the privilege level. The length for a password in plain-text form and SHA-1 encrypted form are different.

Restrictions

Only Administrators can issue this command.

Example

To configure the administrator password:

```
DGS-3000-26TC:admin#config admin local_enable
Command: config admin local_ebable

Enter the old password:
Enter the case-sensitive new password:*****
Enter the new password again for confirmation:*****
Success.

DGS-3000-26TC:admin#
```

5-31 create accounting method_list_name

Description

This command is used to create a user-defined list of accounting methods for accounting services on the Switch. The maximum supported number of accounting method lists is 8.

Format

```
create accounting method_list_name <string 15>
```

Parameters

<string 15> - Enter the built-in or user-defined method list.

Restrictions

Only Administrators can issue this command.

Example

To create a user-defined accounting method list called "shell_acct":

```
DGS-3000-26TC:admin#create accounting method_list_name shell_acct
Command: create accounting method_list_name shell_acct

Success.

DGS-3000-26TC:admin#
```

5-32 config accounting

Description

This command is used to configure a user-defined or default method list of accounting methods.

Format

config accounting [**default** | **method_list_name** <string 15>] **method** {**tacacs+** | **radius** | **server_group** <string 15> | **none**}

Parameters

default - Specify the default method list of accounting methods.

method_list_name - Specify the user-defined method list of accounting methods.
 <string 15> - Enter the name of the method list.

method - Specify the protocol.
tacacs+ - Specify the built-in TACACS+ server group.
radius - Specify the built-in RADIUS server group.
server_group - Specify the user-defined server group. If the group contains TACACS and XTACACS server, it will be skipped in accounting.
 <string 15> - Enter the name of server group.
none - Specify no accounting.

Restrictions

Only Administrators can issue this command.

Example

To configure a user-defined method list called "shell_acct", that Specify a sequence of the built-in TACACS+ server group, followed by the RADIUS server group for accounting service on the Switch:

```
DGS-3000-26TC:admin#config accounting method_list_name shell_acct method tacacs+ radius
Command: config accounting method_list_name shell_acct method tacacs+ radius

Success.

DGS-3000-26TC:admin#
```

5-33 delete accounting method_list_name

Description

This command is used to delete a user-defined method list of accounting methods.

Format

delete accounting method_list_name <string 15>

Parameters

<string 15> - Enter the built-in or user-defined method list.

Restrictions

Only Administrators can issue this command.

Example

To delete the user-defined accounting method list called "shell_acct" from the Switch:

```
DGS-3000-26TC:admin#delete accounting method_list_name shell_acct
Command: delete accounting method_list_name shell_acct

Success.

DGS-3000-26TC:admin#
```

5-34 show accounting

Description

This command is used to display the list of accounting methods on the Switch.

Format

show accounting [default | method_list_name <string 15> | all]

Parameters

default - Displays the user-defined list of default accounting methods.

method_list_name - Specify the user-defined list of specific accounting methods.

<string 15> - Enter the name of the method list.

all - Displays all accounting method lists on the Switch.

Restrictions

Only Administrators can issue this command.

Example

To display the user-defined accounting method list called "shell_acct":

```
DGS-3000-26TC:admin#show accounting method_list_name shell_acct
Command: show accounting method_list_name shell_acct

Method List Name  Priority  Method Name      Comment
-----
shell_acct        1         tacacs+           Built-in Group
                  2         radius            Built-in Group

DGS-3000-26TC:admin#
```

5-35 config accounting service command

Description

This command is used to configure the state of the specified accounting service.

Format

config accounting service command {administrator | operator | power_user | user} [method_list_name <string> | none]

Parameters

administrator - Accounting service for all administrator level commands.
operator - Accounting service for all operator level commands.
power_user - Accounting service for all power-user level commands.
user - Accounting service for all user level commands.
method_list_name - Specify accounting service by the AAA user-defined method list specified by the create accounting method_list_name <string 15> command.
<string> - Enter the name of the method list.
none - Disables AAA command accounting services by specified command level.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure AAA accounting methodlist "shell_acct" for accounting all administrator commands:

```
DGS-3000-26TC:admin#config accounting service command method_list_name shell_acct
Command: config accounting service command method_list_name shell_acct

Success.

DGS-3000-26TC:admin#
```

5-36 config accounting service

Description

This command is used to configure the state of the specified RADIUS accounting service.

Format

config accounting service [network | shell | system] state [enable {[radius_only | method_list_name <string 15> | default_method_list]} | disable]

Parameters

network - Accounting service for 802.1X, JWAC and WAC port access control. By default, the service is disabled.
shell - Accounting service for shell events: When user logs on or out the Switch (via the console, Telnet, or SSH) and timeout occurs, accounting information will be collected and sent to RADIUS server. By default, the service is disabled.
system - Accounting service for system events: reset, reboot. By default, the service is disabled.
state - Specify the state of the specified service.
enable - Specify to enable the specified accounting service.
radius_only - (Optional) Specify accounting service to only use RADIUS group specified by the config

radius add command.

method_list_name - (Optional) Specify accounting service by the AAA user-defined method list specified by the "create accounting method_list_name <string 15>" command.

<string 15> - Enter the method list name.

default_method_list - (Optional) Specify accounting service by the AAA default method list.

disable - Specify to disable the specified accounting service.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Enable it to configure accounting shell state:

```
DGS-3000-26TC:admin#config accounting service shell state enable
Command: config accounting service shell state enable

Success.

DGS-3000-26TC:admin#
```

5-37 show accounting service

Description

This command is used to show the status of RADIUS accounting services.

Format

show accounting service

Parameters

None.

Restrictions

None.

Example

To show information of RADIUS accounting services:

```
DGS-3000-26TC:admin#show accounting service
Command: show accounting service

Accounting State    Method
-----
Network : Disabled
Shell   : Disabled
System  : Disabled

DGS-3000-26TC:admin#
```


5-38 show aaa

Description

This command is used to display AAA global configuration

Format

show aaa

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To display AAA global configuration:

```
DGS-3000-26TC:admin#show aaa
Command: show aaa

Authentication Policy: Enabled
Accounting Network Service State: Disabled
Accounting Network Service Method:
Accounting Shell Service State: Disabled
Accounting Shell Service Method:
Accounting System Service State: Disabled
Accounting System Service Method:
Accounting Admin Command Service Method:
Accounting Operator Command Service Method:
Accounting PowerUser Command Service Method:
Accounting User Command Service Method:

DGS-3000-26TC:admin#
```

Chapter 6 Access Control List (ACL) Command List

```
create access_profile profile_id <value 1-512> {profile_name <name 32>} [ethernet {vlan {<hex 0x0-0x0fff>} | source_mac <macmask 000000000000-ffffffff> | destination_mac <macmask 000000000000-ffffffff> | 802.1p | ethernet_type} | ip {vlan {<hex 0x0-0x0fff>} | source_ip_mask <netmask> | destination_ip_mask <netmask> | dscp | [icmp {type | code} | igmp {type} | tcp {src_port_mask <hex 0x0-0xffff> | dst_port_mask <hex 0x0-0xffff> | flag_mask [all | {urg | ack | psh | rst | syn | fin}]} | udp {src_port_mask <hex 0x0-0xffff> | dst_port_mask <hex 0x0-0xffff>} | protocol_id_mask <hex 0x0-0xff> {user_define_mask <hex 0x0-0xffffffff>}}] | packet_content_mask { offset_chunk_1 <value 0-31> <hex 0x0-0xffffffff> | offset_chunk_2 <value 0-31> <hex 0x0-0xffffffff> | offset_chunk_3 <value 0-31> <hex 0x0-0xffffffff> | offset_chunk_4 <value 0-31> <hex 0x0-0xffffffff>} | ipv6 {class | flowlabel | source_ipv6_mask <ipv6mask> | destination_ipv6_mask <ipv6mask> | [tcp {src_port_mask <hex 0x0-0xffff> | dst_port_mask <hex 0x0-0xffff>} | udp { src_port_mask <hex 0x0-0xffff> | dst_port_mask <hex 0x0-0xffff>} | icmp {type | code} ]}]
```

```
delete access_profile [profile_id <value 1-512> | profile_name <name 32> | all]
```

```
config access_profile [profile_id <value 1-512> | profile_name <name 32>] [add access_id [auto_assign | <value 1-256>][ethernet {vlan <vlan_name 32> | vlan_id <vlanid 1-4094>} {mask <hex 0x0-0x0fff>} | source_mac <macaddr> {mask <macmask>} | destination_mac <macaddr> {mask <macmask>} | 802.1p <value 0-7> | ethernet_type <hex 0x0-0xffff>} | ip {[vlan <vlan_name 32> | vlan_id <vlanid 1-4094>} {mask <hex 0x0-0x0fff>} | source_ip <ipaddr> {mask <netmask>} | destination_ip <ipaddr> {mask <netmask>} | dscp <value 0-63> | [icmp {type <value 0-255> | code <value 0-255>} | igmp {type <value 0-255>} | tcp {src_port <value 0-65535> {mask <hex 0x0-0xffff>} | dst_port <value 0-65535> {mask <hex 0x0-0xffff>} | flag [all | {urg | ack | psh | rst | syn | fin}]} | udp {src_port <value 0-65535> {mask <hex 0x0-0xffff>} | dst_port <value 0-65535> {mask <hex 0x0-0xffff>}}] | protocol_id <value 0-255> {user_define <hex 0x0-0xffffffff> {mask <hex 0x0-0xffffffff>}}] | packet_content {offset_chunk_1 <hex 0x0-0xffffffff> {mask <hex 0x0-0xffffffff>} | offset_chunk_2 <hex 0x0-0xffffffff> {mask <hex 0x0-0xffffffff>} | offset_chunk_3 <hex 0x0-0xffffffff> {mask <hex 0x0-0xffffffff>} | offset_chunk_4 <hex 0x0-0xffffffff> {mask <hex 0x0-0xffffffff>}}] | ipv6 {class <value 0-255> | flowlabel <hex 0x0-0xffff> | source_ipv6 <ipv6addr> {mask <ipv6mask>} | destination_ipv6 <ipv6addr> {mask <ipv6mask>} | [tcp {src_port <value 0-65535> {mask <hex 0x0-0xffff>} | dst_port <value 0-65535> {mask <hex 0x0-0xffff>}} | udp {src_port <value 0-65535> {mask <hex 0x0-0xffff>} | dst_port <value 0-65535> {mask <hex 0x0-0xffff>}} | icmp {type <value 0-255> | code <value 0-255>}}] [port [<portlist> | all] | vlan_based [vlan <vlan_name 32> | vlan_id <vlanid 1-4094>]] [permit {priority <value 0-7> {replace_priority} | [replace_dscp_with <value 0-63> | replace_tos_precedence_with <value 0-7>] | counter[enable | disable]} | mirror | deny] {time_range <range_name 32>} | delete access_id <value 1-256>]
```

```
show access_profile {[profile_id <value 1-512> | profile_name <name 32>}]
```

```
config flow_meter [profile_id <value 1-512> | profile_name <name 32>] access_id <value 1-256> [rate [<value 1-1048576>] {burst_size [<value 1-262144>]} rate_exceed [drop_packet | remark_dscp <value 0-63>] | tr_tcm cir <value 1-1048576> {cbs <value 1-262144>} pir <value 1-1048576> {pbs <value 1-262144>} {[color_blind | color_aware]}] {conform [permit | replace_dscp <value 0-63>] {counter [enable | disable]}} exceed [permit {replace_dscp <value 0-63> | drop} {counter [enable | disable]} violate [permit {replace_dscp <value 0-63>} | drop] {counter [enable | disable]} | sr_tcm cir <value 1-1048576> cbs <value 1-262144> ebs <value 1-262144> {[color_blind | color_aware]}] {conform [permit | replace_dscp <value 0-63>] {counter [enable | disable]}} exceed [permit {replace_dscp <value 0-63>} | drop] {counter [enable | disable]} violate [permit {replace_dscp <value 0-63>} | drop] {counter [enable | disable]} | delete]
```

```
show flow_meter {[profile_id <value 1-512> | profile_name <name 32>} {access_id <value 1-256>}]
```

```
config time_range <range_name 32> [hours start_time <time hh:mm:ss> end_time <time hh:mm:ss> weekdays <daylist> | delete]
```

```
show time_range
```

```
show current_config access_profile
```

6-1 create access_profile

Description

This command is used to create access control list profiles.

When creating ACL, each profile can have 256 rules/access IDs. However, when creating ACL type as Ethernet or IPv4 at the first time, 62 rules are reserved for the system. In this case, only 194 rules are available to configure. You can use the **show access_profile** command to see the available rules.

Support for field selections can have additional limitations that are project dependent.

For example, for some hardware, it may be invalid to specify a destination and source IPv6 address at the same time. The user will be prompted with these limitations.

The Switch supports the following profile types:

1. MAC DA, MAC SA, Ethernet Type, Outer VLAN Tag
2. Outer VLAN Tag, Source IPv4, Destination IPv4, DSCP, Protocol ID, TCP/UDP Source Port, TCP/UDP Destination Port, ICMP type/code, IGMP type, TCP flags
3. Source IPv6 Address, Class, Flow Label, IPv6 Protocol (Next Header)
4. Destination IPv6 Address, Class, Flow Label, IPv6 Protocol (Next Header)
5. Class, Flow Label, IPv6 Protocol (Next Header), TCP/UDP source port, TCP/UDP destination port, ICMP type/code, Outer VLAN Tag
6. Packet Content, Outer VLAN Tag
7. MAC SA, Ethernet Type, Source IPv4/ARP sender IP, Outer VLAN Tag
8. LLC Header/SNAP Header, Outer VLAN Tag
9. Source IPv6 Address, Class, IPv6 Protocol (Next Header), Outer VLAN Tag
10. Destination IPv6 Address, Class, IPv6 Protocol (Next Header), Outer VLAN Tag

NOTE: Profile Types 7 and 8 are not user configurable. Only system applications are allowed to create this type of profiles.

Format

```
create access_profile profile_id <value 1-512> {profile_name <name 32>} [ethernet {vlan {<hex 0x0-0x0fff>} | source_mac <macmask 000000000000-ffffffff>} | destination_mac <macmask 000000000000-ffffffff>} | 802.1p | ethernet_type} | ip {vlan {<hex 0x0-0x0fff>} | source_ip_mask <netmask>} | destination_ip_mask <netmask>} | dscp | [icmp {type | code } | igmp {type } | tcp {src_port_mask <hex0x0-0xffff>} | dst_port_mask <hex 0x0-0xffff>} | flag_mask [all | {urg | ack | psh | rst | syn | fin}]] | udp {src_port_mask <hex 0x0-0xffff>} | dst_port_mask <hex 0x0-0xffff>} | protocol_id_mask <hex 0x0-0xff>} {user_define_mask <hex 0x0-0xffffffff>}}] | packet_content_mask { offset_chunk_1 <value 0-31> <hex 0x0-0xffffffff>} | offset_chunk_2 <value 0-31> <hex 0x0-0xffffffff>} | offset_chunk_3 <value 0-31> <hex 0x0-0xffffffff>} | offset_chunk_4 <value 0-31> <hex 0x0-0xffffffff>} | ipv6 {class | flowlabel | source_ipv6_mask <ipv6mask>} | destination_ipv6_mask <ipv6mask>} | [tcp {src_port_mask <hex 0x0-0xffff>} | dst_port_mask <hex 0x0-0xffff>} | udp { src_port_mask <hex 0x0-0xffff>} | dst_port_mask <hex 0x0-0xffff>} | icmp {type | code }]]]
```

Parameters

profile_id - Specify the index of the access list profile. <value 1-512> - Enter the profile ID here. This value must be between 1 and 512.
profile_name - The name of the profile must be specified. The maximum length is 32 characters. <name 32> - Enter the profile name here.
ethernet - Specify this is an ethernet mask. vlan - (Optional) Specify a VLAN mask. Only the last 12 bits of the mask will be considered. <hex 0x0-0x0fff> - Enter the VLAN mask value here. source_mac - (Optional) Specify the source MAC mask. <macmask> - Enter the source MAC address used here. destination_mac - (Optional) Specify the destination MAC mask. <macmask> - Enter the destination MAC address used here. 802.1p - (Optional) Specify the 802.1p priority tag mask. ethernet_type - (Optional) Specify the Ethernet type mask.
ip - Specify this is a IPv4 mask. vlan - (Optional) Specify a VLAN mask. Only the last 12 bits of the mask will be considered. <hex 0x0-0x0fff> -Enter the VLAN mask value here. source_ip_mask - (Optional) Specify a source IP address mask. <netmask> - Enter the source IP address mask here. destination_ip_mask - (Optional) Specify a destination IP address mask. <netmask> - Enter the destination IP address mask here. dscp - (Optional) Specify the DSCP mask. icmp - (Optional) Specify that the rule applies to ICMP traffic. type - Specify the type of ICMP traffic. code - Specify the code of ICMP traffic igmp - (Optional) Specify that the rule applies to IGMP traffic.

type - Specify the type of IGMP traffic.

tcp - (Optional) Specify that the rule applies to TCP traffic.

src_port_mask - (Optional) Specify the TCP source port mask.

<hex 0x0-0xffff> - Enter the TCP source port mask here.

dst_port_mask - (Optional) Specify the TCP destination port mask.

<hex 0x0-0xffff> - Enter the TCP destination port mask here.

flag_mask - (Optional) Specify the TCP flag field mask.

all - Specify that all the flags will be used for the TCP mask.

urg - (Optional) Specify that the TCP flag field will be set to 'urg'.

ack - (Optional) Specify that the TCP flag field will be set to 'ack'.

psh - (Optional) Specify that the TCP flag field will be set to 'psh'.

rst - (Optional) Specify that the TCP flag field will be set to 'rst'.

syn - (Optional) Specify that the TCP flag field will be set to 'syn'.

fin - (Optional) Specify that the TCP flag field will be set to 'fin'.

udp - (Optional) Specify that the rule applies to UDP traffic.

src_port_mask - (Optional) Specify the UDP source port mask.

<hex 0x0-0xffff> - Enter the UDP source port mask here.

dst_port_mask - (Optional) Specify the UDP destination port mask.

<hex 0x0-0xffff> - Enter the UDP destination port mask here.

protocol_id_mask - (Optional) Specify that the rule applies to IP protocol ID traffic.

<0x0-0xff> - Enter the protocol ID mask here.

user_define_mask - (Optional) Specify that the rule applies to the IP protocol ID, and that the mask option behind the IP header length is 4 bytes.

<hex 0x0-0xffffffff> - Enter a user-defined mask value here.

packet_content_mask - Specify the packet content mask. Only one packet_content_mask profile can be created.

offset_chunk_1 - (Optional) Specify that the offset chunk 1 will be used.

<value 0-31> - Enter the offset chunk 1 value here. This value must be between 0 and 31.

<hex 0x0-0xffffffff> - Enter the offset chunk 1 mask here.

offset_chunk_2 - (Optional) Specify that the offset chunk 2 will be used.

<value 0-31> - Enter the offset chunk 2 value here. This value must be between 0 and 31.

<hex 0x0-0xffffffff> - Enter the offset chunk 2 mask here.

offset_chunk_3 - (Optional) Specify that the offset chunk 3 will be used.

<value 0-31> - Enter the offset chunk 3 value here. This value must be between 0 and 31.

<hex 0x0-0xffffffff> - Enter the offset chunk 3 mask here.

offset_chunk_4 - (Optional) Specify that the offset chunk 4 will be used.

<value 0-31> - Enter the offset chunk 4 value here. This value must be between 0 and 31.

<hex 0x0-0xffffffff> - Enter the offset chunk 4 mask here.

ipv6 - Specify this is the IPv6 mask.

class - (Optional) Specify the IPv6 class.

flowlabel - (Optional) Specify the IPv6 flow label.

source_ipv6_mask - (Optional) Specify an IPv6 source sub-mask.

<ipv6mask> - Enter the source IPv6 mask value here.

destination_ipv6_mask - (Optional) Specify an IPv6 destination sub-mask.

<ipv6mask> - Enter the destination IPv6 mask value here.

tcp - (Optional) Specify that the rule applies to TCP traffic.

src_port_mask - (Optional) Specify an IPv6 TCP source port mask.

<hex 0x0-0xffff> - Enter the TCP source port mask value here.

dst_port_mask - (Optional) Specify an IPv6 TCP destination port mask.

<hex 0x0-0xffff> - Enter the TCP destination port mask value here.

udp - (Optional) Specify that the rule applies to UDP traffic.

src_port_mask - Specify the UDP source port mask.

<hex 0x0-0xffff> - Enter the UDP source port mask value here.

dst_port_mask - Specify the UDP destination port mask.

<hex 0x0-0xffff> - Enter the UDP destination port mask value here.

icmp - (Optional) Specify a mask for ICMP filtering.

type - (Optional) Specify the inclusion of the ICMP type field in the mask.

code - (Optional) Specify the inclusion of the ICMP code field in the mask.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create three access profiles:

```
DGS-3000-26TC:admin#create access_profile profile_id 1 profile_name t1 ethernet vlan
source_mac 00-00-00-00-00-01 destination_mac 00-00-00-00-00-02 802.1p ethernet_type
Command: create access_profile profile_id 1 profile_name 1 ethernet vlan source_mac 00-00-00-
00-00-01 destination_mac 00-00-00-00-00-02 802.1p ethernet_type

Success.

DGS-3000-26TC:admin#create access_profile profile_id 2 profile_name 2 ip vlan source_ip_mask
20.0.0.0 destination_ip_mask 10.0.0.0 dscp icmp type code
Command: create access_profile profile_id 2 profile_name t2 ip vlan source_ip_mask 20.0.0.0
destination_ip_mask 10.0.0.0 dscp icmp type code

Success.

DGS-3000-26TC:admin#create access_profile profile_id 4 profile_name 4 packet_content_mask
offset_chunk_1 3 0xFFFF offset_chunk_2 5 0xFF00 offset_chunk_3 14 0xFFFF0000 offset_chunk_4
16 0xFF000000
Command: create access_profile profile_id 4 profile_name 4 packet_content_mask offset_chunk_1
3 0xFFFF offset_chunk_2 5 0xFF00 offset_chunk_3 14 0xFFFF0000 offset_chunk_4 16 0xFF000000

Success.

DGS-3000-26TC:admin#
```

6-2 delete access_profile

Description

This command is used to delete access list profiles. This command can only delete profiles that were created using the ACL module.

Format

delete access_profile [profile_id <value 1-512> | profile_name <name 32> [all]]

Parameters

-
- profile_id** - Specify the index of the access list profile.
<value 1-512> - Enter the profile ID value here. This value must be between 1 and 512.

 - profile_name** - Specify the name of the profile.
<name 32> - Enter the profile name.. The maximum length is 32 characters.

 - all** - Specify that the whole access list profile will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the access list rule with a profile ID of 1:

```
DGS-3000-26TC:admin#delete access_profile profile_id 1
Command: delete access_profile profile_id 1

Success.

DGS-3000-26TC:admin#
```

6-3 config access_profile

Description

This command is used to configure an access list entry. The ACL mirror function works after the mirror has been enabled and the mirror port has been configured using the mirror command.

When applying an access rule to a target, the setting specified in the VLAN field will not take effect if the target is a VLAN.

Format

```
config access_profile [profile_id <value 1-512> | profile_name <name 32>] [add access_id [auto_assign |
<value 1-256>][ethernet {[vlan <vlan_name 32> | vlan_id <vlanid 1-4094>} {mask <hex 0x0-0xffff>} |
source_mac <macaddr> {mask <macmask>} | destination_mac <macaddr> {mask <macmask>} | 802.1p
<value 0-7> | ethernet_type <hex 0x0-0xffff>} | ip {[vlan <vlan_name 32> | vlan_id <vlanid 1-4094>} {mask
<hex 0x0-0xffff>} | source_ip <ipaddr> {mask <netmask>} | destination_ip <ipaddr> {mask <netmask>} |
dscp <value 0-63> | [icmp {type <value 0-255> | code <value 0-255>} | igmp {type <value 0-255>} | tcp
{src_port <value 0-65535> {mask <hex 0x0-0xffff>} | dst_port <value 0-65535> {mask <hex 0x0-0xffff>} | flag
[all | {urg | ack | psh | rst | syn | fin}]] | udp {src_port <value 0-65535> {mask <hex 0x0-0xffff>} | dst_port
<value 0-65535> {mask <hex 0x0-0xffff>}} | protocol_id <value 0-255> {user_define <hex 0x0-0xffffffff>
{mask <hex 0x0-0xffffffff>}}] | packet_content {offset_chunk_1 <hex 0x0-0xffffffff> {mask <hex 0x0-
0xffffffff>} | offset_chunk_2 <hex 0x0-0xffffffff> {mask <hex 0x0-0xffffffff>} | offset_chunk_3 <hex 0x0-
0xffffffff> {mask <hex 0x0-0xffffffff>} | offset_chunk_4 <hex 0x0-0xffffffff> {mask <hex 0x0-0xffffffff>} | ipv6
{class <value 0-255> | flowlabel <hex 0x0-0xffff> | source_ipv6 <ipv6addr> {mask <ipv6mask>} |
destination_ipv6 <ipv6addr> {mask <ipv6mask>} | [tcp {src_port <value 0-65535> {mask <hex 0x0-0xffff>} |
dst_port <value 0-65535> {mask <hex 0x0-0xffff>}} | udp {src_port <value 0-65535> {mask <hex 0x0-0xffff>}
| dst_port <value 0-65535> {mask <hex 0x0-0xffff>}} | icmp {type <value 0-255> | code <value 0-255>}}] [port
[<portlist> | all] | vlan_based [vlan <vlan_name 32> | vlan_id <vlanid 1-4094>]] [permit {priority <value 0-7>
{replace_priority} | [replace_dscp_with <value 0-63> | replace_tos_precedence_with <value 0-7>] |
counter[enable | disable]} | mirror | deny] {time_range <range_name 32>} | delete access_id <value 1-256>]
```

Parameters

-
- profile_id** - Specify the index of the access list profile.
 <value 1-512> - Enter the profile ID value here. This value must be between 1 and 512.

 - profile_name** - Specify the name of the profile.
 <name 32> - Enter the profile name here. This name can be up to 32 characters long.

 - add** - Specify that a profile or a rule will be added.

 - access_id** - Specify the index of the access list entry. The value range is 1-256, but the supported maximum number of entries depends on the project. If the auto_assign option is selected, the access ID is automatically assigned, when adding multiple ports.
 auto_assign - Specify that the access ID will automatically be assigned.
 <value 1-256> - Enter the access ID used here. This value must be between 1 and 256.

 - ethernet** - Specify to configure the ethernet access profile.
 vlan - (Optional) Specify the VLAN name.
 <vlan_name 32> - Enter the name of the VLAN here. This name can be up to 32 characters long.
 vlan_id - (Optional) Specify the VLAN ID used.
 <vlanid 1-4094> - Enter the VLAN ID used here. This value must be between 1 and 4094.
 mask - (Optional) Specify an additional mask parameter that can be configured.
 <hex 0x0-0xffff> - Enter the mask value here.

 - source_mac** - (Optional) Specify the source MAC address.
 <macaddr> - Enter the source MAC address used for this configuration here.
 mask - (Optional) Specify an additional mask parameter that can be configured.
 <macmask> - Enter the source MAC mask used here.

destination_mac - (Optional) Specify the destination MAC address.
<macaddr> - Enter the destination MAC address used for this configuration here.
mask - (Optional) Specify an additional mask parameter that can be configured.
<macmask> - Enter the destination MAC mask here.

802.1p - (Optional) Specify the value of the 802.1p priority tag.
<value 0-7> - Enter the 802.1p priority tag value. The priority tag ranges from 1 to 7.

ethernet_type - (Optional) Specify the Ethernet type.
<hex 0x0-0xffff> - Enter the Ethernet type mask here.

ip - Specify to configure the IP access profile.

vlan - (Optional) Specify a VLAN name.
<vlan_name 32> - Enter the name of the VLAN here. This name can be up to 32 characters long.

vlan_id - (Optional) Specify that VLAN ID used.
<vlanid 1-4094> - Enter the VLAN ID used here. This value must be between 1 and 4094.

mask - (Optional) Specify an additional mask parameter that can be configured.
<hex 0x0-0x0fff> - Enter the mask value here.

source_ip - (Optional) Specify an IP source address.
<ipaddr> - Enter the source IP address used for this configuration here.

mask - (Optional) Specify an additional mask parameter that can be configured.
<netmask> - Enter the source netmask used here.

destination_ip - (Optional) Specify an IP destination address.
<ipaddr> - Enter the destination IP address used for this configuration here.

mask - (Optional) Specify an additional mask parameter that can be configured.
<netmask> - Enter the destination netmask used here.

dscp - (Optional) Specify the value of DSCP. The DSCP value ranges from 0 to 63.
<value 0-63> - Enter the DSCP value here.

icmp - (Optional) Specify to configure the ICMP parameters.
type - (Optional) Specify that the rule will apply to the ICMP Type traffic value.

<value 0-255> - Enter the ICMP type traffic value here. This value must be between 0 and 255.

code - (Optional) Specify that the rule will apply to the ICMP Code traffic value.
<value 0-255> - Enter the ICMP code traffic value here. This value must be between 0 and 255.

igmp - (Optional) Specify to configure the IGMP parameters.
type - (Optional) Specify that the rule will apply to the IGMP Type traffic value.

<value 0-255> - Enter the IGMP type traffic value here. This value must be between 0 and 255.

tcp - Specify to configure the TCP parameters.
src_port - (Optional) Specify that the rule will apply to a range of TCP source ports.

<value 0-65535> - Enter the TCP source port value here. This value must be between 0 and 65535.
mask - (Optional) Specify an additional mask parameter that can be configured.
<hex 0x0-0xffff> - Enter the source port mask here.

dst_port - (Optional) Specify that the rule will apply to a range of TCP destination ports.
<value 0-65535> - Enter the TCP destination port value here. This value must be between 0 and 65535.

mask - (Optional) Specify an additional mask parameter that can be configured.
<hex 0x0-0xffff> - Enter the destination port mask here.

flag - (Optional) Specify the TCP flag fields.

all - Specify that all the TCP flags will be used in this configuration.

urg - (Optional) Specify that the TCP flag field will be set to 'urg'.

ack - (Optional) Specify that the TCP flag field will be set to 'ack'.

psh - (Optional) Specify that the TCP flag field will be set to 'psh'.

rst - (Optional) Specify that the TCP flag field will be set to 'rst'.

syn - (Optional) Specify that the TCP flag field will be set to 'syn'.

fin - (Optional) Specify that the TCP flag field will be set to 'fin'.

udp - Specify to configure the UDP parameters.

src_port - (Optional) Specify the UDP source port range.
<value 0-65535> - Enter the UDP source port value here. This value must be between 0 and 65535.

mask - (Optional) Specify an additional mask parameter that can be configured.
<hex 0x0-0xffff> - Enter the source port mask here.

dst_port - (Optional) Specify the UDP destination port range.
<value 0-65535> - Enter the UDP destination port value here. This value must be between 0 and 65535.

mask - (Optional) Specify an additional mask parameter that can be configured.
<hex 0x0-0xffff> - Enter the destination port mask here.

protocol_id - Specify that the rule will apply to the value of IP protocol ID traffic.

<value 0-255> - Enter the protocol ID used here.

user_define - (Optional) Specify that the rule will apply to the IP protocol ID and that the mask options behind the first 4 bytes of the IP payload.

<hex 0x0-0xffffffff> - Enter the user-defined mask value here.

mask - Specify an additional mask parameter that can be configured.

<hex 0x0-0xffffffff> - Enter the mask value here.

packet_content - A maximum of 4 offsets can be specified. Each offset defines 4 bytes of data which is identified as a single UDF field.

offset_chunk_1 - (Optional) Specify the value of the packet bytes to be matched. Offset chunk 1 will be used.

<hex 0x0-0xffffffff> - Enter the offset chunk 1 mask here.

offset_chunk_2 - (Optional) Specify the value of the packet bytes to be matched. Offset chunk 2 will be used.

<hex 0x0-0xffffffff> - Enter the offset chunk 2 mask here.

offset_chunk_3 - (Optional) Specify the value of the packet bytes to be matched. Offset chunk 3 will be used.

<hex 0x0-0xffffffff> - Enter the offset chunk 3 mask here.

offset_chunk_4 - (Optional) Specify the value of the packet bytes to be matched. Offset chunk 4 will be used.

<hex 0x0-0xffffffff> - Enter the offset chunk 4 mask here.

ipv6 - Specify that the rule applies to IPv6 fields.

class - (Optional) Specify the value of the IPv6 class.

<value 0-255> - Enter the IPv6 class value here. This value must be between 0 and 255.

flowlabel - (Optional) Specify the value of the IPv6 flow label.

<hex 0x0-0xffff> - Enter the IPv6 flow label mask used here.

source_ipv6 - (Optional) Specify the value of the IPv6 source address.

<ipv6addr> - Enter the source IPv6 address used for this configuration here.

mask - (Optional) Specify an additional mask parameter that can be configured.

<ipv6mask> - Enter the source IPv6 mask here.

destination_ipv6 - (Optional) Specify the value of the IPv6 destination address.

<ipv6addr> - Enter the destination IPv6 address used for this configuration here.

mask - (Optional) Specify an additional mask parameter that can be configured.

<ipv6mask> - Enter the destination IPv6 mask here.

tcp - (Optional) Specify to configure the TCP parameters.

src_port - Specify the value of the IPv6 Layer 4 TCP source port.

<value 0-65535> - Enter the TCP source port value here. This value must be between 0 and 65535.

mask - Specify an additional mask parameter that can be configured.

<hex 0x0-0xffff> - Enter the TCP source port mask value here.

dst_port - (Optional) Specify the value of the IPv6 Layer 4 TCP destination port.

<value 0-65535> - Enter the TCP destination port value here. This value must be between 0 and 65535.

mask - Specify an additional mask parameter that can be configured.

<hex 0x0-0xffff> - Enter the TCP destination port mask value here.

udp - (Optional) Specify to configure the UDP parameters.

src_port - Specify the value of the IPv6 Layer 4 UDP source port.

<value 0-65535> - Enter the UDP source port value here. This value must be between 0 and 65535.

mask - Specify an additional mask parameter that can be configured.

<hex 0x0-0xffff> - Enter the UDP source port mask value here.

dst_port - Specify the value of the IPv6 Layer 4 UDP destination port.

<value 0-65535> - Enter the UDP destination port value here. This value must be between 0 and 65535.

mask - Specify an additional mask parameter that can be configured.

<hex 0x0-0xffff> - Enter the UDP destination port mask value here.

icmp - (Optional) Specify to configure the ICMP parameters used.

type - (Optional) Specify that the rule applies to the value of ICMP type traffic.

<value 0-255> - Enter the ICMP type traffic value here. This value must be between 0 and 255.

code - (Optional) Specify that the rule applies to the value of ICMP code traffic.

<value 0-255> - Enter the ICMP code traffic value here. This value must be between 0 and 255.

port - Specify the port list used for this configuration.

<portlist> - Enter a list of ports used for the configuration here.

all - Specify that all the ports will be used for this configuration.

vlan_based - Specify that the rule will be VLAN based.

vlan - Specify the VLAN name used for this configuration.

<vlan_name> - Enter the VLAN name used for this configuration here.

vlan_id - Specify the VLAN ID used for this configuration.

<vlanid 1-4094> - Enter the VLAN ID used here. This value must be between 1 and 4094.

permit - Specify that packets matching the access rule are permitted by the Switch.

priority - (Optional) Specify that the priority of the packet will change if the packet matches the access rule.

<value 0-7> - Enter the priority value here. This value must be between 0 and 7.

replace_priority - (Optional) Specify that the 802.1p priority of the outgoing packet will be replaced.

replace_dscp_with - (Optional) Specify that the DSCP of the outgoing packet is changed with the new value. If using this action without an action priority, the packet will be sent to the default TC.

<value 0-63> - Enter the replace DSCP with value here. This value must be between 0 and 63.

replace_tos_precedence_with - (Optional) Specify that the IP precedence of the outgoing packet is changed

with the new value. If used without an action priority, the packet is sent to the default TC.

<value 0-7> - Enter the replace ToS precedence with value here. This value must be between 0 and 7.

counter - (Optional) Specify whether the ACL counter feature is enabled or disabled. This parameter is optional. The default option is disabled. If the rule is not bound with the flow_meter, all matching packets are counted. If the rule is bound with the flow_meter, then the "counter" is overridden.

enable - Specify that the ACL counter feature will be enabled.

disable - Specify that the ACL counter feature will be disabled.

mirror - Specify that packets matching the access rules are copied to the mirror port.

deny - Specify that packets matching the access rule are filtered by the Switch.

time_range - (Optional) Specify the name of the time range entry.

<range_name 32> - Enter the time range name here. This name can be up to 32 characters long.

delete - Specify that a profile or a rule will be deleted.

access_id - Specify the index of the access list entry. The value range is 1-256, but the supported maximum number of entries depends on the project.

<value 1-256> - Enter the access ID used here. This value must be between 1 and 256.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a rule entry for a packet content mask profile:

```
DGS-3000-26TC:admin#config access_profile profile_id 3 add access_id auto_assign
packet_content offset_chunk_3 0xF0 port all deny
Command: config access_profile profile_id 3 add access_id auto_assign packet_content
offset_chunk_3 0xF0 port all deny
```

Success.

```
DGS-3000-26TC:admin#
```

6-4 show access_profile

Description

This command is used to display the current access list table.

Format

show access_profile {[profile_id <value 1-512> | profile_name <name 32>]}

Parameters

profile_id - (Optional) Specify the index of the access list profile.

<value 1-512> - Enter the profile ID used here. This value must be between 1 and 512.

profile_name - (Optional) Specify the name of the profile.

<name 32> - Enter the profile name used here. This name can be up to 32 characters long.

Restrictions

None.

Example

To display the current access list table:

```
DGS-3000-26TC:admin#show access_profile
```

Command: show access_profile

Access Profile Table

Total User Set Rule Entries : 4
 Total Used HW Entries : 128
 Total Available HW Entries : 896

=====
 Profile ID: 1 Profile name: EtherACL Type: Ethernet

MASK on
 VLAN : 0xFFFF
 802.1p
 Ethernet Type

Available HW Entries : 193

 Rule ID : 1 Ports: 1

Match on
 VLAN ID : 1
 802.1p : 0
 Ethernet Type : 0xFFFFE

Action:
 Permit

=====
 Profile ID: 2 Profile name: IPv4ACL Type: IPv4

MASK on
 VLAN : 0xFFFF
 DSCP
 ICMP

Available HW Entries : 193

 Rule ID : 1 Ports: 2

Match on
 VLAN ID : 1
 DSCP : 0

Action:
 Permit

=====
 Profile ID: 3 Profile name: IPv6ACL Type: IPv6

MASK on
 Class
 TCP

```

Available HW Entries : 255
-----
Rule ID : 1          Ports: 3

Match on
  Class              : 0

Action:
  Permit

=====

Profile ID: 4      Profile name: PCACL  Type: User Defined

MASK on
  offset_chunk_1 : 0      value : 0x00000000
  offset_chunk_2 : 1      value : 0x00000000
  offset_chunk_3 : 2      value : 0x00000000
  offset_chunk_4 : 3      value : 0x00000000

Available HW Entries : 255
-----
Rule ID : 1          Ports: 4

Match on
  offset_chunk_1 : 0      value : 0x0000FFEE      Mask : 0x0000FFEE

Action:
  Permit
  Priority              : 1
  Replace DSCP         : 1

=====

DGS-3000-26TC:admin#

```

The following example displays an access profile that supports an entry mask for each rule:

```

DGS-3000-26TC:admin#show access_profile profile_id 2
Command: show access_profile profile_id 2

Access Profile Table

Profile ID: 2      Profile Name: 2                      Type : Ethernet
Mask on
  VLAN            : 0xF
  Source MAC      : FF-FF-FF-00-00-00
  Destination MAC : 00-00-00-FF-FF-FF
Available HW Entries: 255
-----
Rule ID : 22      Ports: 1-7
Match on
  VLAN ID        : 8                      Mask : 0xFFF
  Source MAC     : 00-01-02-03-04-05      Mask : FF-FF-FF-FF-FF-FF
  Destination MAC : 00-05-04-03-02-00      Mask : FF-FF-FF-FF-FF-00
Action:
Deny

DGS-3000-26TC:admin#

```

The following example displays the packet content mask profile for the profile with an ID of 4:

```

DGS-3000-26TC:admin#show access_profile profile_id 4
Command: show access_profile profile_id 4

Access Profile Table

Profile ID: 4      Profile name:4      Type: User Defined

MASK on
  offset_chunk_1 : 3      value : 0x0000FFFF
  offset_chunk_2 : 5      value : 0x0000FF00
  offset_chunk_3 : 14     value : 0xFFFF0000
  offset_chunk_4 : 16     value : 0xFF000000

Available HW Entries : 255
-----
Rule ID : 1        Ports: 1-2
Match on
  offset_chunk_1 : 3      value : 0x000086DD
  offset_chunk_2 : 5      value : 0x00003A00
  offset_chunk_3 : 14     value : 0x86000000

Action:
  Deny

DGS-3000-26TC:admin#

```

6-5 config flow_meter

Description

This command is used to configure the flow-based metering function. The metering function supports three modes: single rate two color, single rate three color, and two rate three color. The access rule must be created before the parameters of this function can be applied.

For the single rate two color mode, users may set the preferred bandwidth for this rule, in Kbps, and once the bandwidth has been exceeded, overflowing packets will either be dropped or have a drop precedence set, depending on the user configuration.

For single rate three color mode, users need to specify the committed rate, in Kbps, the committed burst size, and the excess burst size.

For the two rate three color mode, users need to specify the committed rate in Kbps, the committed burst size, the peak rate and the peak burst size.

There are two cases for mapping the color of a packet: Color-blind mode and Color-aware mode. In the Color-blind case, the determination for the packet's color is based on the metering result. In the Color-aware case, the determination for the packet's color is based on the metering result and the ingress DSCP.

When color-blind or color-aware is not specified, color-blind is the default mode.

The green color packet will be treated as the conforming action, the yellow color packet will be treated as the exceeding action, and the red color packet will be treated as the violating action.

The replace DSCP action can be performed on packets that conform (GREEN) and packets that do not conform (YELLOW and RED). If drop YELLOW/RED is selected, the action to replace the DSCP will not take effect.

Format

```
config flow_meter [profile_id <value 1-512> | profile_name <name 32>] access_id <value 1-256> [rate
<value 1-1048576>] {burst_size [<value 1-262144>]} rate_exceed [drop_packet | remark_dscp <value 0-63>]
| tr_tcm cir <value 1-1048576> {cbs <value 1-262144>} pir <value 1-1048576> {pbs <value 1-262144>}
{[color_blind | color_aware]} {conform [permit | replace_dscp <value 0-63>] {counter [enable | disable]}}
exceed [permit {replace_dscp <value 0-63>} | drop] {counter [enable | disable]} violate [permit
{replace_dscp <value 0-63>} | drop] {counter [enable | disable]} | sr_tcm cir <value 1-1048576> cbs <value
1-262144> ebs <value 1-262144> {[color_blind | color_aware]} {conform [permit | replace_dscp <value 0-
63>] {counter [enable | disable]}} exceed [permit {replace_dscp <value 0-63>} | drop] {counter [enable |
disable]} violate [permit {replace_dscp <value 0-63>} | drop] {counter [enable | disable]} | delete]
```

Parameters

profile_id - Specify the profile ID. <value 1-512> - Enter the profile ID here. This value must be between 1 and 512.
profile_name - Specify the name of the profile. The maximum length is 32 characters. <name 32> - Enter the profile name used here.
access_id - Specify the access ID. <value 1-256> - Enter the access ID used here. This value must be between 1 and 256.
rate - Specify the rate for single rate two color mode. Specify the committed bandwidth in Kbps for the flow. <value 1-1048576> - Enter the rate for single rate two color mode here. This value must be between 1 and 1048576.
burst_size - (Optional) Specify the burst size for the single rate two color mode. The unit is Kbytes. <value 1-262144> - Enter the burst size value here. This value must be between 1 and 262144.
rate_exceed - Specify the action for packets that exceeds the committed rate in single rate, two color mode. drop_packet - Drops the packet immediately.
remark_dscp - Marks the packet with a specified DSCP. The packet is set to have a high drop precedence. <value 0-63> - Enter the remark DSCP value here. This value must be between 0 and 63.
tr_tcm - Specify the "two rate three color mode".
cir - Specify the Committed Information Rate. The unit is in Kbps. CIR should always be equal or less than PIR. <value 1-1048576> - Enter the committed information rate value here. This value must be between 1 and 1048576.
cbs - (Optional) Specify the "Committed Burst Size". The unit is Kbytes. That is to say, 1 means 1Kbytes. This parameter is an optional parameter. The default value is 4*1024.

-
- <value 1-262144>** - Enter the committed burst size value here. This value must be between 1 and 262144.
- pir** - Specify the "Peak Information Rate". The unit is in Kbps. PIR should always be equal to or greater than CIR.
- <value 1-1048576>** - Enter the peak information rate value here. This value must be between 1 and 1048576.
- pbs** - (Optional) Specify the "Peak Burst Size". The unit is in Kbytes. This parameter is an optional parameter. The default value is 4*1024.
- <value 1-262144>** - Enter the peak burst size value here. This value must be between 1 and 262144.
- color_blind** - (Optional) Specify the meter mode as color-blind. The default is color-blind mode.
- color_aware** - (Optional) Specify the meter mode as color-aware. The final color of the packet is determined by the initial color of the packet and the metering result.
- conform** - (Optional) Specify the action when a packet is mapped to the "green" color.
- permit** - Permits the packet.
- replace_dscp** - Changes the DSCP of the packet.
- <value 0-63>** - Enter the replace DSCP value here. This value must be between 0 and 63.
- counter** - (Optional) Specify the ACL counter. This is optional. The default is "disable". The resource may be limited so that a counter cannot be turned on. Counters will be cleared when the function is disabled.
- enable** - Specify that the ACL counter option will be enabled.
- disable** - Specify that the ACL counter option will be disabled.
- exceed** - Specify the action when a packet is mapped to the "yellow" color.
- permit** - Permits the packet.
- replace_dscp** - (Optional) Changes the DSCP of the packet.
- <value 0-63>** - Enter the replace DSCP value here. This value must be between 0 and 63.
- drop** - Drops the packet.
- counter** - (Optional) Specify the ACL counter. This is optional. The default is "disable". The resource may be limited so that a counter cannot be turned on. Counters will be cleared when the function is disabled.
- enable** - Enables the ACL counter option.
- disable** - Disables the ACL counter option.
- violate** - Specify the action when a packet is mapped to the "red" color.
- permit** - Permits the packet.
- replace_dscp** - (Optional) Changes the DSCP of the packet.
- <value 0-63>** - Enter the replace DSCP value here. This value must be between 0 and 63.
- drop** - Drops the packet.
- counter** - (Optional) Specify the ACL counter. The default value is disabled. The resource may be limited so that a counter cannot be turned on. Counters will be cleared when the function is disabled.
- enable** - Specify that the ACL counter option will be enabled.
- disable** - Specify that the ACL counter option will be disabled.
-
- sr_tcm** - Specify "single rate three color mode".
- cir** - Specify the Committed Information Rate. The unit is Kbps.
- <value 0-1048576>** - Enter the committed information rate value here. This value must be between 0 and 1048576.
- cbs** - Specify the "Committed Burst Size" The unit is Kbytes.
- <value 0-131072>** - Enter the committed burst size value here. This value must be between 0 and 131072.
- ebs** - Specify the "Excess Burst Size". The unit is Kbytes.
- <value 0-131072>** - Enter the excess burst size value here. This value must be between 0 and 131072.
- color_blind** - (Optional) Specify the meter mode as color-blind. The default is color-blind mode.
- color_aware** - (Optional) Specify the meter mode as color-aware. The final color of the packet is determined by the initial color of the packet and the metering result.
- conform** - (Optional) Specify the action when a packet is mapped to the "green" color.
- permit** - Permits the packet.
- replace_dscp** - Changes the DSCP of the packet.
- <value 0-63>** - Enter the replace DSCP value here. This value must be between 0 and 63.
- counter** - (Optional) Specify the ACL counter. This is optional. The default is "disable". The resource may be limited so that a counter cannot be turned on. Counters will be cleared when the function is disabled.
- enable** - Enables the ACL counter option.
- disable** - Disables the ACL counter option.
- exceed** - Specify the action when a packet is mapped to the "yellow" color.
- permit** - Permits the packet.
- replace_dscp** - (Optional) Changes the DSCP of the packet.
- <value 0-63>** - Enter the replace DSCP value here. This value must be between 0 and 63.
- drop** - Drops the packet.
- counter** - (Optional) Specify the ACL counter. This is optional. The default is "disable". The resource may be limited so that a counter cannot be turned on. Counters will be cleared when the function is disabled.
- enable** - Enables the ACL counter option.
- disable** - Disables the ACL counter option.
-

violate - Specify the action when a packet is mapped to the “red” color.

permit - Permits the packet.

replace_dscp - (Optional) Changes the DSCP of the packet.

<value 0-63> - Enter the replace DSCP value here. This value must be between 0 and 63.

drop - Drops the packet.

counter - (Optional) Specify the ACL counter. This is optional. The default value is disabled. The resource may be limited so that a counter cannot be turned on. Counters will be cleared when the function is disabled.

enable - Enables the ACL counter option.

disable - Disables the ACL counter option.

delete - Deletes the specified flow_meter.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a “two rate, three color” flow meter:

```
DGS-3000-26TC:admin#config flow_meter profile_id 1 access_id 1 tr_tcm cir 1000 cbs 2000 pir
2000 pbs 2000 color_blind conform permit counter enable exceed permit replace_dscp 60 counter
enable violate drop
Command: config flow_meter profile_id 1 access_id 1 tr_tcm cir 1000 cbs 2000 pir 2000 pbs
2000 color_blind conform permit counter enable exceed permit replace_dscp 60 counter enable
violate drop

Success.
DGS-3000-26TC:admin#
```

6-6 show flow_meter

Description

This command is used to display the flow-based metering (ACL Flow Metering) configuration.

Format

show flow_meter {[profile_id <value 1-512> | profile_name <name 32>] {access_id <value 1-256>}}

Parameters

profile_id - (Optional) Specify the profile ID.

<value 1-512> - Enter the profile ID used here. This value must be between 1 and 512.

profile_name - (Optional) Specify the name of the profile.

<name 32> - Enter the profile name used here. The maximum length is 32 characters.

access_id - (Optional) Specify the access ID.

<value 1-256> - Enter the access ID used here. This value must be between 1 and 256.

Restrictions

None.

Example

To display the flow metering configuration:

```

DGS-3000-26TC:admin#show flow_meter
Command: show flow_meter

Flow Meter Information
-----
Profile ID:1      Access ID:1      Mode : trTCM / ColorBlind
CIR(Kbps):1000   CBS(Kbyte):2000   PIR(Kbps):2000   PBS(Kbyte):2000
Action:
  Conform : Permit           Counter: Enabled
  Exceed  : Permit   Replace DSCP: 60   Counter: Enabled
  Violate : Drop            Counter: Disabled
-----
Total Entries: 1

DGS-3000-26TC:admin#

```

6-7 config time_range

Description

This command is used to define a specific range of time to activate a function on the Switch by specifying which time range in a day and which days in a week are covered in the time range. Note that the specified time range is based on the SNTP time or the configured time. If this time is not available, the time range will not be met.

Format

```

config time_range <range_name 32> [hours start_time <time hh:mm:ss> end_time <time hh:mm:ss>
weekdays <daylist> | delete]

```

Parameters

time_range - Specify the name of the time range settings.

<range_name 32> - Enter the time range name used here. This name can be up to 32 characters long.

hours - Specify the time of a day.

start_time - Specify the starting time of a day.

<time hh:mm:ss> - Enter the starting time here. (24-hr time). For example, 19:00 means 7PM. 19 is also acceptable. The time specified in the start_time parameter must be smaller than the time specified in the end_time parameter.

end_time - Specify the ending time of a day. (24-hr time)

<time hh:mm:ss> - Enter the ending time here. (24-hr time). For example, 19:00 means 7PM. 19 is also acceptable. The time specified in the start_time parameter must be smaller than the time specified in the end_time parameter.

weekdays - Specify the list of days contained in the time range. Use a dash to define a period of days. Use a comma to separate specific days.

<daylist> - Enter the weekdays that will be included in this configuration here. For example, mon-fri (Monday to Friday). sun, mon, fri (Sunday, Monday and Friday)

delete - Deletes a time range profile. When a time_range profile has been associated with ACL entries, deleting the time_range profile will fail.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a time range named "1" that starts every Monday at 01:01:01am and ends at 02:02:02am:


```
DGS-3000-26TC:admin#config time_range 1 hours start_time 1:1:1 end_time 2:2:2 weekdays mon
Command: config time_range 1 hours start_time 1:1:1 end_time 2:2:2 weekdays mon

Success.

DGS-3000-26TC:admin#config time_range 1 delete
Command: config time_range 1 delete

Success.

DGS-3000-26TC:admin#
```

6-8 show time_range

Description

This command is used to display the current time range settings.

Format

show time_range

Parameters

None.

Restrictions

None.

Example

To display the current time range settings:

```
DGS-3000-26TC:admin#show time_range
Command: show time_range

Time Range Information
-----
Range Name           : 1
Weekdays            : Mon
Start Time           : 01:01:01
End Time             : 02:01:01

Total Entries :1

DGS-3000-26TC:admin#
```

6-9 show current_config access_profile

Description

This command is used to display the ACL part of the current configuration, when logged in with user level privileges.

The overall current configuration can be displayed by using the **show config** command, which is accessible with administrator level privileges.

Format

show current_config access_profile

Parameters

None.

Restrictions

None.

Example

To display the ACL part of the current configuration:

```
DGS-3000-26TC:admin#show current_config access_profile
Command: show current_config access_profile

#-----

# ACL

create access_profile ethernet vlan profile_id 1
config access_profile profile_id 1 add access_id 1 ethernet vlan default port 1 permit

create access_profile ip source_ip_mask 255.255.255.255 profile_id 2
config access_profile profile_id 2 add access_id 1 ip source_ip 10.10.10.10 port 2 deny

#-----

DGS-3000-26TC:admin#
```

Chapter 7 Address Resolution Protocol (ARP) Command List

```

create arpentry <ipaddr> <macaddr>
delete arpentry [<ipaddr> | all]
config arpentry <ipaddr> <macaddr>
config arp_aging time <value 0-65535>
clear arptable
show arpentry {ipif <ipif_name 12> | ipaddress <ipaddr> | static | mac_address <macaddr>}

```

7-1 create arpentry

Description

This command is used to enter a static ARP entry into the Switch's ARP table.

Format

```
create arpentry <ipaddr> <macaddr>
```

Parameters

```

<ipaddr> - Enter the end node or station IP address.
<macaddr> - Enter the corresponding MAC address of the IP address above.

```

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a static ARP entry for the IP address 10.48.74.121 and MAC address 00-50-BA-00-07-36:

```

DGS-3000-26TC:admin#create arpentry 10.48.74.121 00-50-BA-00-07-36
Command: create arpentry 10.48.74.121 00-50-BA-00-07-36

Success.

DGS-3000-26TC:admin#

```

7-2 delete arpentry

Description

This command is used to delete an ARP entry, by specifying either the IP address of the entry or all. Specify 'all' clears the Switch's ARP table.

Format

```
delete arpentry [<ipaddr> | all]
```

Parameters

<ipaddr> - Enter the end node or station IP address.

all - Specify to delete all ARP entries.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an entry of IP address 10.48.74.121 from the ARP table:

```
DGS-3000-26TC:admin#delete arpentry 10.48.74.121
```

```
Command: delete arpentry 10.48.74.121
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

7-3 config arpentry

Description

This command is used to configure a static entry's MAC address in the ARP table. Specify the IP address and MAC address of the entry.

Format

config arpentry <ipaddr> <macaddr>

Parameters

<ipaddr> - Enter the end node or station IP address.

<macaddr> - Enter the corresponding MAC address of the IP address above.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a static ARP entry, whose IP address is 10.48.74.121, set its MAC address to 00-50-BA-00-07-37:

```
DGS-3000-26TC:admin#config arpentry 10.48.74.121 00-50-BA-00-07-37
```

```
Command: config arpentry 10.48.74.121 00-50-BA-00-07-37
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

7-4 config arp_aging time

Description

This command is used to set the maximum amount of time, in minutes, that a dynamic ARP entry can remain in the Switch's ARP table, without being accessed, before it is dropped from the table.

Format

config arp_aging time <value 0-65535>

Parameters

<value 0-65535> - Enter the ARP age-out time, in minutes. This value must be between 0 and 65535 minutes.
The default value is 20.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure ARP aging time to 30 minutes:

```
DGS-3000-26TC:admin#config arp_aging time 30
Command: config arp_aging time 30

Success.

DGS-3000-26TC:admin#
```

7-5 clear arptable

Description

This command is used to clear all the dynamic entries from ARP table.

Format

clear arptable

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear the ARP table:

```
DGS-3000-26TC:admin#clear arptable
Command: clear arptable

Success.

DGS-3000-26TC:admin#
```

7-6 show arpentry

Description

This command is used to display the ARP table. You can filter the display by IP address, MAC address, Interface name, or static entries.

Format

```
show arpentry {ipif <ipif_name 12> | ipaddress <ipaddr> | static | mac_address <macaddr>}
```

Parameters

ipif - (Optional) The name of the IP interface the end node or station for which the ARP table entry was made, resides on.

<ipif_name 12> - Enter the IP interface name here. This value can be up to 12 characters long.

ipaddress - (Optional) The IP address of the end node or station.

<ipaddr> - Enter the IP address here.

static - (Optional) Displays the static entries in the ARP table.

mac_address - (Optional) Displays the ARP entry by MAC address.

<macaddr> - Enter the MAC address here.

Restrictions

None.

Example

To display the ARP table:

```
DGS-3000-26TC:admin#show arpentry
Command: show arpentry

ARP Aging Time : 20

Interface      IP Address      MAC Address      Type
-----
System         10.0.0.0        FF-FF-FF-FF-FF-FF Local/Broadcast
System         10.1.1.1        00-02-03-04-05-06 Static
System         10.1.1.2        00-02-03-04-05-06 Dynamic
System         10.1.1.3        00-02-03-04-05-06 Static
System         10.90.90.90     00-01-02-03-04-00 Local
System         10.255.255.255  FF-FF-FF-FF-FF-FF Local/Broadcast

Total Entries: 6

DGS-3000-26TC:admin#
```

Chapter 8 ARP Spoofing Prevention

Command List

```
config arp_spoofing_prevention [add gateway_ip <ipaddr> gateway_mac <macaddr> ports [<portlist> | all] |
delete gateway_ip <ipaddr>]
show arp_spoofing_prevention
```

8-1 config arp_spoofing_prevention

Description

This command is used to configure the spoofing prevention entry to prevent spoofing of MAC for the protected gateway. When an entry is created, those ARP packets whose sender IP matches the gateway IP of an entry, but source MAC field does not match the gateway MAC of the entry will be dropped by the system.

Format

```
config arp_spoofing_prevention [add gateway_ip <ipaddr> gateway_mac <macaddr> ports [<portlist> | all]
| delete gateway_ip <ipaddr>]
```

Parameters

```
add - Specify to add an ARP spoofing prevention entry.
  gateway_ip - Specify a gateway IP address to be configured.
    <ipaddr> - Enter the IP address used for this configuration here.
  gateway_mac - Specify a gateway MAC address to be configured.
    <macaddr> - Enter the MAC address used for this configuration here.
  ports - Specify a range of ports to be configured.
    <portlist> - Enter a list of ports used for the configuration here.
    all - Specify all of ports to be configured.
delete - Specify to delete an ARP spoofing prevention entry.
  gateway_ip - Specify a gateway ip to be configured.
    <ipaddr> - Enter the IP address used for this configuration here.
```

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the ARP spoofing prevention entry:

```
DGS-3000-26TC:admin#config arp_spoofing_prevention add gateway_ip 10.254.254.251 gateway_mac
00-00-00-11-11-11 ports 1-2
Command: config arp_spoofing_prevention add gateway_ip 10.254.254.251 gateway_mac 00-00-00-
11-11-11 ports 1-2

Success.

DGS-3000-26TC:admin#
```

8-2 show arp_spoofing_prevention

Description

This command is used to show the ARP spoofing prevention entry.

Format

show arp_spoofing_prevention

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To display the ARP spoofing prevention entries:

```
DGS-3000-26TC:admin#show arp_spoofing_prevention
Command: show arp_spoofing_prevention

Gateway IP          Gateway MAC          Ports
-----
10.254.254.251     00-00-00-11-11-11   1-2

Total Entries: 1

DGS-3000-26TC:admin#
```


Chapter 9 Auto-Configuration Command List

enable autoconfig

disable autoconfig

show autoconfig

config autoconfig timeout <value 1-65535>

9-1 enable autoconfig

Description

This command is used to enable auto configuration. When enabled, during power on initialization, the Switch will get configure file path name and TFTP server IP address from the DHCP server. Then, the Switch will download the configuration file from the TFTP server for configuration of the system.

Format

enable autoconfig

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable autoconfig:

```
DGS-3000-26TC:admin#enable autoconfig
Command: enable autoconfig

Success.

DGS-3000-26TC:admin#
```

9-2 disable autoconfig

Description

This command is used to disable auto configuration. When disabled, the Switch will configure itself using the local configuration file

Format

disable autoconfig

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable autoconfig:

```
DGS-3000-26TC:admin#disable autoconfig
Command: disable autoconfig

Success.

DGS-3000-26TC:admin#
```

9-3 show autoconfig

Description

This command is used to display if the auto-configuration is enabled or disabled.

Format

show autoconfig

Parameters

None.

Restrictions

None.

Example

To show autoconfig status:

```
DGS-3000-26TC:admin#show autoconfig
Command: show autoconfig

Autoconfig State: Disabled
Timeout           : 50 sec

DGS-3000-26TC:admin#
```

9-4 config autoconfig timeout

Description

This command is used to configure the timeout value. This timer is used to limit the length of time in getting configuration settings from the network. When timeout occurs, the auto configuration operation will be stopped and the local configuration file will be used to configure the system.

Format

config autoconfig timeout <value 1-65535>

Parameters

<value 1-65535> - Enter the timeout length in seconds. The default setting is 50 seconds.

Restrictions

Only Administrator, and Operator level users can issue this command.

Example

To configure auto configuration timeout:

```
DGS-3000-26TC:admin#config autoconfig timeout 60
```

```
Command: config autoconfig timeout 60
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

Chapter 10 Basic Commands Command List

create account [admin operator power_user user] <username 15> {encrypt [plain_text sha_1] <password>}
config account <username> {encrypt [plain_text sha_1] <password>}
show account
delete account <username>
show switch
enable telnet {<tcp_port_number 1-65535>}
disable telnet
enable web {<tcp_port_number 1-65535>}
disable web
reboot {force_agree}
reset {[config system]} {force_agree}
config firmware image <path_filename64>boot_up
create ipif <ipif_name 12> <network_address> <vlan_name 32> {secondary state [enable disable]}
config ipif <ipif_name 12> [{ipaddress <network_address> vlan <vlan_name 32> state [enable disable]} bootp dhcp ipv6 [ipv6address <ipv6networkaddr> state [enable disable]] ipv4 state [enable disable] dhcpv6_client [enable disable] dhcp_option12 [hostname <hostname 63> clear_hostname state [enable disable]]]
delete ipif [<ipif_name 12> {ipv6address <ipv6networkaddr>} all]
enable ipif [<ipif_name 12> all]
disable ipif [<ipif_name 12> all]
show ipif {<ipif_name 12>}
enable ipif_ipv6_link_local_auto [<ipif_name 12> all]
disable ipif_ipv6_link_local_auto [<ipif_name 12> all]
show ipif_ipv6_link_local_auto {<ipif_name 12>}

10-1 create account

Description

This command is used to create user accounts. The username is between 1 and 15 characters, the password is between 0 and 15 characters. It is case sensitive. The number of account (include admin and user) is up to 8.

Format

```
create account [admin | operator | power_user | user] <username 15> {encrypt [plain_text | sha_1] <password>}
```

Parameters

admin - Specify the name of the admin account.
operator - Specify the name for the operator user account.
power_user - Specify the name for the power-user account.
user - Specify the name of the user account.
<username 15> - Enter the username used here. This name can be up to 15 characters long.
encrypt - (Optional) Specify the encryption applied to the account.
plain_text - Specify the password in plain text form.
sha_1 - Specify the password in the SHA-1 encrypted form.
<password> - The password for the user account. The length for of password in plain-text form and in encrypted form are different. For the plain-text form, passwords must have a minimum of 0 character and can have a maximum of 15 characters. For the encrypted form password, the length is fixed to 35 bytes long. The password is case-sensitive.

Restrictions

Only Administrators can issue this command.

Example

To create the admin-level user "dlink":

```
DGS-3000-26TC:admin#create account admin dlink
Command: create account admin dlink

Enter a case-sensitive new password:****
Enter the new password again for confirmation:****

Success.

DGS-3000-26TC:admin#
```

To create the user-level user "Remote-Manager":

```
DGS-3000-26TC:admin#create account user Remote-Manager
Command: create account user Remote-Manager

Enter a case-sensitive new password:****
Enter the new password again for confirmation:****

Success.

DGS-3000-26TC:admin#
```

10-2 config account

Description

This command is used to configure user account. When the password information is not specified in the command, the system will prompt the user to input the password interactively. For this case, the user can only input the plain text password.

If the password is present in the command, the user can select to input the password in the plain text form or in the encrypted form. The encryption algorithm is based on SHA-1.

Format

config account <username> {encrypt [plain_text | sha_1] <password>}

Parameters

<username> - Enter the user name of the account that has been defined.

encrypt - (Optional) Specify that the password will be encrypted.

plain_text - Specify the password in plain text form.

sha_1 - Specify the password in the SHA-1 encrypted form.

<password> - The password for the user account. The length for of password in plain-text form and in encrypted form are different. For the plain-text form, passwords must have a minimum of 0 character and can have a maximum of 15 characters. For the encrypted form password, the length is fixed to 35 bytes long. The password is case-sensitive.

Restrictions

Only Administrators can issue this command.

Example

To configure the user password of “dlink” account:

```
DGS-3000-26TC:admin#config account dlink
Command: config account dlink

Enter a old password:****
Enter a case-sensitive new password:****
Enter the new password again for confirmation:****

Success.

DGS-3000-26TC:admin#
```

To configure the user password of “administrator” account:

```
DGS-3000-26TC:admin#config account administrator encrypt sha_1
*!&cRDtpNCeBiq15KOQsKVYrA0sAiCIZQwq
Command: config account administrator encrypt sha_1 *!&cRDtpNCeBiq15KOQsKVYrA0sAiCIZQwq

Success.

DGS-3000-26TC:admin#
```

10-3 show account

Description

This command is used to display user accounts that have been created.

Format

show account

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To display the accounts that have been created:

```

DGS-3000-26TC:admin#show account
Command: show account

Current Accounts:
Username           Access Level
-----
admin              Admin
oper              Operator
power             Power_user
user              User

Total Entries : 4

DGS-3000-26TC:admin#

```

10-4 delete account

Description

This command is used to delete an existing account.

Format

delete account <username>

Parameters

<username> - Enter to delete the name of the user.

Restrictions

Only Administrators can issue this command.

Example

To delete the user account "System":

```

DGS-3000-26TC:admin#delete account System
Command: delete account System

Success.

DGS-3000-26TC:admin#

```

10-5 show switch

Description

This command is used to display the Switch information.

Format

show switch

Parameters

None.

Restrictions

None.

Example

The following is an example for display of the Switch information.

```
DGS-3000-26TC:admin#show switch
Command: show switch

Device Type           : DGS-3000-26TC Gigabit Ethernet Switch
MAC Address           : F0-7D-68-30-00-10
IP Address             : 10.90.90.90 (Manual)
VLAN Name              : default
Subnet Mask            : 255.0.0.0
Default Gateway        : 0.0.0.0
Boot PROM Version      : Build 2.00.001
Firmware Version       : Build 2.00.004
Hardware Version       : A2
System Name            :
System Location         :
System Uptime          : 0 days, 0 hours, 42 minutes, 49 seconds
System Contact         :
Spanning Tree          : Disabled
GVRP                   : Disabled
IGMP Snooping         : Disabled
MLD Snooping           : Disabled
VLAN Trunk             : Disabled
Telnet                 : Enabled (TCP 23)
Web                    : Enabled (TCP 80)
SNMP                   : Disabled
SSL Status             : Disabled
CTRL+C  ESC  q Quit  SPACE  n Next Page  ENTER  Next Entry  a All
```

10-6 enable telnet**Description**

This command is used to enable Telnet and configure port number.

Format

```
enable telnet {<tcp_port_number 1-65535>}
```

Parameters

```
<tcp_port_number 1-65535> - (Optional) The TCP port number. TCP ports are numbered between 1 and 65535.
The "well-known" TCP port for the Telnet protocol is 23.
```

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable Telnet and configure port number:

```
DGS-3000-26TC:admin#enable telnet 23
Command: enable telnet 23

Success.

DGS-3000-26TC:admin#
```

10-7 disable telnet

Description

This command is used to disable Telnet.

Format

disable telnet

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable Telnet:

```
DGS-3000-26TC:admin#disable telnet
Command: disable telnet

Success.

DGS-3000-26TC:admin#
```

10-8 enable web

Description

This command is used to enable HTTP and configure port number.

Format

enable web {<tcp_port_number 1-65535>}

Parameters

<tcp_port_number 1-65535> - (Optional) The TCP port number. TCP ports are numbered between 1 and 65535. The "well-known" TCP port for the WEB protocol is 80.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable HTTP and configure port number:

```
DGS-3000-26TC:admin#enable web 80
Command: enable web 80

Note: SSL will be disabled if web is enabled.
Success.

DGS-3000-26TC:admin#
```

10-9 disable web

Description

This command is used to disable HTTP.

Format

disable web

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable HTTP:

```
DGS-3000-26TC:admin#disable web
Command: disable web

Success.

DGS-3000-26TC:admin#
```

10-10 reboot

Description

This command is used to restart the Switch.

Format

reboot {force_agree}

Parameters

force_agree - (Optional) The **reboot** command will be executed immediately without further confirmation.

Restrictions

Only Administrators can issue this command.

Example

To reboot the Switch:

```
DGS-3000-26TC:admin#reboot
Command: reboot

Are you sure to proceed with the system reboot?(y/n)
Please wait, the switch is rebooting...
```

10-11 reset

Description

This command is used to provide reset functions. The configuration setting will be reset to the default setting by the "reset config" command. For the "reset system" command, the device will store the reset setting in the NVRAM and then reboot the system. The "reset" command will not reset IP address, log, user accounts and banner configured on the system.

Format

reset {[config | system]} {force_agree}

Parameters

config - (Optional) All parameters are reset to default settings. However, the device will neither save or reboot.

system - (Optional) All parameters are reset to default settings, and the Switch will reset to factory default settings, save and reboot.

force_agree - (Optional) The **reset** command will be executed immediately without further confirmation.

Restrictions

Only Administrators can issue this command.

Example

To reset the Switch:

```
DGS-3000-26TC:admin#reset system
Command: reset system

Are you sure you want to proceed with system reset?(y/n)
  y-(reset all include configuration, save, reboot )
  n-(cancel command) y
Reboot & Load Factory Default Configuration...

Saving configurations and logs to NV-RAM..... Done.
Please wait, the switch is rebooting...
```

10-12 config firmware image

Description

This command is used to select a firmware file as a boot-up file. This command is required to be supported when multiple firmware images are supported.

Format

config firmware image <path_filename64>boot_up

Parameters

<path_filename64> - Enter a firmware file on the device file system.
boot_up - Specify the firmware as the boot-up firmware.

Restrictions

Only Administrators can issue this command.

Example

To configure c:/ firmware.had as the boot-up image:

```
DGS-3000-26TC:admin#config firmware image c:/firmware.had boot_up
Command: config firmware image c:/firmware.had boot_up

Success.

DGS-3000-26TC:admin#
```

10-13 create ipif

Description

This command is used to create an IP interface. An interface only allows one IPv4 IP address. To be able to have multiple IPv4 addresses, create a secondary IP interface with different IPv4 address on the same VLAN.

Format

create ipif <ipif_name 12> <network_address> <vlan_name 32> {secondary | state [enable | disable]}

Parameters

ipif - Specify the name of the IP interface.

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

<network_address> - Enter the IPv4 network address with a host address and length of network mask (xx.xx.xx.xx/xx).

<vlan_name 32> - Enter the VLAN name used here. This name can be up to 32 characters long.

secondary - (Optional) Specify to add the secondary IPv4 interface.

state - (Optional) Specify the state of the IP interface.

enable - Specify that the IP interface state will be enabled.

disable - Specify that the IP interface state will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an IP interface:

```
DGS-3000-26TC:admin#create ipif Inter1 192.168.16.1/24 vlan2 state enable
Command: create ipif Inter1 192.168.16.1/24 vlan2 state enable

Success.

DGS-3000-26TC:admin#
```

To create a secondary IP interface:

```
DGS-3000-26TC:admin#create ipif Inter2 192.168.16.2/24 default secondary state enable
Command: create ipif Inter2 192.168.16.2/24 default secondary state enable

Success.

DGS-3000-26TC:admin#
```

10-14 config ipif

Description

This command is used to configure the IP interface.

Format

```
config ipif <ipif_name 12> [{ipaddress <network_address> | vlan <vlan_name 32> | state [enable | disable]}
| bootp | dhcp | ipv6 [ipv6address <ipv6networkaddr> | state [enable | disable]] | ipv4 state [enable | disable]
| dhcpv6_client [enable | disable] | dhcp_option12 [hostname <hostname 63> | clear_hostname | state
[enable | disable]]
```

Parameters

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.

ipaddress - (Optional) Specify a network on an ipif. The address should specify a host address and length of network mask. Since an ipif can have only one IPv4 address, the new configured address will overwrite the original one.

<network_address> - Enter the network address used here.

vlan - (Optional) Specify the name of the VLAN here.

<vlan_name 32> - Enter the VLAN name used here. This name can be up to 32 characters long.

state - (Optional) Specify the state of the interface.

enable - Specify to enable the state of the interface.

disable - Specify to disable the state of the interface.

bootp - Specify to use BOOTP to obtain the IPv4 address.

dhcp - Specify to use DHCP to obtain the IPv4 address.

ipv6 - Specify that the IPv6 configuration will be done.

ipv6address - Specify the IPv6 network address. The address should specify a host address and length of network prefix. There can be multiple IPv6 addresses defined on an interface. Thus, as a new address is defined, it is added on this ipif.

<ipv6networkaddr> - Enter the IPv6 address used here.

state - Specify that the IPv6 interface state will be set to enabled or disabled.

enable - Specify that the IPv6 interface state will be enabled.

disable - Specify that the IPv6 interface state will be disabled.

ipv4 - Specify that the IPv4 configuration will be done.

state - Specify that the IPv4 interface state will be set to enabled or disabled.

enable - Specify that the IPv4 interface state will be enabled.

disable - Specify that the IPv4 interface state will be disabled.

dhcpv6_client - Specify the DHCPv6 client state of the interface.

enable - Specify to enable the DHCPv6 client state of the interface.

disable - Specify to disable the DHCPv6 client state of the interface.

dhcp_option12 - Specify the DHCP option 12.

hostname - Specify the host name to be inserted in the DHCPDISCOVER and DHCPREQUEST message.

<hostname 63> - Enter a name starting with a letter, end with a letter or digit, and have only letters, digits, and hyphen as interior characters; the maximal length is 63.

clear_hostname - Specify to clear the host name setting. If host name is empty, system name will be used to encode option 12. The length of system name is more than 63, the superfluous chars will be truncated. If system name is also empty, then product model name will be used to encode option 12.

state - Specify to enable or disable the insertion of option 12 in the DHCPDISCOVER and DHCPREQUEST message.

enable - Specify to enable insertion of option 12 in the DHCPDISCOVER and DHCPREQUEST message.

disable - Specify to disable insertion of option 12 in the DHCPDISCOVER and DHCPREQUEST message.

This is the default.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure an interface's IPv4 network address:

```
DGS-3000-26TC:admin#config ipif System ipaddress 192.168.69.123/24 vlan default
Command: config ipif System ipaddress 192.168.69.123/24 vlan default
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

10-15 delete ipif

Description

This command is used to delete an IP interface.

Format

delete ipif [<ipif_name 12> {ipv6address <ipv6networkaddr>} | all]

Parameters

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.

ipv6address - (Optional) Specify the IPv6 network address. The address should specify a host address and length of network prefix. There can be multiple IPv6 addresses defined on an interface.

<ipv6networkaddr> - Enter the IPv6 address used here.

all - (Optional) Specify that all the IP interfaces will be used.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an IP interface:

```
DGS-3000-26TC:admin#delete ipif newone
Command: delete ipif newone

Success.

DGS-3000-26TC:admin#
```

10-16 enable ipif

Description

This command is used to enable the IP interface.

Format

enable ipif [<ipif_name 12> | all]

Parameters

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.

all - Specify that all the IP interfaces will be enabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable an IP interface:

```
DGS-3000-26TC:admin#enable ipif newone
Command: enable ipif newone

Success.

DGS-3000-26TC:admin#
```

10-17 disable ipif

Description

This command is used to disable an IP interface.

Format

disable ipif [<ipif_name 12> | all]

Parameters

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.
all - Specify that all the IP interfaces will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable an IP interface:

```
DGS-3000-26TC:admin#disable ipif newone
Command: disable ipif newone

Success.

DGS-3000-26TC:admin#
```

10-18 show ipif

Description

This command is used to display an IP interface.

Format

show ipif {<ipif_name 12>}

Parameters

<ipif_name 12> - (Optional) Enter the IP interface name used here. This name can be up to 12 characters long.

Restrictions

None.

Example

To display an IP interface:


```

DGS-3000-26TC:admin#show ipif
Command: show ipif

IP Interface           : Inter2
VLAN Name              : default
Interface Admin State  : Enabled
Link Status           : LinkUp
IPv4 Address           : 192.168.16.2/21 (Manual)  Secondary
IPv4 State             : Enabled

IP Interface           : System
VLAN Name              : default
Interface Admin State  : Enabled
DHCPv6 Client State    : Disabled
Link Status           : LinkUp
IPv4 Address           : 10.90.90.90/8 (Manual)  Primary
IPv4 State             : Enabled
IPv6 State             : Enabled
DHCP Option12 State   : Disabled
DHCP Option12 Host Name :

Total Entries: 2

DGS-3000-26TC:admin#

```

10-19 enable ipif_ipv6_link_local_auto

Description

This command is used to enable the auto configuration of link local address when there are no IPv6 addresses explicitly configured. When an IPv6 address is explicitly configured, the link local address will be automatically configured, and the IPv6 processing will be started. When there is no IPv6 address explicitly configured, by default, link local address is not configured and the IPv6 processing will be disabled. By enable this automatic configuration, the link local address will be automatically configured and IPv6 processing will be started.

Format

```
enable ipif_ipv6_link_local_auto [<ipif_name 12> | all]
```

Parameters

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.
all - Specify that all the IP interfaces will be used.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the IP interface for IPv6 link local automatic:

```
DGS-3000-26TC:admin#enable ipif_ipv6_link_local_auto newone
Command: enable ipif_ipv6_link_local_auto newone

Success.

DGS-3000-26TC:admin#
```

10-20 disable ipif_ipv6_link_local_auto

Description

This command is used to disable the auto configuration of link local address when no IPv6 address are configured.

Format

disable ipif_ipv6_link_local_auto [<ipif_name 12> | all]

Parameters

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.
all - Specify that all the IP interfaces will be used.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the IP interface for IPv6 link local automatic:

```
DGS-3000-26TC:admin#disable ipif_ipv6_link_local_auto newone
Command: disable ipif_ipv6_link_local_auto newone

Success.

DGS-3000-26TC:admin#
```

10-21 show ipif_ipv6_link_local_auto

Description

This commands is used to display the link local address automatic configuration state.

Format

show ipif_ipv6_link_local_auto {<ipif_name 12>}

Parameters

<ipif_name 12> - (Optional) Enter the Ip interface name used here. This name can be up to 12 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To display the link local address automatic configuration state.

```
DGS-3000-26TC:admin#show ipif_ipv6_link_local_auto
Command: show ipif_ipv6_link_local_auto

  IPIF: System           Automatic Link Local Address: Disabled

DGS-3000-26TC:admin#
```

Chapter 11 *BPDU Attack Protection Command List*

```

config bpdu_protection ports [<portlist> | all ] {state [enable | disable] | mode [ drop | block | shutdown]} (1)
config bpdu_protection recovery_timer [<sec 60-1000000> | infinite]
config bpdu_protection [trap | log] [none | attack_detected | attack_cleared | both]
enable bpdu_protection
disable bpdu_protection
show bpdu_protection {ports {<portlist>}}

```

11-1 config bpdu_protection ports

Description

This command is used to configure the BPDP protection function for the ports on the Switch. In generally, there are two states in BPDU protection function. One is normal state, and another is under attack state. The under attack state have three modes: drop, block, and shutdown. A BPDU protection enabled port will enter under attack state when it receives one STP BPDU packet. And it will take action based on the configuration. Thus, BPDU protection can only be enabled on STP-disabled port.

BPDU protection has high priority than FBPDU setting configured by configure STP command in determination of BPDU handling. That is, when FBPDU is configured to forward STP BPDU but BPDU protection is enabled, then the port will not forward STP BPDU.

Format

```
config bpdu_protection ports [<portlist> | all] {state [enable | disable] | mode [ drop | block | shutdown]}(1)
```

Parameters

```

<portlist> - Enter a range of ports to be configured (port number).
all - Specify that all the port will be configured.
state - Specify the BPDU protection state. The default state is disable.
    enable - Specify to enable BPDU protection.
    disable - Specify to disable BPDU protection.
mode - Specify the BPDU protection mode. The default mode is shutdown.
    drop - Drops all received BPDU packets when the port enters under_attack state.
    block - Drops all packets including BPDU and normal packets when the port enters under_attack state.
    shutdown - Shuts down the port when the port enters under_attack state.

```

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the port state enable and drop mode:

```

DGS-3000-26TC:admin#config bpdu_protection ports 1 state enable mode drop
Commands: config bpdu_protection ports 1 state enable mode drop

Success.

DGS-3000-26TC:admin#

```

11-2 config bpdu_protection recovery_timer

Description

This command is used to configure BPDU protection recovery timer. When a port enters the 'under attack' state, it can be disabled or blocked based on the configuration. The state can be recovered manually or by the auto recovery mechanism. To manually recover the port, the user needs to disable and re-enable the port.

Format

config bpdu_protection recovery_timer [<sec 60-1000000> | infinite]

Parameters

<sec 60 –1000000> - Enter the timer (in seconds) used by the Auto-Recovery mechanism to recover the port.
The valid range is 60 to 1000000.

infinite - The port will not be auto recovered.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the bpdu_protection recovery_timer to 120 seconds for the entire switch:

```
DGS-3000-26TC:admin#config bpdu_protection recovery_timer 120
Commands: config bpdu_protection recovery_timer 120

Success.

DGS-3000-26TC:admin#
```

11-3 config bpdu_protection

Description

This command is used to configure the BPDU protection trap state or state for the Switch.

Format

config bpdu_protection [trap | log] [none | attack_detected | attack_cleared | both]

Parameters

trap - Specify the trap state.

log - Specify the log state.

none - Neither attack_detected nor attack_cleared is trapped or logged.

attack_detected - Events will be logged or trapped when the BPDU attacks is detected.

attack_cleared - Events will be logged or trapped when the BPDU attacks is cleared.

both - The events of attack_detected and attack_cleared shall be trapped or logged.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To config the bpdu_protection trap state as both for the entire switch:

```
DGS-3000-26TC:admin#config bpdu_protection trap both
Commands: config bpdu_protection trap both

Success.

DGS-3000-26TC:admin#
```

11-4 enable bpdu_protection

Description

This command is used to enable BPDU protection function globally for the Switch.

Format

enable bpdu_protection

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable bpdu_protection function globally for the entire switch:

```
DGS-3000-26TC:admin#enable bpdu_protection
Commands: enable bpdu_protection

Success.

DGS-3000-26TC:admin#
```

11-5 disable bpdu_protection

Description

This command is used to disable BPDU protection function globally for the Switch.

Format

disable bpdu_protection

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable bpdu_protection function globally for the entire switch:

```
DGS-3000-26TC:admin#disable bpdu_protection
Commands: disable bpdu_protection

Success.

DGS-3000-26TC:admin#
```

11-6 show bpdu_protection

Description

This command is used to display BPDU protection global configuration or per port configuration and current status.

Format

show bpdu_protection {ports {<portlist>}}

Parameters

ports - (Optional) Specify a range of ports to be configured.
<portlist> - Enter the portlist here.

Restrictions

None.

Example

To show the bpdu_protection for the entire switch:

```
DGS-3000-26TC:admin#show bpdu_protection
Commands: show bpdu_protection

BPDU Protection Global Settings
-----
BPDU Protection status           : Enabled
BPDU Protection Recovery Time    : 60 seconds
BPDU Protection Trap State       : None
BPDU Protection Log State        : None

DGS-3000-26TC:admin#
```

To show the bpdu_protection status ports 1-12:

```
DGS-3000-26TC:admin#show bpdu_protection ports 1-12
```

```
Commands: show bpdu_protection ports 1-12
```

Port	State	Mode	Status
1	Enabled	shutdown	Normal
2	Enabled	shutdown	Normal
3	Enabled	shutdown	Normal
4	Enabled	shutdown	Normal
5	Enabled	shutdown	Under Attack
6	Enabled	shutdown	Normal
7	Enabled	shutdown	Normal
8	Enabled	shutdown	Normal
9	Enabled	shutdown	Normal
10	Enabled	Block	Normal
11	Disabled	shutdown	Normal
12	Disabled	shutdown	Normal

```
DGS-3000-26TC:admin#
```


Chapter 12 Cable Diagnostics Command List

cable_diag ports [<portlist> | all]

12-1 cable_diag ports

Description

This command is used to configure cable diagnostics on ports. For FE port, two pairs of cable will be diagnosed. For GE port, four pairs of cable will be diagnosed.

The following test result can be displayed.

- **Open** - The cable in the error pair does not have a connection at the specified position.
- **Short** - The cable in the error pair has a short problem at the specified position.
- **Crosstalk** - The cable in the error pair has a crosstalk problem at the specified position.
- **Shutdown** - The remote partner is powered off.
- **Unknown** - The diagnosis does not obtain the cable status. Please try again.
- **OK** - The pair or cable has no error.
- **No cable** - The port does not have any cable connected to the remote partner.

When a port is in link-up status, the test will obtain the distance of the cable. Since the status is link-up, the cable will not have the short or open problem. But the test may still detect the crosstalk problem.

When a port is in link-down status, the link-down may be caused by many factors.

1. When the port has a normal cable connection, but the remote partner is powered off, the cable diagnosis can still diagnose the health of the cable as if the remote partner is powered on.
2. When the port does not have any cable connection, the result of the test will indicate no cable.
3. The test will detect the type of error and the position where the error occurs.

When the link partner is Fast Ethernet ports:

- Where the **link partner is powered on with no errors** and the **link is up**, this command cannot detect the cable length
- Where the **link partner is powered on with errors**, this command can detect whether the error is open, short, or crosstalk. In this case this command can also detect the distance of the error
- Where the **link partner is powered down with no errors** and the **link is down**, this command cannot detect the cable length
- When the **link partner is powered down with errors**, this command can detect whether the error is open, short, or crosstalk. In this case this command can also detect the distance of the error
- When there is **no link partner with no errors** and the **link is up**, this command can detect the cable length
- When there is **no link partner with errors**, this command can detect whether the error is open, short, or crosstalk. In this case this command can also detect the distance of the error

When the link partner is Gigabit Ethernet ports:

- Where the **link partner is powered on with no errors** and the **link is up**, this command can detect the cable length
- Where the **link partner is powered on with errors**, this command can detect whether the error is open, short, or crosstalk. In this case this command can also detect the distance of the error
- Where the **link partner is powered down with no errors** and the **link is down**, this command cannot detect the cable length
- When the **link partner is powered down with errors**, this command can detect whether the error is open, short, or crosstalk. In this case this command can also detect the distance of the error
- When there is **no link partner with no errors** and the **link is up**, this command can detect the cable length
- When there is **no link partner with errors**, this command can detect whether the error is open, short, or crosstalk. In this case this command can also detect the distance of the error

NOTE: This test is only for copper cable. The fiber port is not tested. For the combo ports, only the copper media will be tested. The cable diagnosis does not support on the Pair 1 and 4 if the link partner is FE port. If the link partner is FE port, the target port's link will be down after the test.

Format

cable_diag ports [<portlist> | all]

Parameters

<portlist> - Enter a list of ports used for the configuration here.

all - Specify that all the ports will be used for this configuration.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To test the cable on port 1, 11, and 12:

```
DGS-3000-26TC:admin#cable_diag ports 1,11-12
Command: cable_diag ports 1,11-12

Perform Cable Diagnostics ...

Port      Type      Link Status  Test Result      Cable Length (M)
-----
1         100BASE-T  Link Up      OK                4
11        100BASE-T  Link Down    No Cable          -
12        100BASE-T  Link Down    No Cable          -

DGS-3000-26TC:admin#
```

Chapter 13 Command Logging Command List

enable command logging

disable command logging

show command logging

13-1 enable command logging

Description

This command is used to enable the command logging function. This is disabled by default.

NOTE: When the Switch is under booting procedure, all configuration command should not be logged. When the user under AAA authentication, the user name should not be changed if user uses “enable admin” command to replace its privilege.

Format

enable command logging

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable the command logging function:

```
DGS-3000-26TC:admin#enable command logging
Command: enable command logging

Success.

DGS-3000-26TC:admin#
```

13-2 disable command logging

Description

This command is used to disable the command logging function.

Format

disable command logging

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable the command logging:

```
DGS-3000-26TC:admin#disable command logging
Command: disable command logging

Success.

DGS-3000-26TC:admin#
```

13-3 show command logging

Description

This command is used to display the Switch's general command logging configuration status.

Format

show command logging

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To show the command logging configuration status:

```
DGS-3000-26TC:admin#show command logging
Command: show command logging

Command Logging State : Disabled

DGS-3000-26TC:admin#
```

Chapter 14 Compound Authentication

Command List

create authentication guest_vlan [vlan <vlan_name 32> vlanid <vlanid 1-4094>]
enable authorization attributes
delete authentication guest_vlan [vlan <vlan_name 32> vlanid <vlanid 1-4094>]
disable authorization attributes
config authentication guest_vlan [vlan <vlan_name 32> vlanid <vlanid 1-4094>] [add delete] ports [<portlist> all]
config authentication mac_format {case [lowercase uppercase] delimiter {[hyphen colon dot none] number [1 2 5]}(1)}(1)
config authentication ports [<portlist> all] {auth_mode [port_based host_based {vlanid <vid_list> state [enable disable]}] multi_authen_methods [none any dot1x_impb impb_jwac impb_wac mac_impb mac_jwac mac_wac]}(1)
config authentication server failover [local permit block]
show authorization
show authentication
show authentication guest_vlan
show authentication mac_format
show authentication ports {<portlist>}

14-1 create authentication guest_vlan

Description

This command is used to assign a static VLAN to be a guest VLAN. The specific VLAN which is assigned to be a guest VLAN must already exist. The specific VLAN which is assigned to be a guest VLAN can't be deleted.

Format

```
create authentication guest_vlan [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]
```

Parameters

vlan - Specify the guest VLAN by VLAN name. <vlan_name 32> - Enter the guest VLAN by VLAN name. The VLAN name can be up to 32 characters long.
vlanid - Specify the guest VLAN by VLAN ID. <vlanid 1-4094> - Enter the guest VLAN by VLAN ID. The VLAN ID value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To assign a static VLAN to be a guest VLAN:

```
DGS-3000-26TC:admin#create authentication guest_vlan vlan guestVLAN
Command: create authentication guest_vlan vlan guestVLAN

Success.

DGS-3000-26TC:admin#
```

14-2 enable authorization attributes

Description

This command is used to enable authorization. When authorization for attributes is enabled, the authorized attributes (for example VLAN, 802.1p default priority, and ACL) assigned by the RADIUS server or local database, will be accepted depending on the individual module's settings. Authorization for attributes is enabled by default.

Format

enable authorization attributes

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the authorization global state:

```
DGS-3000-26TC:admin#enable authorization attributes
Command: enable authorization attributes

Success.

DGS-3000-26TC:admin#
```

14-3 delete authentication guest_vlan

Description

This command is used to delete guest VLAN setting, but won't delete the static VLAN. All ports which enable guest VLAN will move to original VLAN after deleting guest VLAN.

Format

delete authentication guest_vlan [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]

Parameters

vlan - Specify the guest VLAN by VLAN name.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - Specify the guest VLAN by VLAN ID.

<vlanid 1-4094> - Enter the VLAN ID here. This ID must be between 1 and 4094.

Restrictions

Only Administrator, Operator and Power-User level users can issue this command.

Example

To delete guest VLAN configuration:

```
DGS-3000-26TC:admin# delete authentication guest_vlan vlan guestVLAN
Command: delete authentication guest_vlan vlan guestVLAN

Success.

DGS-3000-26TC:admin#
```

14-4 disable authorization attributes

Description

This command is used to disable authorization. When authorization for attributes is disabled, the authorized attributes (for example VLAN, 802.1p default priority, and ACL) assigned by the RADIUS server or local database, will be ignored even if the individual module's setting is enabled. Authorization for attributes is enabled by default.

Format

disable authorization attributes

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the authorization global state:

```
DGS-3000-26TC:admin#disable authorization attributes
Command: disable authorization attributes

Success.

DGS-3000-26TC:admin#
```

14-5 config authentication guest_vlan

Description

This command is used to assign or remove ports to or from a guest VLAN.

Format

config authentication guest_vlan [vlan <vlan_name 32> | vlanid <vlanid 1-4094>] [add | delete] ports [<portlist> | all]

Parameters

-
- vlan** - Specify the guest VLAN name.
<vlan_name 32> - Enter the guest VLAN name. The VLAN name can be up to 32 characters long.
-
- vlanid** - Specify the guest VLAN VID.
<vlanid 1-4094> - Enter the guest VLAN VID. The VLAN ID value must be between 1 and 4094.
-
- add** - Specify to add a port list to the guest VLAN.
-
- delete** - Specify to delete a port list from the guest VLAN.
-
- ports** - Specify a port or range of ports to configure.
<portlist> - Enter a range of ports to configure.
all - Specify to configure all ports.
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure authentication for all ports for a guest VLAN called "gv":

```
DGS-3000-26TC:admin#config authentication guest_vlan vlan gv add ports all
Command: config authentication guest_vlan vlan gv add ports all

Success.

DGS-3000-26TC:admin#
```

14-6 config authentication mac_format

Description

This command is used to set the MAC address format that will be used for authentication username via the RADIUS server.

Format

config authentication mac_format {case [lowercase | uppercase] | delimiter {[hyphen | colon | dot | none] | number [1 | 2 | 5]}(1)}(1)

Parameters

-
- case** - Specify the case format used.
lowercase - Specify using the lowercase format, the RADIUS authentication username will be formatted as: aa-bb-cc-dd-ee-ff.
uppercase - Specify using the uppercase format, the RADIUS authentication username will be formatted as: AA-BB-CC-DD-EE-FF.
-
- delimiter** - Specify the delimiter format used.
hyphen - Specify using the "-" as delimiter, the format is: AA-BB-CC-DD-EE-FF
colon - Specify using the ":" as delimiter, the format is: AA:BB:CC:DD:EE:FF
dot - Specify using the "." as delimiter, the format is: AA.BB.CC.DD.EE.FF
none - Specify not using any delimiter, the format is: AABCCDDDEEFF
-
- number** - Specify the delimiter number used.
1 - Single delimiter, the format is: AABCC.DDEEFF
2 - Double delimiter, the format is: AAB.CCDD.EEFF
5 - Multiple delimiter, the format is: AA.BB.CC.DD.EE.FF
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the MAC address format to IETF style:

```
DGS-3000-26TC:admin#config authentication mac_format case uppercase delimiter hyphen number 5
Command: config authentication mac_format case uppercase delimiter hyphen number 5

Success.

DGS-3000-26TC:admin#
```

14-7 config authentication ports

Description

This command is used to configure authorization mode and authentication method on ports.

Format

```
config authentication ports [<portlist> | all] {auth_mode [port_based | host_based {vlanid <vid_list> state
[enable | disable]}} | multi_authen_methods [none | any | dot1x_impb | impb_jwac | impb_wac | mac_impb|
mac_jwac| mac_wac]}(1)
```

Parameters

-
- <portlist>** - Enter a port or range of ports to configure.
 - all** - Specify to configure all ports.
 - auth_mode** - The authorization mode is port-based or host-based.
 - port-based** - If one of the attached hosts pass the authentication, all hosts on the same port will be granted access to the network. If the user fails the authentication, this port will keep trying the next authentication.
 - host-based** - Specify to allow every user to be authenticated individually. The "vlanid" can authenticate the client on a specific authenticated VLAN(s). If the "vlanid" is not specified, or all the VLANs are disabled, it means the host does not care which VLAN the client comes from. The client will be authenticated if the client's MAC address (regardless of the VLAN) is not authenticated.
 - vlanid** - (Optional) Specify the VLAN ID used for this configuration.
 - <vid_list>** - Enter the VLAN ID used for this configuration here.
 - state** - (Optional) Specify whether the authentication mode will be enabled or disabled on a specified VLAN.
 - enable** - Specify that the authentication mode will be enabled on the specified VLAN.
 - disable** - Specify that the authentication mode will be disabled on the specified VLAN.
 - multi_authen_methods** - Specify the compound authentication method. (If the compound authentication method selected includes IMPB(ex: dot1x_impb, impb_jwac, impb_wac, mac_impb) and the other method (802.1X, JWAC, WAC or MAC) is globally disabled, only IMPB will be used. If the mac_jwac or mac_wac option is selected, both authentication methods will be applied. If one of the authentication methods fails or is globally disabled, then access will be denied.)
 - none** - Specify that compound authentication is not enabled.
 - any** - Specify if any of the authentication methods (802.1X, MAC, and JWAC/WAC) pass, then pass.
 - dot1x_impb** - Dot1x will be verified first, and then IMPB will be verified. Both authentications need to be passed.
 - impb_jwac** - JWAC will be verified first, and then IMPB will be verified. Both authentications need to be passed.
 - impb_wac** - WAC will be verified first, and then IMPB will be verified. Both authentications need to be passed.
 - mac_impb** - MAC will be verified first, and then IMPB will be verified. Both authentications need to be passed.
 - mac_jwac** - MAC will be verified first followed by JWAC. Both authentication methods need to be passed.
 - mac_wac** - MAC will be verified first followed by WAC. Both authentication methods need to be passed.
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the authentication mode of all ports to host-based:

```
DGS-3000-26TC:admin#config authentication ports all auth_mode host_based
Command: config authentication ports all auth_mode host_based

Success.

DGS-3000-26TC:admin#
```

To set the compound authentication method of all ports to “any”:

```
DGS-3000-26TC:admin#config authentication ports all multi_authen_methods any
Command: config authentication ports all multi_authen_methods any

Success.

DGS-3000-26TC:admin#
```

14-8 config authentication server failover

Description

This command is used to configure authentication server failover function.

Format

config authentication server failover [local | permit | block]

Parameters

local - Uses local DB to authenticate the client.
permit - The client is always regarded as authenticated.
block - Blocks the client. This is the default.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the authentication server authentication fail over state:

```
DGS-3000-26TC:admin#config authentication server failover local
Command: config authentication server failover local

Success.

DGS-3000-26TC:admin#
```

14-9 show authorization

Description

This command is used to display authorization status.

Format

show authorization

Parameters

None.

Restrictions

None.

Example

This example displays authorization status:

```
DGS-3000-26TC:admin#show authorization
Command: show authorization

Authorization for Attributes: Enabled.

DGS-3000-26TC:admin#
```

14-10 show authentication

Description

This command is used to display the authentication server failover configuration.

Format

show authentication

Parameters

None.

Restrictions

None.

Example

To show authentication global configuration:

```
DGS-3000-26TC:admin#show authentication
Command: show authentication

Authentication Server Failover: Local.

DGS-3000-26TC:admin#
```

14-11 show authentication guest_vlan

Description

This command is used to display guest VLAN information.

Format

show authentication guest_vlan

Parameters

None.

Restrictions

None.

Example

To display the guest VLAN setting:

```
DGS-3000-26TC:admin#show authentication guest_vlan
Command: show authentication guest_vlan

Guest VLAN VID          :
Guest VLAN Member Ports:

Total Entries: 0

DGS-3000-26TC:admin#
```

14-12 show authentication mac_format

Description

This command is used to display the authentication MAC format setting.

Format

show authentication mac_format

Parameters

None.

Restrictions

None.

Example

To display the authentication MAC format setting:

```
DGS-3000-26TC:admin#show authentication mac_format
Command: show authentication mac_format

Case           : Uppercase
Delimiter      : None
Delimiter Number : 5

DGS-3000-26TC:admin#
```

14-13 show authentication ports**Description**

This command is used to display the authentication method and authorization mode on ports.

Format

show authentication ports {<portlist>}

Parameters

<portlist> - (Optional) Enter to display compound authentication on specific port(s).

Restrictions

None.

Example

To display the authentication settings for ports 1 to 3:

```
DGS-3000-26TC:admin#show authentication ports 1-3
Command: show authentication ports 1-3

Port  Methods          Auth Mode  Authentication VLAN(s)
-----
1     None                 Host-based
2     None                 Host-based
3     None                 Host-based

DGS-3000-26TC:admin#
```

Chapter 15 Configuration Command List

```
show config [effective | modified | current_config | boot_up | file <pathname 64>] {[include | exclude | begin]
<filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include | exclude | begin] <filter_string 80>
{<filter_string 80> {<filter_string 80>}} {[include | exclude | begin] <filter_string 80> {<filter_string 80>
{<filter_string 80>}}}]}
```

```
config configuration <pathname 64> [boot_up | active]
```

```
save {[config <pathname 64> | log | all]}
```

```
show boot_file
```

15-1 show config

Description

This command is used to display the content of the current configuration, the configuration to be used in next boot, or the configuration file specified by the command.

The output stream of the configuration data can be filtered by the expression specified at the end of the command. The expression can contain up to three multiple filter evaluations. A filter evaluation begins with a filter type (include, exclude, and begin), followed by up to three filter strings (ex: "stp"). A filter string is enclosed by symbol ". The following describes the meaning of the each filter type.

- include: includes lines that contain the specified filter string.
- exclude: excludes lines that contain the specified filter string
- begin: The first line that contains the specified filter string will be the first line of the output.

The relationship of multiple filter strings following the same filter type is OR. That is, one line is qualified if one of specified filter strings is matched.

If more than one filter evaluation is specified; the output of filtered by the former evaluation will be used as the input of the latter evaluation.

Format

```
show config [effective | modified | current_config | boot_up | file <pathname 64>] {[include | exclude | begin]
<filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include | exclude | begin] <filter_string 80>
{<filter_string 80> {<filter_string 80>}} {[include | exclude | begin] <filter_string 80> {<filter_string 80>
{<filter_string 80>}}}]}
```

Parameters

effective - Shows commands which only affects the behavior of the device. For example, if STP is disabled, only "STP is disabled" is displayed for STP configuration. All other lower level setting regarding STP is not displayed. The lower level setting will only be displayed when the higher level setting is enabled.

modified - Shows only the commands which are not default setting.

current_config - Specify the current configuration.

boot_up - Specify the list of the boot-up configuration.

file - Specify to display the configuration file.

<pathname 64> - Enter an absolute pathname on the device file system. If pathname is not specified, the boot-up configuration is implied. This name can be up to 64 characters long.

include - (Optional) Includes lines that contain the specified filter string.

exclude - (Optional) Excludes lines that contain the specified filter string.

begin - (Optional) The first line that contains the specified filter string will be the first line of the output.

<filter_string 80> - A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

<filter_string 80> - (Optional) A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain

the " character. The filter string is case sensitive. This value can be up to 80 characters long.

<filter_string 80> - (Optional) A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

include - (Optional) Includes lines that contain the specified filter string.

exclude - (Optional) Excludes lines that contain the specified filter string.

begin - (Optional) The first line that contains the specified filter string will be the first line of the output.

<filter_string 80> - A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

<filter_string 80> - (Optional) A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

<filter_string 80> - (Optional) A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

include - (Optional) Includes lines that contain the specified filter string.

exclude - (Optional) Excludes lines that contain the specified filter string.

begin - (Optional) The first line that contains the specified filter string will be the first line of the output.

<filter_string 80> - A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

<filter_string 80> - (Optional) A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

<filter_string 80> - (Optional) A filter string is enclosed by symbol ". Thus, the filter string itself cannot contain the " character. The filter string is case sensitive. This value can be up to 80 characters long.

Restrictions

Only Administrators can issue this command.

Example

The following example illustrates how the special filters, 'modified', affect the configuration display:

```
DGS-3000-26TC:admin#show config modified
Command: show config modified

#-----
#                               DGS-3000-26TC Gigabit Ethernet Switch
#                               Configuration
#
#                               Firmware: Build 2.00.004
#                               Copyright(C) 2016 D-Link Corporation. All rights reserved.
#-----

# DEVICE

# BASIC

# ACCOUNT LIST
create account admin admin
admin
admin

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  ENTER  Next Entry  a  All
```

15-2 config configuration

Description

This command is used to select a configuration file as the next boot-up configuration or to apply a specific configuration to the system. This command is required when multiple configuration files are supported.

Format

config configuration <pathname 64> [boot_up | active]

Parameters

<pathname 64> - Enter a configuration file on the device file system.

boot_up - Specify it as a boot-up file.

active - Specify to apply the configuration.

Restrictions

Only Administrators can issue this command.

Example

To configure the Switch's configuration file as boot-up:

```
DGS-3000-26TC:admin#config configuration config.cfg boot_up
Command: config configuration config.cfg boot_up

Success.
DGS-3000-26TC:admin#
```

15-3 save

Description

This command is used to save the current configuration to a file.

Format

save {[config <pathname 64> | log | all]}

Parameters

config - (Optional) Specify to save the configuration.

<pathname 64> - Enter the pathname of the indicated pathname. The pathname can be up to 64 characters long.

log - (Optional) Specify to save the log.

all - (Optional) Specify to save changes to an active , current configuration to the log file.

Restrictions

Only Administrators and Operators can issue this command.

Example

To save the current configuration to the bootup configuration file:


```
DGS-3000-26TC:admin#save
Command: save

Saving all configurations to NV-RAM..... Done.

DGS-3000-26TC:admin#
```

To save the current configuration to a destination file, named 1:

```
DGS-3000-26TC:admin#save config 1
Command: save config 1

Saving all configurations to NV-RAM..... Done.

DGS-3000-26TC:admin#
```

To save a log to NV-RAM:

```
DGS-3000-26TC:admin#save log
Command: save log

Saving all system logs to NV-RAM..... Done.

DGS-3000-26TC:admin#
```

To save all the configurations and logs to NV-RAM:

```
DGS-3000-26TC:admin#save all
Command: save all

Saving all configurations and logs to NV-RAM..... Done.

DGS-3000-26TC:admin#
```

15-4 show boot file

Description

This command is used to display the configuration file and firmware image assigned as boot-up files.

Format

show boot_file

Parameters

None.

Restrictions

None.

Example

To display the boot file:

```
DGS-3000-26TC:admin#show boot_file
Command: show boot_file

Boot-up Firmware      : /c:/runtime.had
Boot-up Configuration : /c:/config.cfg

DGS-3000-26TC:admin#
```

Chapter 16 Connectivity Fault Management (CFM) Command List

create cfm md <string 22> {md_index <uint 1-4294967295>} level <int 0-7>
config cfm md [<string 22> md_index <uint 1-4294967295>] {mip [none auto explicit] sender_id [none chassis manage chassis_manage]}
create cfm ma <string 22> {ma_index <uint 1-4294967295>} md [<string 22> md_index <uint 1-4294967295>]
config cfm ma [<string 22> ma_index <uint 1-4294967295>] md [<string 22> md_index <uint 1-4294967295>] {vlanid <vlanid 1-4094> mip [none auto explicit defer] sender_id [none chassis manage chassis_manage defer] ccm_interval [10ms 100ms 1sec 10sec 1min 10min] mepid_list [add delete] <mepid_list>}
create cfm mep <string 32> mepid <int 1-8191> md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] direction [inward outward] port <port>
config cfm mep [mepname <string 32> mepid <int 1-8191> md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] {state [enable disable] ccm [enable disable] pdu_priority <int 0-7> fault_alarm [all mac_status remote_ccm error_ccm xcon_ccm none] alarm_time <centisecond 250 -1000> alarm_reset_time <centisecond 250-1000>}(1)
config cfm ais md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] mepid <int 1-8191> {period [1sec 1min] level <int 0-7> state [enable disable]}
config cfm lock md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] mepid <int 1-8191> {period [1sec 1min] level <int 0-7> state [enable disable]}(1)
delete cfm mep [mepname <string 32> mepid <int 1-8191> md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>]]
delete cfm ma [<string 22> ma_index <uint 1-4294967295>] md [<string 22> md_index <uint 1-4294967295>]
delete cfm md [<string 22> md_index <uint 1-4294967295>]
enable cfm
disable cfm
config cfm ports <portlist> state [enable disable]
show cfm ports <portlist>
show cfm {[md [<string 22> md_index <uint 1-4294967295>] {ma [<string 22> ma_index <uint 1-4294967295>] {mepid <int 1-8191>}} mepname <string 32>}}
show cfm fault {md [<string 22> md_index <uint 1-4294967295>] {ma [<string 22> ma_index <uint 1-4294967295>]}}
show cfm port <port> {level <int 0-7> direction [inward outward] vlanid <vlanid 1-4094>}
cfm lock md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] mepid <int 1-8191> remote_mepid <int 1-8191> action [start stop]
cfm loopback <macaddr> [mepname <string 32> mepid <int 1-8191> md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] {num <int 1-65535> [length <int 0-1500> pattern <string 1500>] pdu_priority <int 0-7>}
cfm linktrace <macaddr> [mepname <string 32> mepid <int 1-8191> md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] {ttl <int 2-255> pdu_priority <int 0-7>}
show cfm linktrace [mepname <string 32> mepid <int 1-8191> md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] {trans_id <uint>}
delete cfm linktrace {[md [<string 22> md_index <uint 1-4294967295>] {ma [<string 22> ma_index <uint 1-4294967295>] {mepid <int 1-8191>}} mepname <string 32>}}
show cfm mipccm
config cfm mp_ltr_all [enable disable]
show cfm mp_ltr_all
show cfm remote_mep [mepname <string 32> md [<string 22> md_index <uint 1-4294967295>] ma [<string 22> ma_index <uint 1-4294967295>] mepid <int 1-8191>] remote_mepid <int 1-8191>
show cfm pkt_cnt {[ports <portlist> {rx tx}} rx tx ccm}}
clear cfm pkt_cnt {[ports <portlist> {rx tx}} rx tx ccm}}

16-1 create cfm md

Description

This command is used to create a maintenance domain.

Format

create cfm md <string 22> {md_index <uint 1-4294967295>} level <int 0-7>

Parameters

<string 22>	- Enter the maintenance domain name. This name can be up to 22 characters long.
md_index	- (Optional) Specify the maintenance domain index.
<uint 1-4294967295>	- Enter the maintenance domain index value here. This value must be between 1 and 4294967295.
level	- Specify the maintenance domain level.
<int 0-7>	- Enter the maintenance domain level here. This value must be between 0 and 7.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a maintenance domain called “op_domain” and assign a maintenance domain level of “2”:

```
DGS-3000-26TC:admin#create cfm md op_domain level 2
Command: create cfm md op_domain level 2

Success.

DGS-3000-26TC:admin#
```

16-2 config cfm md

Description

This command is used to configure the parameters of a maintenance domain. The creation of MIPs on an MA is useful to trace the link, MIP by MIP. It also allows the user to perform a loopback from an MEP to an MIP.

Format

config cfm md [<string 22> | md_index <uint 1-4294967295>] {mip [none | auto | explicit] | sender_id [none | chassis | manage | chassis_manage]}(1)

Parameters

<string 22>	- Enter the maintenance domain name. This name can be up to 22 characters long.
md_index	- Specify the maintenance domain index.
<uint 1-4294967295>	- Enter the maintenance domain index value here. This value must be between 1 and 4294967295.
mip	- Specify to configure MIPs.
none	- Specify not to create MIPs. This is the default value.
auto	- MIPs can always be created on any ports in this MD, if that port is not configured with an MEP of this MD. For the intermediate switch in an MA, the setting must be automatic in order for the MIPs to be created on this device.
explicit	- MIPs can be created on any ports in this MD, only if the next existent lower level has an MEP

configured on that port, and that port is not configured with an MEP of this MD.

sender_id - Specify the control transmission of the sender ID TLV.

none - Specify not to transmit the sender ID TLV. This is the default value.

chassis - Transmits the sender ID TLV with the chassis ID information.

manage - Transmits the sender ID TLV with the managed address information.

chassis_manage - Transmits sender ID TLV with chassis ID information and manage address information.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the maintenance domain called “op_domain” and specify the explicit option for creating MIPs:

```
DGS-3000-26TC:admin#config cfm md op_domain mip explicit
Command: config cfm md op_domain mip explicit

Success.

DGS-3000-26TC:admin#
```

16-3 create cfm ma

Description

This command is used to create a maintenance association. Different MAs in an MD must have different MA Names. Different MAs in different MDs may have the same MA Name.

Format

create cfm ma <string 22> {ma_index <uint 1-4294967295>} md [<string 22> | md_index <uint 1-4294967295>]

Parameters

<string 22> - Enter the maintenance association name. This name can be up to 22 characters long.

ma_index - (Optional) Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

md - Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name here. This name can be up to 22 characters long.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a maintenance association called “op1” and assign it to the maintenance domain “op_domain”:

```
DGS-3000-26TC:admin#create cfm ma op1 md op_domain
Command: create cfm ma op1 md op_domain

Success.

DGS-3000-26TC:admin#
```

16-4 config cfm ma

Description

This command is used to configure the parameters of a maintenance association. The MEP list specified for an MA can be located in different devices. MEPs must be created on the ports of these devices explicitly. An MEP will transmit a CCM packet periodically across the MA. The receiving MEP will verify these received CCM packets from the other MEPs against this MEP list for the configuration integrity check.

Format

```
config cfm ma [<string 22> | ma_index <uint 1-4294967295>] md [<string 22> | md_index <uint 1-4294967295>] {vlanid <vlanid 1-4094> | mip [none | auto | explicit | defer] | sender_id [none | chassis | manage | chassis_manage | defer] | ccm_interval [10ms | 100ms | 1sec | 10sec | 1min | 10min] | mepid_list [add | delete] <mepid_list>}(1)
```

Parameters

<string 22> - Enter the maintenance association name. This name can be up to 22 characters long.
ma_index - Specify the maintenance association index.
<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.
md - Specify the maintenance domain name.
<string 22> - Enter the maintenance domain name here. This name can be up to 22 characters long.
md_index - Specify the maintenance domain index.
<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.
vlanid - Specify the VLAN Identifier. Different MAs must be associated with different VLANs.
<vlanid 1-4094> - Enter the VLAN ID used here. This value must be between 1 and 4094.
mip - Specify to configure MIPs.
none - Specify not to create MIPs.
auto - MIPs can always be created on any ports in this MA, if that port is not configured with an MEP of that MA.
explicit - MIP can be created on any ports in this MA, only if the next existing lower level has an MEP configured on that port, and that port is not configured with an MEP of this MA.
defer - Inherit the setting configured for the maintenance domain that this MA is associated with. This is the default value.
sender_id - This is the control transmission of the sender ID TLV.
none - Specify not to transmit the sender ID TLV. This is the default value.
chassis - Transmits the sender ID TLV with the chassis ID information.
manage - Transmits the sender ID TLV with the manage address information.
chassis_manage - Transmits the sender ID TLV with the chassis ID information and the manage address information.
defer - Inherits the setting configured for the maintenance domain that this MA is associated with. This is the default value.
ccm_interval - Specify the CCM interval.
10ms - Specify that the CCM interval will be set to 10 milliseconds. Not recommended.
100ms - Specify that the CCM interval will be set to 100 milliseconds. Not recommended.
1sec - Specify that the CCM interval will be set to 1 second.
10sec - Specify that the CCM interval will be set to 10 seconds. This is the default value.
1min - Specify that the CCM interval will be set to 1 minute.
10min - Specify that the CCM interval will be set to 10 minutes.
mepid_list - Specify the MEPIDs contained in the maintenance association. The range of the MEPID is 1-8191.
add - Specify to add MEPID(s).

delete - Specify to delete MEPID(s). By default, there is no MEPID in a newly created maintenance association.

<mepid_list> - Enter the MEP ID list here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a CFM MA:

```
DGS-3000-26TC:admin#config cfm ma op1 md op_domain vlanid 1 ccm_interval 1sec
Command: config cfm ma op1 md op_domain vlanid 1 ccm_interval 1sec

Success.

DGS-3000-26TC:admin#
```

16-5 create cfm mep

Description

This command is used to create an MEP. Different MEPs in the same MA must have a different MEPID. MD name, MA name, and MEPID that together identify a MEP.

Different MEPs on the same device must have a different MEP name. Before creating an MEP, its MEPID should be configured in the MA's MEPID list.

Format

```
create cfm mep <string 32> mepid <int 1-8191> md [<string 22> | md_index <uint 1-4294967295>] ma
[<string 22> | ma_index <uint 1-4294967295>] direction [inward | outward] port <port>
```

Parameters

<string 32> - Enter the MEP name used. It is unique among all MEPs configured on the device. This name can be up to 32 characters long.

mepid - Specify the MEP ID. It should be configured in the MA's MEPID list.

<int 1-8191> - Enter the MEP ID used here. This value must be between 1 and 8191.

md - Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name used here. This name can be up to 22 characters long.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

ma - Specify the maintenance association name.

<string 22> - Enter the maintenance association name used here. This name can be up to 22 characters long.

ma_index - Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

direction - Specify the MEP direction.

inward - Specify the inward facing (up) MEP.

outward - Specify the outward facing (down) MEP.

port - Specify the port number. This port should be a member of the MA's associated VLAN.

<port> - Enter the port number used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a CFM MEP:

```
DGS-3000-26TC:admin#create cfm mep mep1 mepid 1 md op_domain ma opl direction inward port 2
Command: create cfm mep mep1 mepid 1 md op_domain ma opl direction inward port 2

Success.

DGS-3000-26TC:admin#
```

16-6 config cfm mep

Description

This command is used to configure the parameters of an MEP. An MEP may generate 5 types of Fault Alarms, as shown below by their priorities from high to low:

- Cross-connect CCM Received: priority 5
- Error CCM Received: priority 4
- Some Remote MEPs Down: priority 3
- Some Remote MEP MAC Status Errors: priority 2
- Some Remote MEP Defect Indications: priority 1

If multiple types of the fault occur on an MEP, only the fault with the highest priority will be alarmed.

Format

```
config cfm mep [mepname <string 32> | mepid <int 1-8191> md [<string 22> | md_index <uint 1-4294967295>] ma [<string 22> | ma_index <uint 1-4294967295>] {state [enable | disable] | ccm [enable | disable] | pdu_priority <int 0-7> | fault_alarm [all | mac_status | remote_ccm | error_ccm | xcon_ccm | none] | alarm_time <centisecond 250 -1000> | alarm_reset_time <centisecond 250-1000>}(1)
```

Parameters

mepname - Specify the MEP name. <string 32> - Enter the MEP name used here. This name can be up to 32 characters long.
mepid - Specify the MEP ID. <int 1-8191> - Enter the MEP ID used here. This value must be between 1 and 8191.
md - Specify the maintenance domain name. <string 22> - Enter the maintenance domain name used here. This name can be up to 22 characters long.
md_index - Specify the maintenance domain index. <uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.
ma - Specify the maintenance association name. <string 22> - Enter the maintenance association name used here. This name can be up to 22 characters long.
ma_index - Specify the maintenance association index. <uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.
state - Specify the MEP administrative state. enable - Specify that the MEP will be enabled. disable - Specify that the MEP will be disabled. This is the default value.
ccm - Specify the CCM transmission state. enable - Specify that the CCM transmission will be enabled. disable - Specify that the CCM transmission will be disabled. This is the default value.
pdu_priority - The 802.1p priority is set in the CCMs and the LTMs messages transmitted by the MEP. The default value is 7. <int 0-7> - Enter the PDU priority value here. This value must be between 0 and 7.
fault_alarm - Specify the control types of the fault alarms sent by the MEP. all - All types of fault alarms will be sent.

mac_status - Only the fault alarms whose priority is equal to or higher than "Some Remote MEP MAC Status Errors" are sent.

remote_ccm - Only the fault alarms whose priority is equal to or higher than "Some Remote MEPs Down" are sent.

error_ccm - Only the fault alarms whose priority is equal to or higher than "Error CCM Received" are sent.

xcon_ccm - Only the fault alarms whose priority is equal to or higher than "Cross-connect CCM Received" are sent.

none - No fault alarm is sent. This is the default value.

alarm_time - Specify the time that a defect must exceed before the fault alarm can be sent. The unit is centisecond, the range is 250-1000. The default value is 250.

<centisecond 250-1000> - Enter the alarm time value here. This value must be between 250 and 1000 centiseconds.

alarm_reset_time - Specify the dormant duration time before a defect is triggered before the fault can be re-alarmed. The unit is centisecond, the range is 250-1000. The default value is 1000.

<centisecond 250-1000> - Enter the alarm reset time value here. This value must be between 250 and 1000 centiseconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a CFM MEP:

```
DGS-3000-26TC:admin#config cfm mep mepname mep1 state enable ccm enable
Command: config cfm mep mepname mep1 state enable ccm enable

Success.

DGS-3000-26TC:admin#
```

16-7 config cfm ais md

Description

This command is used to configure the parameters of the AIS function on a MEP.

Format

config cfm ais md [<string 22> | md_index <uint 1-4294967295>] ma [<string 22> | ma_index <uint 1-4294967295>] mepid <int 1-8191> {period [1sec | 1min] | level <int 0-7> | state [enable | disable]}(1)

Parameters

md - Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name. The maximum length is 22 characters.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

ma - Specify the maintenance association name.

<string 22> - Enter the maintenance association name. The maximum length is 22 characters.

ma_index - Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

mepid - Specify the MEPID.

<int 1-8191> - Enter the MEP MEPID between 1 and 8191.

period - Specify the transmitting interval of the AIS PDU.

1sec - Specify that the transmitting interval period will be set to 1 second.

1min - Specify that the transmitting interval period will be set to 1 minute.

level - Specify the client level ID to which the MEP sends AIS PDU. The default client MD level is the MD level that the most immediate client layer MIPs and MEPs exist on.

<int 0-7> - Enter the client level ID used here. This value must be between 0 and 7.

state - Specify the state of the AIS function.

enable - Specify that AIS function state will be enabled.

disable - Specify that AIS function state will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the AIS function so that it is enabled and has a client level of 5:

```
DGS-3000-26TC:admin# config cfm ais md op-domain ma op-ma mepid 1 state enable level 5
Command: config cfm ais md op-domain ma op-ma mepid 1 state enable level 5

Success.

DGS-3000-26TC:admin#
```

16-8 config cfm lock md

Description

This command is used to configure the parameters of the LCK function on a MEP.

Format

config cfm lock md [**<string 22>** | **md_index** **<uint 1-4294967295>**] **ma** [**<string 22>** | **ma_index** **<uint 1-4294967295>**] **mepid** **<int 1-8191>** { **period** [**1sec** | **1min**] | **level** **<int 0-7>** | **state** [**enable** | **disable**]}(1)

Parameters

md - Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name. The maximum length is 22 characters.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

ma - Specify the maintenance association name.

<string 22> - Enter the maintenance association name. The maximum length is 22 characters.

ma_index - Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

mepid - Specify the MEPID.

<int 1-8191> - Enter the MEP MEPID between 1 and 8191.

period - Specify the transmitting interval of the LCK PDU.

1sec - Specify that the transmitting interval period will be set to 1 second.

1min - Specify that the transmitting interval period will be set to 1 minute.

level - Specify the client level ID to which the MEP sends LCK PDU. The default client MD level is the MD level that the most immediate client layer MIPs and MEPs exist on.

<int 0-7> - Enter the client level ID used here. This value must be between 0 and 7.

state - Specify the LCK function state used.

enable - Specify that LCK function state will be enabled.

disable - Specify that LCK function state will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the LCK function state as enabled and specify a client level of 5:

```
DGS-3000-26TC:admin# config cfm lock md op-domain ma op-ma mepid 1 state enable level 5
Command: config cfm lock md op-domain ma op-ma mepid 1 state enable level 5

Success.

DGS-3000-26TC:admin#
```

16-9 delete cfm mep

Description

This command is used to delete a previously created MEP.

Format

delete cfm mep [mepname <string 32> | mepid <int 1-8191> md [<string 22> | md_index <uint 1-4294967295>] ma [<string 22> | ma_index <uint 1-4294967295>]]

Parameters

mepname - Specify the MEP name.
<string 32> - Enter the MEP name used here. This name can be up to 32 characters long.

mepid - Specify the MEP ID.
<int 1-8191> - Enter the MEP ID used here. This value must be between 1 and 8191.

md - Specify the maintenance domain name.
<string 22> - Enter the maintenance domain name used here. This name can be up to 22 characters long.

md_index - Specify the maintenance domain index.
<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

ma - Specify the maintenance association name.
<string 22> - Enter the maintenance association name used here. This name can be up to 22 characters long.

ma_index - Specify the maintenance association index.
<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a CFM MEP:

```
DGS-3000-26TC:admin#delete cfm mep mepname mep1
Command: delete cfm mep mepname mep1

Success.

DGS-3000-26TC:admin#
```

16-10 delete cfm ma

Description

This command is used to delete a created maintenance association. All MEPs created in the maintenance association will be deleted automatically.

Format

delete cfm ma [<string 22> | ma_index <uint 1-4294967295>] md [<string 22> | md_index <uint 1-4294967295>]

Parameters

<string 22> - Enter the maintenance association name. This name can be up to 22 characters long.

ma_index - Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

md - Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name used here. This name can be up to 22 characters long.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a CFM MA:

```
DGS-3000-26TC:admin#delete cfm ma op1 md op_domain
Command: delete cfm ma op1 md op_domain

Success.

DGS-3000-26TC:admin#
```

16-11 delete cfm md

Description

This command is used to delete a previously created maintenance domain. All the MEPs and maintenance associations created in the maintenance domain will be deleted automatically.

Format

delete cfm md [<string 22> | md_index <uint 1-4294967295>]

Parameters

<string 22> - Enter the maintenance domain name. This name can be up to 22 characters long.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a CFM MD:

```
DGS-3000-26TC:admin#delete cfm md op_domain
Command: delete cfm md op_domain

Success.

DGS-3000-26TC:admin#
```

16-12 enable cfm

Description

This command is used to enable the CFM globally.

Format

enable cfm

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the CFM globally:

```
DGS-3000-26TC:admin#enable cfm
Command: enable cfm

Success.

DGS-3000-26TC:admin#
```

16-13 disable cfm

Description

This command is used to disable the CFM globally.

Format

disable cfm

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the CFM globally:

```
DGS-3000-26TC:admin#disable cfm
Command: disable cfm

Success.

DGS-3000-26TC:admin#
```

16-14 config cfm ports

Description

This command is used to enable or disable the CFM function on a per-port basis. By default, the CFM function is disabled on all ports.

If the CFM is disabled on a port:

1. MIPs are never created on that port.
2. MEPs can still be created on that port, and the configuration can be saved.
3. MEPs created on that port can never generate or process CFM PDUs. If the user issues a Loopback or Link trace test on those MEPs, it will prompt the user to inform them that the CFM function is disabled on that port.

Format

config cfm ports <portlist> state [enable | disable]

Parameters

```
<portlist> - Enter the list of ports used for this configuration.
state - Specify that the CFM function will be enabled or disabled.
   enable - Specify that the CFM function will be enabled.
   disable - Specify that the CFM function will be disabled.
```

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the CFM ports:

```
DGS-3000-26TC:admin#config cfm ports 2-5 state enable
Command: config cfm ports 2-5 state enable

Success.

DGS-3000-26TC:admin#
```

16-15 show cfm ports

Description

This command is used to show the CFM state of specified ports.

Format

show cfm ports <portlist>

Parameters

<portlist> - Enter the list of logical ports.

Restrictions

None.

Example

To show the CFM ports:

```
DGS-3000-26TC:admin#show cfm ports 3-6
Command: show cfm ports 3-6

Port    State
-----  -
3       Enabled
4       Enabled
5       Enabled
6       Disabled

DGS-3000-26TC:admin#
```

16-16 show cfm

Description

This command is used to show the CFM configuration.

Format

show cfm {[md [<string 22> | md_index <uint 1-4294967295>] {ma [<string 22> | ma_index <uint 1-4294967295>] {mepid <int 1-8191>}} | mepname <string 32>]}

Parameters

md - (Optional) Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name used here. This name can be up to 22 characters long.

md_index - (Optional) Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

ma - (Optional) Specify the maintenance association name.

<string 22> - Enter the maintenance association name used here. This name can be up to 22 characters long.

ma_index - (Optional) Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

mepid - (Optional) Specify the MEP ID.

<int 1-8191> - Enter the MEP ID used here. This value must be between 1 and 8191.

mepname - (Optional) Specify the MEP name.

<string 32> - Enter the MEP name used here. This name can be up to 32 characters long.

Restrictions

None.

Example

To show the CFM configuration:

```
DGS-3000-26TC:admin#show cfm
Command: show cfm

CFM State: Enabled

MD Index      MD Name                Level
-----
1             op_domain              2

DGS-3000-26TC:admin#show cfm md op_domain
Command: show cfm md op_domain

MD Index      : 1
MD Name       : op_domain
MD Level      : 2
MIP Creation  : Explicit
SenderID TLV : None

MA Index      MA Name                VID
-----
1             op1                    1

DGS-3000-26TC:admin#show cfm md op_domain ma op1
Command: show cfm md op_domain ma op1

MA Index      : 1
MA Name       : op1
MA VID        : 1
MIP Creation  : Defer
CCM Interval  : 1 second
SenderID TLV  : Defer
MEPID List    : 1

MEPID  Direction  Port  Name      MAC Address
-----
1      Inward        2     mep1     00-01-02-03-04-02
```



```

DGS-3000-24TC:admin#show cfm mepname mep1
Command: show cfm mepname mep1

Name                : mep1
MEPID               : 1
Port                : 1
Direction           : Inward
CFM Port Status    : Enabled
MAC Address         : 78-54-2E-B6-6C-01
MEP State           : Enabled
CCM State           : Enabled
PDU Priority        : 7
Fault Alarm         : Disabled
Alarm Time          : 250 centisecond((1/100)s)
Alarm Reset Time    : 1000 centisecond((1/100)s)
Highest Fault       : None
AIS State           : Disabled
AIS Period          : 1 Second
AIS Client Level    : Invalid
AIS Status          : Not Detected
LCK State           : Disabled
LCK Period          : 1 Second
LCK Client Level    : Invalid
LCK Status          : Not Detected
Out-of-Sequence CCMS: 0 received
Cross-connect CCMS : 0 received
Error CCMS          : 0 received
Normal CCMS         : 2 received
Port Status CCMS   : 0 received
If Status CCMS     : 0 received
CCMS transmitted   : 14
In-order LBRs      : 0 received
Out-of-order LBRs  : 0 received
Next LTM Trans ID  : 0
Unexpected LTRs    : 0 received
LBMs Transmitted   : 0
AIS PDUs           : 0 received
AIS PDUs Transmitted: 0
LCK PDUs           : 0 received
LCK PDUs Transmitted: 0

Remote
MEPID  MAC Address      Status RDI PortSt  IfSt      LCK Detect Time
-----
2      B8-A3-86-F4-1C-99 OK      No  Up      Up        No  2016-05-10 02:50:01

DGS-3000-24TC:admin#

```

16-17 show cfm fault

Description

This command is used to display all the fault conditions detected by the MEPs contained in the specified MA or MD. This display provides the overview of the fault status by MEPs.

Format

show cfm fault {md [<string 22> | md_index <uint 1-4294967295>] {ma [<string 22> | ma_index <uint 1-4294967295>]}}

Parameters

md - (Optional) Specify the maintenance domain name.
<string 22> - Enter the maintenance domain name used here. This name can be up to 22 characters long.
md_index - (Optional) Specify the maintenance domain index.
<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.
ma - (Optional) Specify the maintenance association name.
<string 22> - Enter the maintenance association name used here. This name can be up to 22 characters long.
ma_index - (Optional) Specify the maintenance association index.
<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

Restrictions

None.

Example

To show the CFM faults:

```
DGS-3000-26TC:admin#show cfm fault
Command: show cfm fault

MD Name      MA Name      MEPID  Status
-----
op_domain    op1          1      Cross-connect CCM Received

DGS-3000-26TC:admin#
```

16-18 show cfm port

Description

This command is used to show MEPs and MIPs created on a port.

Format

show cfm port <port> {level <int 0-7> | direction [inward | outward] | vlanid <vlanid 1-4094>}

Parameters

<port> - Enter the port number used here.
level - (Optional) Specify the MD Level. If not specified, all levels are shown.
<int 0-7> - Enter the MD level value here. This value must be between 0 and 7.
direction - (Optional) Specify the MEP direction.
inward - Specify that the MEP direction will be inward facing.
outward - Specify that the MEP direction will be outward facing.
 If not specified, both directions and the MIP are shown.
vlanid - (Optional) Specify the VLAN identifier. If not specified, all VLANs are shown.
<vlanid 1-4094> - Enter the VLAN ID used here. This value must be between 1 and 4094.

Restrictions

None.

Example

To show the MEPs and MIPs created on a port:

```
DGS-3000-26TC:admin#show cfm port 2
Command: show cfm port 2

MAC Address: 00-01-02-03-04-02
MD Name      MA Name      MEPID  Level  Direction  VID
-----
op_domain    op1          1      2      Inward      1

DGS-3000-26TC:admin#
```

16-19 cfm lock md

Description

This command is used to start/stop cfm management lock. This command will result in the MEP sends a LCK PDU to client level MEP.

Format

cfm lock md [<string 22> | md_index <uint 1-4294967295>] ma [<string 22> | ma_index <uint 1-4294967295>] mepid <int 1-8191> remote_mepid <int 1-8191> action [start | stop]

Parameters

-
- md** - Specify the maintenance domain name.
 <string 22> - Enter the maintenance domain name here. This name can be up to 22 characters long.
 md_index - Specify the MD index value used.
 <uint 1-4294967295> - Enter the MD index value used here. This value must be between 1 and 4294967295.
-
- ma** - Specify the maintenance association name.
 <string 22> - Enter the maintenance association name here. This name can be up to 22 characters long.
 ma_index - Specify the MA index value used.
 <uint 1-4294967295> - Enter the MA index value used here. This value must be between 1 and 4294967295.
-
- mepid** - The MEP ID in the MD which sends LCK frame.
 <int 1-8191> - Enter the MEP ID value here. This value must be between 1 and 8191.
-
- remote_mepid** - The peer MEP is the target of management action.
 <int 1-8191> - Enter the remote MEP ID used here. This value must be between 1 and 8191.
-
- action** - Specify to start or to stop the management lock function.
 start - Specify to start the management lock function.
 stop - Specify to stop the management lock function.
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To start management lock:

```
DGS-3000-26TC:admin# cfm lock md op-domain ma op-ma mepid 1 remote_mepid 2 action start
Command: cfm lock md op-domain ma op-ma mepid 1 remote_mepid 2 action start

Success.

DGS-3000-26TC:admin#
```

16-20 cfm loopback

Description

This command is used to start a CFM loopback test. You can press Ctrl+C to exit the loopback test. The MAC address represents the destination MEP or MIP that can be reached by this MAC address. The MEP represents the source MEP to initiate the loopback message.

Format

```
cfm loopback <macaddr> [mepname <string 32> | mepid <int 1-8191> md [<string 22> | md_index <uint 1-4294967295>] ma [<string 22> | ma_index <uint 1-4294967295>]] {num <int 1-65535> | [length <int 0-1500> | pattern <string 1500>] | pdu_priority <int 0-7>}
```

Parameters

<macaddr>	- Enter the destination MAC address here.
mepname	- Specify the MEP name used.
<string 32>	- Enter the MEP name used here. This name can be up to 32 characters long.
mepid	- Specify the MEP ID used.
<int 1-8191>	- Enter the MEP ID used here. This value must be between 1 and 8191.
md	- Specify the maintenance domain name.
<string 22>	- Enter the maintenance domain name here. This name can be up to 22 characters long.
md_index	- Specify the maintenance domain index.
<uint 1-4294967295>	- Enter the maintenance domain index value here. This value must be between 1 and 4294967295.
ma	- Specify the maintenance association name.
<string 22>	- Enter the maintenance association name here. This name can be up to 22 characters long.
ma_index	- Specify the maintenance association index.
<uint 1-4294967295>	- Enter the maintenance association index value here. This value must be between 1 and 4294967295.
num	- (Optional) Number of LBMs to be sent. The default value is 4.
<int 1-65535>	- Enter the number of LBMs to be sent here. This value must be between 1 and 65535.
length	- (Optional) The payload length of the LBM to be sent. The default is 0.
<int 0-1500>	- Enter the payload length here. This value must be between 0 and 1500.
pattern	- (Optional) An arbitrary amount of data to be included in a Data TLV, along with an indication whether the Data TLV is to be included.
<string 1500>	- Enter the pattern used here. This value can be up to 1500 characters long.
pdu_priority	- (Optional) The 802.1p priority to be set in the transmitted LBMs. If not specified, it uses the same priority as CCMs and LTMs sent by the MA.
<int 0-7>	- Enter the PDU priority value here. This value must be between 0 and 7.

Restrictions

None.

Example

To transmit a LBM:

```
DGS-3000-26TC:admin#cfm loopback 32-00-70-89-31-06 mepname mep1
Command: cfm loopback 32-00-70-89-31-06 mepname mep1

Reply from 32-00-70-89-31-06: bytes=0 time=50ms
Reply from 32-00-70-89-31-06: bytes=0 time=50ms
Reply from 32-00-70-89-31-06: bytes=0 time=50ms
Reply from 32-00-70-89-31-06: bytes=0 time=50ms

CFM loopback statistics for 32-00-70-89-31-06:
    Packets: Sent=4, Received=4, Lost=0(0% loss).

DGS-3000-26TC:admin#
```

16-21 cfm linktrace

Description

This command is used to issue a CFM link track message.

Format

cfm linktrace <macaddr> [mepname <string 32> | mepid <int 1-8191> md [<string 22> | md_index <uint 1-4294967295>] ma [<string 22> | ma_index <uint 1-4294967295>]] {ttl <int 2-255> | pdu_priority <int 0-7>}

Parameters

<macaddr> - Enter the destination MAC address.

mepname - Specify the MEP name used.

<string 32> - Enter the MEP name used here. This name can be up to 32 characters long.

mepid - Specify the MEP ID used.

<int 1-8191> - Enter the MEP ID used here. This value must be between 1 and 8191.

md - Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name here. This name can be up to 22 characters long.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value can be between 1 and 4294967295.

ma - Specify the maintenance association name.

<string 22> - Enter the maintenance association name here. This name can be up to 22 characters long.

ma_index - Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value can be between 1 and 4294967295.

ttl - (Optional) Specify the link trace message TTL value. The default value is 64.

<int 2-255> - Enter the link trace message TTL value here. This value must be between 2 and 255.

pdu_priority - (Optional) The 802.1p priority to be set in the transmitted LTM. If not specified, it uses the same priority as CCMs sent by the MA.

<int 0-7> - Enter the PDU priority value here. This value must be between 0 and 7.

Restrictions

None.

Example

To transmit an LTM:

```
DGS-3000-26TC:admin#cfm linktrace 00-01-02-03-04-05 mepname mep1
Command: cfm linktrace 00-01-02-03-04-05 mepname mep1

Transaction ID: 26
Success.

DGS-3000-26TC:admin#
```

16-22 show cfm linktrace

Description

This command is used to show the link trace responses. The maximum link trace responses a device can hold is 128.

Format

```
show cfm linktrace [mepname <string 32> | mepid <int 1-8191> md [<string 22> | md_index <uint 1-4294967295>] ma [<string 22> | ma_index <uint 1-4294967295>]] {trans_id <uint>}
```

Parameters

mepname - Specify the MEP name used.

<string 32> - Enter the MEP name used here. This name can be up to 32 characters long.

mepid - Specify the MEP ID used.

<int 1-8191> - Enter the MEP ID used here. This value must be between 1 and 8191.

md - Specify the maintenance domain name.

<string 22> - Enter the maintenance domain name her. This name can be up to 22 characters long.

md_index - Specify the maintenance domain index.

<uint 1-4294967295> - Enter the maintenance domain index value here. This value must between 1 and 4294967295.

ma - Specify the maintenance association name.

<string 22> - Enter the maintenance association name her. This name can be up to 22 characters long.

ma_index - Specify the maintenance association index.

<uint 1-4294967295> - Enter the maintenance association index value here. This value must between 1 and 4294967295.

trans_id - (Optional) Specify the identifier of the transaction displayed.

<uint> - Enter the transaction ID used here.

Restrictions

None.

Example

To show the link trace reply when the "all MPs reply LTRs" function is enabled:

```
DGS-3000-26TC:admin#show cfm linktrace mepid 5 md md6 ma ma1 trans_id 30
Command: show cfm linktrace mepid 5 md md6 ma ma1 trans_id 30

Transaction ID: 30
From MEP mep5 to 30-00-26-81-34-A2
Start Time      : 2016-01-31 14:47:36
```

Hop	MEPID	MAC Address	Forwarded	Relay Action
1	-	30-00-26-81-34-19	Yes	FDB
2	-	30-00-26-81-34-B8	No	Hit

```
DGS-3000-26TC:admin#"
```

To show the link trace reply when the "all MPs reply LTRs" function is disabled:

```
DGS-3000-26TC:admin#show cfm linktrace mepname mep1 trans_id 27
Command: show cfm linktrace mepname mep1 trans_id 27

Transaction ID: 27
From MEP mep1 to 32-00-70-89-31-06
Start Time      : 2011-11-22 16:28:56
```

Hop	MEPID	Ingress MAC Address	Egress MAC Address	Forwarded	Relay Action
1	-	00-00-00-00-00-00	32-00-70-89-41-06	Yes	FDB
2	-	00-32-28-40-09-07	00-32-28-40-09-05	Yes	FDB
3	2	00-00-00-00-00-00	32-00-70-89-31-06	No	Hit

```
DGS-3000-26TC:admin#"
```

16-23 delete cfm linktrace

Description

This command is used to delete the stored link trace response data that have been initiated by the specified MEP.

Format

```
delete cfm linktrace [{md [<string 22> | md_index <uint 1-4294967295>] {ma [<string 22> | ma_index <uint 1-4294967295>] {mepid <int 1-8191>}} | mepname <string 32>}]
```

Parameters

-
- md** - (Optional) Specify the maintenance domain name.
 - <string 22>** - Enter the maintenance domain name her. This name can be up to 22 characters long.
 - md_index** - Specify the maintenance domain index.
 - <uint 1-4294967295>** - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.
 - ma** - (Optional) Specify the maintenance association name.
 - <string 22>** - Enter the maintenance association name her. This name can be up to 22 characters long.
 - ma_index** - Specify the maintenance association index.
 - <uint 1-4294967295>** - Enter the maintenance association index value here. This value must be between 1 and 4294967295.
 - mepid** - (Optional) Specify the MEP ID used.
 - <int 1-8191>** - Enter the MEP ID used here. This value must be between 1 and 8191.
 - mepname** - (Optional) Specify the MEP name used.
-

<string 32> - Enter the MEP name used here. This name can be up to 32 characters long.

Restrictions

None.

Example

To delete the CFM link trace reply:

```
DGS-3000-26TC:admin#delete cfm linktrace mepname mep1
Command: delete cfm linktrace mepname mep1

Success.

DGS-3000-26TC:admin#
```

16-24 show cfm mipccm

Description

This command is used to show the MIP CCM database entries. All entries in the MIP CCM database will be shown. A MIP CCM entry is similar to a FDB which keeps the forwarding port information of a MAC entry.

Format

show cfm mipccm

Parameters

None.

Restrictions

None.

Example

To show MIP CCM database entries:

```
DGS-3000-26TC:admin#show cfm mipccm
Command: show cfm mipccm

MA          VID  MAC Address          Port
-----
opma        1    00-11-22-33-44-55   2
opma        1    01-23-45-67-89-10   3

Total: 2

DGS-3000-26TC:admin#
```


16-25 config cfm mp_ltr_all

Description

This command is used to enable or disable the "all MPs reply LTRs" function.

Format

config cfm mp_ltr_all [enable | disable]

Parameters

enable - Specify that the MP's reply to the LTR function will be set to all.

disable - Disables sending the all MPs replay LTRs function.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the "all MPs reply LTRs" function:

```
DGS-3000-26TC:admin#config cfm mp_ltr_all enable
Command: config cfm mp_ltr_all enable

Success.

DGS-3000-26TC:admin#
```

16-26 show cfm mp_ltr_all

Description

This command is used to show the current configuration of the "all MPs reply LTRs" function.

Format

show cfm mp_ltr_all

Parameters

None.

Restrictions

None.

Example

To show the configuration of the "all MPs reply LTRs" function:

```
DGS-3000-26TC:admin#show cfm mp_ltr_all
Command: show cfm mp_ltr_all

All MPs reply LTRs: Disabled

DGS-3000-26TC:admin#
```

16-27 show cfm remote_mep

Description

This command is used to show remote MEPs.

Format

```
show cfm remote_mep [mepname <string 32> | md [<string 22> | md_index <uint 1-4294967295>] ma
[<string 22> | ma_index <uint 1-4294967295>] mepid <int 1-8191>] remote_mepid <int 1-8191>
```

Parameters

mepname - Specify the MEP name used.
<string 32> - Enter the MEP name used here. This name can be up to 32 characters long.

md - Specify the maintenance domain name.
<string 22> - Enter the maintenance domain name here. This name can be up to 22 characters long.
md_index - Specify the maintenance domain index.
<uint 1-4294967295> - Enter the maintenance domain index value here. This value must be between 1 and 4294967295.

ma - Specify the maintenance association name.
<string 22> - Enter the maintenance association name here. This name can be up to 22 characters long.
ma_index - Specify the maintenance association index.
<uint 1-4294967295> - Enter the maintenance association index value here. This value must be between 1 and 4294967295.

mepid - Specify the MEP ID used.
<int 1-8191> - Enter the MEP ID used here. This value must be between 1 and 8191.

remote_mepid - Specify the Remote MEP ID used.
<int 1-8191> - Enter the remote MEP ID used here. This value must be between 1 and 8191.

Restrictions

None.

Example

To show the CFM Remote MEP information:

```
DGS-3000-26TC:admin#show cfm remote_mep mepname mep1 remote_mepid 2
Command: show cfm remote_mep mepname mep1 remote_mepid 2

Remote MEPID           : 2
MAC Address            : 00-11-22-33-44-02
Status                 : OK
RDI                    : Yes
Port State             : Blocked
Port Status Defect     : Blocked
Interface Status       : Down
Interface Status Defect : No
Last CCM Serial Number : 1000
Sender Chassis ID      : 00-11-22-33-44-00
Sender Management Address: SNMP-UDP-IPv4 10.90.90.90:161
Detect Time            : 2008-01-01 12:00:00

DGS-3000-26TC:admin#
```

16-28 show cfm pkt_cnt

Description

This command is used to show the CFM packet's RX/TX counters.

Format

show cfm pkt_cnt {[ports <portlist> {[rx | tx]} | [rx | tx] | ccm]}

Parameters

ports - (Optional) Specify the port counters to show. If not specified, all ports will be shown.

<portlist> - Enter the list of ports used for this configuration here.

rx - (Optional) Specify to display the RX counter.

tx - (Optional) Specify to display the TX counter. If not specified, both of them will be shown.

rx - (Optional) Specify to display the RX counter.

tx - (Optional) Specify to display the TX counter. If not specified, both of them will be shown.

ccm - (Optional) Specify the CCM RX counters.

Restrictions

None.

Example

To show the CFM packet's RX/TX counters:

```
DGS-3000-26TC:admin#show cfm pkt_cnt
Command: show cfm pkt_cnt

CFM RX Statistics
-----
Port  AllPkt  CCM    LBR    LBM    LTR    LTM    VidDrop  OpcoDrop
-----
all   0        0      0      0      0      0      0        0
1     0        0      0      0      0      0      0        0
2     0        0      0      0      0      0      0        0
3     0        0      0      0      0      0      0        0
```

4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0

CFM TX Statistics

```
-----
```

Port	AllPkt	CCM	LBR	LBM	LTR	LTM
all	0	0	0	0	0	0
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
11	0	0	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	0	0	0	0	0	0

DGS-3000-26TC:admin#show cfm pkt_cnt ccm

```
Command: show cfm pkt_cnt ccm
```

```
CCM RX counters:
```

```
XCON    = Cross-connect CCMs
```

```
Error   = Error CCMs
```

```
Normal  = Normal CCMs
```

MEP Name	VID	Port	Level	Direction	XCON	Error	Normal

```
DGS-3000-26TC:admin#
```

16-29 clear cfm pkt_cnt

Description

This command is used to clear the CFM packet's RX/TX counters.

Format

```
clear cfm pkt_cnt {[ports <portlist> {[rx | tx]} | [rx | tx] | ccm]}
```

Parameters

ports - (Optional) The ports which require need the counters clearing. If not specified, all ports will be cleared.

<portlist> - Enter the list of ports used for this configuration here.

rx - (Optional) Specify to clear the RX counter.

tx - (Optional) Specify to clear the TX counter. If not specified, both of them will be cleared.

rx - (Optional) Specify to clear the RX counter.

tx - (Optional) Specify to clear the TX counter. If not specified, both of them will be cleared.

ccm - (Optional) Specify the CCM RX counters.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear the CFM packet's RX/TX counters:

```
DGS-3000-26TC:admin#clear cfm pkt_cnt
```

```
Command: clear cfm pkt_cnt
```

```
Success.
```

```
DGS-3000-26TC:admin#clear cfm pkt_cnt ccm
```

```
Command: clear cfm pkt_cnt ccm
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

Chapter 17 CPU Interface Filtering Command List

<pre>create cpu access_profile profile_id <value 1-5> [ethernet {vlan source_mac <macmask 000000000000- ffffffff> destination_mac <macmask 000000000000-ffffffff> 802.1p ethernet_type} ip {vlan source_ip_mask <netmask> destination_ip_mask <netmask> dscp [icmp {type code} igmp {type} tcp {src_port_mask <hex 0x0-0xffff> dst_port_mask <hex 0x0-0xffff> flag_mask [all {urg ack psh rst syn fin}]} udp {src_port_mask <hex 0x0-0xffff> dst_port_mask <hex 0x0-0xffff> protocol_id_mask <hex 0x0- 0xff> {user_define_mask <hex 0x0-0xffff>}}] packet_content_mask {offset_0-15 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> offset_16-31 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> offset_32-47 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> offset_48-63 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0- 0xffff> offset_64-79 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff>} ipv6 {class flowlabel source_ipv6_mask <ipv6mask> destination_ipv6_mask <ipv6mask>}]</pre>
<pre>delete cpu access_profile [profile_id <value 1-5> all]</pre>
<pre>config cpu access_profile profile_id <value 1-5> [add access_id [auto_assign <value 1-100>] [ethernet {[vlan <vlan_name 32> vlan_id <vlanid 1-4094>] source_mac <macaddr> destination_mac <macaddr> 802.1p <value 0-7> ethernet_type <hex 0x0-0xffff>} ip {[vlan <vlan_name 32> vlan_id <vlanid 1-4094>] source_ip <ipaddr> destination_ip <ipaddr> dscp <value 0-63> [icmp {type <value 0-255> code <value 0-255>} igmp {type <value 0-255>} tcp {src_port <value 0-65535> dst_port <value 0-65535> flag [all {urg ack psh rst syn fin}]} udp {src_port <value 0-65535> dst_port <value 0-65535> protocol_id <value 0-255> {user_define <hex 0x0-0xffff>}}] packet_content {offset_0-15 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> offset_16-31 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> offset_32-47 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> offset_48-63 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> offset_64-79 <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff>} ipv6 {class <value 0-255> flowlabel <hex 0x0-0xffff> source_ipv6 <ipv6addr> destination_ipv6 <ipv6addr>}] port [<portlist> all] [permit deny] {time_range <range_name 32>} delete access_id <value 1-100>]</pre>
<pre>enable cpu_interface_filtering</pre>
<pre>disable cpu_interface_filtering</pre>
<pre>show cpu access_profile {profile_id <value 1-5>}</pre>

17-1 create cpu access_profile

Description

This command is used to create CPU access list profiles.

Format

```
create cpu access_profile profile_id <value 1-5> [ethernet {vlan | source_mac <macmask 000000000000-
ffffffff> | destination_mac <macmask 000000000000-ffffffff> | 802.1p | ethernet_type} | ip {vlan |
source_ip_mask <netmask> | destination_ip_mask <netmask> | dscp | [icmp {type | code} | igmp {type} |
tcp {src_port_mask <hex 0x0-0xffff> | dst_port_mask <hex 0x0-0xffff> | flag_mask [all | {urg | ack | psh | rst
| syn | fin}]} | udp {src_port_mask <hex 0x0-0xffff> | dst_port_mask <hex 0x0-0xffff>} | protocol_id_mask
<hex 0x0-0xff> {user_define_mask <hex 0x0-0xffff>}}] | packet_content_mask {offset_0-15 <hex 0x0-
0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> | offset_16-31 <hex 0x0-0xffff> <hex
0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> |offset_32-47 <hex 0x0-0xffff> <hex
0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> |offset_48-63 <hex 0x0-0xffff> <hex
0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> |offset_64-79 <hex 0x0-0xffff> <hex
0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff> <hex 0x0-0xffff>} | ipv6 {class | flowlabel | source_ipv6_mask
<ipv6mask> | destination_ipv6_mask <ipv6mask>}]
```

Parameters

profile_id - Specify the profile ID used here.

<value 1-5> - Enter the profile ID value here. This value must be between 1 and 5.

-
- ethernet** - Specify that the profile type will be Ethernet.
- vlan** - (Optional) Specify a VLAN mask.
 - source_mac** - (Optional) Specify the source MAC mask.
 - <macmask>** - Enter the source MAC mask here.
 - destination_mac** - (Optional) Specify the destination mac mask.
 - <macmask>** - Enter the destination MAC mask here.
 - 802.1p** - (Optional) Specify 802.1p priority tag mask.
 - ethernet_type** - (Optional) Specify the ethernet type mask.
-
- ip** - Specify that the profile type will be IP.
- vlan** - (Optional) Specify a VLAN mask.
 - source_ip_mask** - (Optional) Specify an IP source submask.
 - <netmask>** - Enter the IP source submask here.
 - destination_ip_mask** - (Optional) Specify an IP destination submask.
 - <netmask>** - Enter the IP destination submask here.
 - dscp** - (Optional) Specify the DSCP mask.
 - icmp** - (Optional) Specify that the rule applies to ICMP traffic.
 - type** - (Optional) Specify that the rule applies to ICMP type traffic.
 - code** - (Optional) Specify that the rule applies to ICMP code traffic.
 - igmp** - (Optional) Specify that the rule applies to IGMP traffic.
 - type** - (Optional) Specify that the rule applies to IGMP type traffic.
 - tcp** - Specify that the rule applies to TCP traffic.
 - src_port_mask** - (Optional) Specify the TCP source port mask.
 - <hex 0x0-0xffff>** - Enter the source TCP port mask here.
 - dst_port_mask** - (Optional) Specify the TCP destination port mask.
 - <hex 0x0-0xffff>** - Enter the destination TCP port mask here.
 - flag_mask** - (Optional) Specify the TCP flag field mask.
 - all** - Specify that the TCP flag field mask will be set to all.
 - urg** - (Optional) Specify that the TCP flag field mask will be set to urg.
 - ack** - (Optional) Specify that the TCP flag field mask will be set to ack.
 - psh** - (Optional) Specify that the TCP flag field mask will be set to psh.
 - rst** - (Optional) Specify that the TCP flag field mask will be set to rst.
 - syn** - (Optional) Specify that the TCP flag field mask will be set to syn.
 - fin** - (Optional) Specify that the TCP flag field mask will be set to fin.
 - udp** - (Optional) Specify that the rule applies to UDP traffic.
 - src_port_mask** - (Optional) Specify the UDP source port mask.
 - <hex 0x0-0xffff>** - Enter the source UDP port mask here.
 - dst_port_mask** - (Optional) Specify the UDP destination port mask.
 - <hex 0x0-0xffff>** - Enter the destination UDP port mask here.
 - protocol_id_mask** - (Optional) Specify that the rule applies to the IP protocol ID traffic.
 - <hex 0x0-0xff>** - Enter the IP protocol ID mask here.
 - user_define_mask** - (Optional) Specify that the rule applies to the IP protocol ID and the mask options behind the first 4 bytes of the IP payload.
 - <hex 0x0-0xffffffff>** - Enter the user-defined IP protocol ID mask here.
-
- packet_content_mask** - Specify the frame content mask, there are 5 offsets in maximum could be configured. Each offset presents 16 bytes, the range of mask of frame is 80 bytes (5 offsets) in the first eighty bytes of frame.
- offset_0-15** - (Optional) Specify that the mask pattern offset of the frame will be between 0 and 15.
 - <hex 0x0-0xffffffff>** - Enter the mask pattern offset of the frame between 0 and 15 here.
 - offset_16-31** - (Optional) Specify that the mask pattern offset of the frame will be between 16 and 31.
 - <hex 0x0-0xffffffff>** - Enter the mask pattern offset of the frame between 16 and 31 here.
 - offset_32-47** - (Optional) Specify that the mask pattern offset of the frame will be between 32 and 47.
 - <hex 0x0-0xffffffff>** - Enter the mask pattern offset of the frame between 32 and 47 here.
 - offset_48-63** - (Optional) Specify that the mask pattern offset of the frame will be between 48 and 63.
 - <hex 0x0-0xffffffff>** - Enter the mask pattern offset of the frame between 48 and 63 here.
 - offset_64-79** - (Optional) Specify that the mask pattern offset of the frame will be between 64 and 79.
 - <hex 0x0-0xffffffff>** - Enter the mask pattern offset of the frame between 64 and 79 here.
-
- ipv6** - Specify IPv6 filtering mask.
- class** - (Optional) Specify the IPv6 class.
 - flowlabel** - (Optional) Specify the IPv6 flowlabel.
 - source_ipv6_mask** - (Optional) Specify an IPv6 source submask.
 - <ipv6mask>** - Enter the IPv6 source submask here.
 - destination_ipv6_mask** - (Optional) Specify an IPv6 destination submask.
 - <ipv6mask>** - Enter the IPv6 destination submask here.
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create CPU access list rules:

```
DGS-3000-26TC:admin#create cpu access_profile profile_id 1 ethernet vlan source_mac 00-00-00-00-00-01 destination_mac 00-00-00-00-00-02 802.1p ethernet_type
Command: create cpu access_profile profile_id 1 ethernet vlan source_mac 00-00-00-00-00-01 destination_mac 00-00-00-00-00-02 802.1p ethernet_type

Success.

DGS-3000-26TC:admin#create cpu access_profile profile_id 2 ip vlan source_ip_mask 20.0.0.0 destination_ip_mask 10.0.0.0 dscp icmp type code
Command: create cpu access_profile profile_id 2 ip vlan source_ip_mask 20.0.0.0 destination_ip_mask 10.0.0.0 dscp icmp type code

Success.

DGS-3000-26TC:admin#
```

17-2 delete cpu access_profile

Description

This command is used to delete CPU access list rules.

Format

delete cpu access_profile [profile_id <value 1-5> | all]

Parameters

profile_id - Specify the index of access list profile.

<value 1-5> - Enter the profile ID value here. This value must be between 1 and 5.

all - Specify that all the access list profiles will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete CPU access list rules:

```
DGS-3000-26TC:admin#delete cpu access_profile profile_id 1
Command: delete cpu access_profile profile_id 1

Success.

DGS-3000-26TC:admin#
```


17-3 config cpu access_profile

Description

This command is used to configure CPU access list entry.

Format

```
config cpu access_profile profile_id <value 1-5> [add access_id [auto_assign | <value 1-100>] [ethernet
{[vlan <vlan_name 32> | vlan_id <vlanid 1-4094>] | source_mac <macaddr> | destination_mac <macaddr> |
802.1p <value 0-7> | ethernet_type <hex 0x0-0xffff>} | ip {[vlan <vlan_name 32> | vlan_id <vlanid 1-4094>] |
source_ip <ipaddr> | destination_ip <ipaddr> | dscp <value 0-63>} | [icmp {type <value 0-255> | code <value
0-255>} | igmp {type <value 0-255>} | tcp {src_port <value 0-65535> | dst_port <value 0-65535> | flag [all |
{urg | ack | psh | rst | syn | fin}]} | udp {src_port <value 0-65535> | dst_port <value 0-65535>} | protocol_id
<value 0-255> {user_define <hex 0x0-0xffffffff>}}] | packet_content {offset_0-15 <hex 0x0-0xffffffff> <hex
0x0-0xffffffff> <hex 0x0-0xffffffff> <hex 0x0-0xffffffff> | offset_16-31 <hex 0x0-0xffffffff> <hex 0x0-0xffffffff>
<hex 0x0-0xffffffff> <hex 0x0-0xffffffff> | offset_32-47 <hex 0x0-0xffffffff> <hex 0x0-0xffffffff> <hex 0x0-
0xffffffff> <hex 0x0-0xffffffff> | offset_48-63 <hex 0x0-0xffffffff> <hex 0x0-0xffffffff> <hex 0x0-0xffffffff> <hex 0x0-
0xffffffff> | offset_64-79 <hex 0x0-0xffffffff> <hex 0x0-0xffffffff> <hex 0x0-0xffffffff> <hex 0x0-0xffffffff> <hex 0x0-0xffffffff>} |
ipv6 {class <value 0-255> | flowlabel <hex 0x0-0xffff> | source_ipv6 <ipv6addr> | destination_ipv6
<ipv6addr>}] port [<portlist> | all] [permit | deny] {time_range <range_name 32>} | delete access_id <value
1-100>]
```

Parameters

profile_id	- Specify the index of access list profile. <value 1-5> - Enter the profile ID value here. This value must be between 1 and 5.
add	- Specify that a profile or a rule will be added.
access_id	- Specify the index of access list entry. The range of this value is 1-100. <value 1-100> - Enter the access ID here. This value must be between 1 and 100.
ethernet	- Specify that the profile type will be Ethernet.
vlan	- (Optional) Specify the VLAN name used. <vlan_name 32> - Enter the name of the VLAN here. This name can be up to 32 characters long.
vlan_id	- (Optional) Specify the VLAN ID used. <vlanid 1-4094> - Enter the VLAN ID used here.
source_mac	- (Optional) Specify the source MAC address. <macaddr> - Enter the source MAC address used for this configuration here.
destination_mac	- (Optional) Specify the destination MAC. <macaddr> - Enter the destination MAC address used for this configuration here.
802.1p	- (Optional) Specify the value of 802.1p priority tag. <value 0-7> - Enter the 802.1p priority tag value here. This value must be between 0 and 7.
ethernet_type	- (Optional) Specify the Ethernet type. <hex 0x0-0xffff> - Enter the Ethernet type value here.
ip	- Specify that the profile type will be IP.
vlan	- (Optional) Specify the VLAN name used. <vlan_name 32> - Enter the name of the VLAN here. This name can be up to 32 characters long.
vlan_id	- (Optional) Specify the VLAN ID used. <vlanid 1-4094> - Enter the VLAN ID used here.
source_ip	- (Optional) Specify an IP source address. <ipaddr> - Enter the source IP address used for this configuration here.
destination_ip	- (Optional) Specify an IP destination address. <ipaddr> - Enter the destination IP address used for this configuration here.
dscp	- (Optional) Specify the value of DSCP, the value can be configured 0 to 63. <value 0-63> - Enter the DSCP value used here.
icmp	- (Optional) Specify that the rule applies to ICMP traffic.
type	- (Optional) Specify that the rule applies to the value of ICMP type traffic. <value 0-255> - Enter the ICMP type value here. This value must be between 0 and 255.
code	- (Optional) Specify that the rule applies to the value of ICMP code traffic. <value 0-255> - Enter the ICMP code value here. This value must be between 0 and 255.
igmp	- (Optional) Specify that the rule applies to IGMP traffic.
type	- (Optional) Specify that the rule applies to the value of IGMP type traffic. <value 0-255> - Enter the IGMP type value here. This value must be between 0 and 255.
tcp	- (Optional) Specify that the rule applies to TCP traffic.
src_port	- (Optional) Specify that the rule applies the range of TCP source port.

<value 0-65535> - Enter the source port value here. This value must be between 0 and 65535.

dst_port - (Optional) Specify the range of TCP destination port range.

<value 0-65535> - Enter the destination port value here. This value must be between 0 and 65535.

flag - (Optional) Specify the TCP flag fields .

all - Specify that the TCP flag field mask will be set to all.

urg - (Optional) Specify that the TCP flag field mask will be set to urg.

ack - (Optional) Specify that the TCP flag field mask will be set to ack.

psh - (Optional) Specify that the TCP flag field mask will be set to psh.

rst - (Optional) Specify that the TCP flag field mask will be set to rst.

syn - (Optional) Specify that the TCP flag field mask will be set to syn.

fin - (Optional) Specify that the TCP flag field mask will be set to fin.

udp - Specify that the rule applies to UDP traffic.

src_port - (Optional) Specify the range of UDP source port range.

<value 0-65535> - Enter the source port value here. This value must be between 0 and 65535.

dst_port - (Optional) Specify the range of UDP destination port mask.

<value 0-65535> - Enter the destination port value here. This value must be between 0 and 65535.

protocol_id - Specify that the rule applies to the value of IP protocol ID traffic.

<value 0-255> - Enter the protocol ID value here. This value must be between 0 and 255.

user_define - (Optional) Specify that the rule applies to the IP protocol ID and the mask options behind the first 4 bytes of the IP payload.

<hex 0x0-0xffffffff> - Enter the user-defined IP protocol ID mask here.

packet_content - Specify the frame content pattern, there are 5 offsets in maximum could be configure. Each offset presents 16 bytes, the range of content of frame is 80 bytes(5 offsets) in the first eighty bytes of frame.

offset_0-15 - (Optional) Specify that the mask pattern offset of the frame will be between 0 and 15.

<hex 0x0-0xffffffff> - Enter the mask pattern offset of the frame between 0 and 15 here.

offset_16-31 - (Optional) Specify that the mask pattern offset of the frame will be between 16 and 31.

<hex 0x0-0xffffffff> - Enter the mask pattern offset of the frame between 16 and 31 here.

offset_32-47 - (Optional) Specify that the mask pattern offset of the frame will be between 32 and 47.

<hex 0x0-0xffffffff> - Enter the mask pattern offset of the frame between 32 and 47 here.

offset_48-63 - (Optional) Specify that the mask pattern offset of the frame will be between 48 and 63.

<hex 0x0-0xffffffff> - Enter the mask pattern offset of the frame between 48 and 63 here.

offset_64-79 - (Optional) Specify that the mask pattern offset of the frame will be between 64 and 79.

<hex 0x0-0xffffffff> - Enter the mask pattern offset of the frame between 64 and 79 here.

ipv6 - Specify the rule applies to IPv6 fields.

class - (Optional) Specify the value of IPv6 class.

<value 0-255> - Enter the IPv6 class value here. This value must be between 0 and 255.

flowlabel - (Optional) Specify the value of IPv6 flowlabel.

<hex 0x0-0xffff> - Enter the IPv6 flowlabel here.

source_ipv6 - (Optional) Specify the value of IPv6 source address.

<ipv6addr> - Enter the IPv6 source address used for this configuration here.

destination_ipv6 - (Optional) Specify the value of IPv6 destination address.

<ipv6addr> - Enter the IPv6 destination address used for this configuration here.

port - Specify the list of ports to be included in this configuration.

<portlist> - Enter a list of ports used for the configuration here.

all - Specify that all the ports will be used for this configuration.

permit - Specify the packets that match the access profile are permit by the Switch.

deny - Specify the packets that match the access profile are filtered by the Switch.

time_range - (Optional) Specify name of this time range entry.

<range_name 32> - Enter the time range here.

delete - Specify to delete a rule from the profile ID entered.

access_id - Specify the index of access list entry. The range of this value is 1-100.

<value 1-100> - Enter the access ID here. This value must be between 1 and 100.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure CPU access list entry:

```
DGS-3000-26TC:admin#config cpu access_profile profile_id 1 add access_id 1 ip vlan default
source_ip 20.2.2.3 destination_ip 10.1.1.252 dscp 3 icmp type 11 code 32 port 1 deny
Command: config cpu access_profile profile_id 1 add access_id 1 ip vlan default source_ip
20.2.2.3 destination_ip 10.1.1.252 dscp 3 icmp type 11 code 32 port 1 deny

Success.

DGS-3000-26TC:admin#
```

17-4 enable cpu interface filtering

Description

This command is used to enable CPU interface filtering control.

Format

enable cpu_interface_filtering

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable CPU interface filtering:

```
DGS-3000-26TC:admin#enable cpu_interface_filtering
Command: enable cpu_interface_filtering

Success.

DGS-3000-26TC:admin#
```

17-5 disable cpu interface filtering

Description

This command is used to disable CPU interface filtering control.

Format

disable cpu_interface_filtering

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable CPU interface filtering:

```
DGS-3000-26TC:admin#disable cpu_interface_filtering
Command: disable cpu_interface_filtering

Success.

DGS-3000-26TC:admin#
```

17-6 show CPU access_profile

Description

This command is used to display current access list table.

Format

show cpu access_profile {profile_id <value 1-5>}

Parameters

profile_id - (Optional) Specify the index of access list profile.
<value 1-5> - Enter the profile ID used here. This value must be between 1 and 5.

Restrictions

None.

Example

To display current CPU access list table:

```
DGS-3000-26TC:admin#show cpu access_profile
Command: show cpu access_profile

CPU Interface Filtering State: Disabled

CPU Interface Access Profile Table

Total Unused Rule Entries : 500
Total Used Rule Entries   : 0

=====
Profile ID: 1      Type: Ethernet

MASK on
  VLAN           : 0xFFF
  Source MAC     : 00-00-00-00-00-01
  Destination MAC : 00-00-00-00-00-02
  802.1p
  Ethernet Type

Unused Rule Entries: 100
=====

=====
Profile ID: 2      Type: IPv4

MASK on
  VLAN           : 0xFFF
  Source IP      : 20.0.0.0
  Dest IP       : 10.0.0.0
  DSCP
  ICMP
  Type
  Code

Unused Rule Entries: 100
=====

DGS-3000-26TC:admin#
```

Chapter 18 Debug Software Command List

```

debug error_log [dump | clear | upload_toTFTP {<ipaddr> <path_filename 64>}]
debug buffer [utilization | dump | clear | upload_toTFTP <ipaddr> <path_filename 64>]
debug output [module <module_list> | all] [buffer | console]
debug config error_reboot [enable | disable]
debug config state [enable | disable]
debug show error_reboot state
debug show status {module <module_list>}
debug dhcpv6_relay hop_count state [enable | disable]
debug dhcpv6_relay output [buffer | console]
debug dhcpv6_relay packet [all | receiving | sending] state [enable | disable]
debug dhcpv6_relay state disable
debug dhcpv6_relay state enable
debug dhcpv6_server packet [all | receiving | sending] state [enable | disable]
debug dhcpv6_server state disable
debug dhcpv6_server state enable

```

18-1 debug error_log

Description

This command is used to dump, clear or upload the software error log to a TFTP server.

Format

```
debug error_log [dump | clear | upload_toTFTP {<ipaddr> <path_filename 64>}]
```

Parameters

dump - Displays the debug message of the debug log.

clear - Clears the debug log.

upload_toTFTP - Specify to upload the debug log to a TFTP server specified by IP address.

<ipaddr> - (Optional) Enter the IPv4 address of the TFTP server.

<path_filename 64> - (Optional) Enter the DOS pathname on the TFTP server. It can be a relative pathname or an absolute pathname. This value can be up to 64 characters long.

Restrictions

Only Administrators can issue this command.

Example

To dump the error log:

```

DGS-3000-26TC:admin#debug error_log dump
Command: debug error_log dump

*****
# debug log: 1
# level: fatal
# clock: 10000ms
# time : 2009/03/11 13:00:00

===== SOFTWARE FATAL ERROR =====
Invalid mutex handle : 806D6480

Current TASK : bcmARL.0

----- TASK STACKTRACE -----
->802ACE98
->8018C814
->8028FF44
->8028352C
->801D703C
->8013B8A4
->802AE754
->802A5E0C

```

To clear the error log:

```

DGS-3000-26TC:admin#debug error_log clear
Command: debug error_log clear

Success.

DGS-3000-26TC:admin#

```

To upload the error log to TFTP server:

```

DGS-3000-26TC:admin#debug error_log upload_toTFTP 10.0.0.90 debug-log.txt
Command: debug error_log upload_toTFTP 10.0.0.90 debug-log.txt

Connecting to server.....Done.
Upload error log .....Done.

DGS-3000-26TC:admin#

```

18-2 debug buffer

Description

This command is used to show the debug buffer's state, or dump, clear, or upload the debug buffer to a TFTP server.

Format

```
debug buffer [utilization | dump | clear | upload_toTFTP <ipaddr> <path_filename 64>]
```

Parameters

utilization - Displays the debug buffer's state.

dump - Displays the debug message in the debug buffer.

clear - Clears the debug buffer.

upload_toTFTP - Specify to upload the debug buffer to a TFTP server specified by IP address.

<ipaddr> - Enter the IPv4 address of the TFTP server.

<path_filename 64> - Enter the DOS pathname on the TFTP server. It can be a relative pathname or an absolute pathname. This value can be up to 64 characters long.

Restrictions

Only Administrator users can issue this command.

Example

To show the debug buffer's state:

```
DGS-3000-26TC:admin#debug buffer utilization
Command: debug buffer utilization

Allocate from      :      System memory pool
Total size        :      2 MB
Utilization rate   :      30%

DGS-3000-26TC:admin#
```

To clear the debug buffer:

```
DGS-3000-26TC:admin#debug buffer clear
Command: debug buffer clear

Success.

DGS-3000-26TC:admin#
```

To upload the messages stored in debug buffer to TFTP server:

```
DGS-3000-26TC:admin#debug buffer upload_toTFTP 10.0.0.90 debugcontent.txt
Command: debug buffer upload_toTFTP 10.0.0.90 debugcontent.txt

Connecting to server..... Done.
Upload debug file ..... Done.

DGS-3000-26TC:admin#
```

18-3 debug output

Description

This command is used to set a specified module's debug message output to debug buffer or local console. If the user uses the command in a Telnet session, the error message also is output to the local console.

Format

debug output [module <module_list> | all] [buffer | console]

Parameters

module - Specify the module list.

<module_list> - Enter the module list here.

all - Controls output method of all modules.

buffer - Directs the debug message of the module output to debug buffer. This is the default.

console - Directs the debug message of the module output to local console.

Restrictions

Only Administrators can issue this command.

Example

To set all module debug message outputs to local console:

```
DGS-3000-26TC:admin#debug output all console
Command: debug output all console

Success.

DGS-3000-26TC:admin#
```

18-4 debug config error_reboot

Description

This command is used to set if the Switch needs to be rebooted when a fatal error occurs. When the error occurs, the watchdog timer will be disabled by the system first, and then all debug information will be saved in NVRAM. If the error_reboot is enabled, the watchdog shall be enabled after all information is stored into NVRAM.

Format

debug config error_reboot [enable | disable]

Parameters

enable - If enabled, the Switch will reboot when a fatal error happens.

disable - If disabled the Switch will not reboot when a fatal error happens, system will hang-up for debug and enter the debug shell mode for debug.

Restrictions

Only Administrators can issue this command.

Example

To set the Switch to not need a reboot when a fatal error occurs:

```
DGS-3000-26TC:admin#debug config error_reboot disable
Command: debug config error_reboot disable

Success.

DGS-3000-26TC:admin#
```

18-5 debug config state

Description

This command is used to set the state of the debug.

Format

debug config state [enable | disable]

Parameters

enable - Enables the debug state.

disable - Disables the debug state.

Restrictions

Only Administrators can issue this command.

Example

To set the debug state to disabled:

```
DGS-3000-26TC:admin#debug config state disable
Command: debug config state disable

Success.

DGS-3000-26TC:admin#
```

18-6 debug show error_reboot state

Description

This command is used to display debug error reboot state.

Format

debug show error_reboot state

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To show the debug error reboot state:

```
DGS-3000-26TC:admin#debug show error_reboot state
Command: debug show error_reboot state

Error Reboot: Enabled

DGS-3000-26TC:admin#
```

18-7 debug show status

Description

This command is used to display the specified module's debug status.

Format

debug show status {module <module_list>}

Parameters

module - (Optional) Specify the module to be displayed.
<module_list> - Enter the module to be displayed.

Restrictions

Only Administrators can issue this command.

Example

To show the specified module's debug state:

```
DGS-3000-26TC:admin#debug show status module MSTP
Command: debug show status module MSTP

Debug Global State : Enabled

MSTP                : Disabled

DGS-3000-26TC:admin#
```

To show the debug state:

```
DGS-3000-26TC:admin#debug show status
Command: debug show status

Debug Global State : Enabled

MSTP                : Disabled
IMPB                 : Disabled
DHCPv6_RELAY        : Disabled
DHCPv6_SERVER        : Disabled

DGS-3000-26TC:admin#
```

18-8 debug dhcpv6_relay hop_count state

Description

This command is used to enable or disable debug information flag about the hop count.

Format

debug dhcpv6_relay hop_count state [enable | disable]

Parameters

enable - Specify that the hop count state will be enabled.

disable - Specify that the hop count state will be disabled.

Restrictions

Only Administrators can issue this command.

Example

To enable debug information flag about the hop count:

```
DGS-3000-26TC:admin# debug dhcpv6_relay hop_count state enable
Command: debug dhcpv6_relay hop_count state enable

Success.

DGS-3000-26TC:admin#
```

18-9 debug dhcpv6_relay output

Description

This command is used to set debug message to output to buffer or console.

Format

debug dhcpv6_relay output [buffer | console]

Parameters

buffer - Let the debug message output to buffer.

console - Let the debug message output to console.

Restrictions

Only Administrators can issue this command.

Example

To set debug information to output to console:

```
DGS-3000-26TC:admin# debug dhcpv6_relay output console
Command: debug dhcpv6_relay output console

Success.

DGS-3000-26TC:admin#
```

18-10 debug dhcpv6_relay packet

Description

This command is used to enable or disable debug information flag for DHCPv6 relay packet, including packet receiving and sending.

Format

debug dhcpv6_relay packet [all | receiving | sending] state [enable | disable]

Parameters

all - Set packet receiving and sending debug flags.

receiving - Set packet receiving debug flag.

sending - Set packet sending debug flag.

state - Specify if the designated flags function will be enabled or disabled.

enable - Enable the designated flags.

disable - Disable the designated flags.

Restrictions

Only Administrators can issue this command.

Example

To enabled DHCPv6 relay packet sending debug:

```
DGS-3000-26TC:admin# debug dhcpv6_relay packet sending state enable
Command: debug dhcpv6_relay packet sending state enable

Success.

DGS-3000-26TC:admin#
```

18-11 debug dhcpv6_relay state disable

Description

This command is used to disable the DHCPv6 relay Debug function.

Format

debug dhcpv6_relay state disable

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disabled DHCPv6 relay debug function:

```
DGS-3000-26TC:admin# debug dhcpv6_relay state disable
Command: debug dhcpv6_relay state disable

Success.

DGS-3000-26TC:admin#
```

18-12 debug dhcpv6_relay state enable

Description

This command is used to enable the DHCPv6 relay Debug function.

Format

debug dhcpv6_relay state enable

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enabled DHCPv6 relay debug function:

```
DGS-3000-26TC:admin# debug dhcpv6_relay state enable
Command: debug dhcpv6_relay state enable

Success.

DGS-3000-26TC:admin#
```

18-13 debug dhcpv6_server packet

Description

This command is used to enable or disable the debug information flag of the DHCPv6 server packet, including packets receiving and sending.

Format

debug dhcpv6_server packet [all | receiving | sending] state [enable | disable]

Parameters

all - Set packet receiving and sending debug flags.

receiving - Set packet receiving debug flag.

sending - Set packet sending debug flag.

state - Specify the state of the designated flags.

enable - Enable the designated flags.

disable - Disable the designated flags.

Restrictions

Only Administrators can issue this command.

Example

To enabled the DHCPv6 server packet sending debug:

```
DGS-3000-26TC:admin# debug dhcpv6_server packet sending state enable
Command: debug dhcpv6_server packet sending state enable

Success.

DGS-3000-26TC:admin#
```

18-14 debug dhcpv6_server state disable

Description

This command is used to disable the DHCPv6 server debug function.

Format

debug dhcpv6_server state disable

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disabled the DHCPv6 server debug function:

```
DGS-3000-26TC:admin# debug dhcpv6_server state disable
Command: debug dhcpv6_server state disable

Success.

DGS-3000-26TC:admin#
```

18-15 debug dhcpv6_server state enable

Description

This command is used to enable the DHCPv6 server debug function.

Format

debug dhcpv6_server state enable

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enabled the DHCPv6 server debug function:

```
DGS-3000-26TC:admin# debug dhcpv6_server state enable
Command: debug dhcpv6_server state enable

Success.

DGS-3000-26TC:admin#
```


Chapter 19 DHCP Local Relay Command List

```

config dhcp_local_relay vlan <vlan_name 32> state [enable | disable]
config dhcp_local_relay vlan vlanid <vlan_id> state [enable | disable]
config dhcp_local_relay option_82 circuit_id [default | vendor1 | vendor6]
config dhcp_local_relay option_82 ports <portlist> policy [replace | drop | keep]
config dhcp_local_relay option_82 remote_id [default | user_define <desc 32>]
enable dhcp_local_relay
disable dhcp_local_relay
show dhcp_local_relay
show dhcp_local_relay option_82 ports {<portlist>}

```

19-1 config dhcp_local_relay vlan

Description

This command is used to enable or disable DHCP local relay function for specified VLAN name.

When DHCP local relay is enabled for the VLAN, the DHCP packet will be relayed in broadcast way without change of the source MAC address and gateway address. DHCP option 82 will be automatically added.

Format

```
config dhcp_local_relay vlan <vlan_name 32> state [enable | disable]
```

Parameters

<vlan_name 32> - Enter the VLAN name. This name can be up to 32 characters long.

state - Enables or disables DHCP local relay for specified vlan.

enable - Specify to enable the DHCP local relay function.

disable - Specify to disable the DHCP local relay function.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable DHCP local relay for default VLAN:

```

DGS-3000-26TC:admin#config dhcp_local_relay vlan default state enable
Command: config dhcp_local_relay vlan default state enable

Success.

DGS-3000-26TC:admin#

```

19-2 config dhcp_local_relay vlan vlanid

Description

This command is used to enable or disable DHCP local relay function for specified VLAN ID.

Format

```
config dhcp_local_relay vlan vlanid <vlan_id> state [enable | disable]
```

Parameters

vlanid - Specify the VLAN ID.

<vlan_id> - Enter the VLAN ID used here.

state - Enables or disables DHCP local relay for specified vlan.

enable - Specify that the DHCP local relay function will be enabled.

disable - Specify that the DHCP local relay function will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable DHCP local relay for default VLAN:

```
DGS-3000-26TC:admin#config dhcp_local_relay vlan vlanid 1 state enable
Command: config dhcp_local_relay vlan vlanid 1 state enable

Success.

DGS-3000-26TC:admin#
```

19-3 config dhcp_local_relay option_82 circuit_id**Description**

This command is used to configure the circuit id of DHCP relay agent information option 82 of the switch.

Format

```
config dhcp_local_relay option_82 circuit_id [default | vendor1 | vendor6]
```

Parameters

default - - If configured to default, the circuit ID use the original format:

a.	b.	c.	d.	e.	f.	g.
1	0x6	0	4	VLAN	Module ID	Port ID
1 byte	1 byte	1 byte	1 byte	2 bytes	1 byte	1 byte

a. Sub-option type (1 means circuit ID)

b. Length, it should be 6.

c. Circuit ID's sub-option, it should be 0.

d. Sub-option's length, it should be 4

e. VLAN ID (S-VID)

f. Module ID, for standalone switch, it is 0; for stacking switch, it is the box ID that assigned by stacking.

g. Port ID: port number of each box.

vendor1 - If configured to vendor1, the circuit ID uses the following format to communicate with Alcatel-Lucent's server:

a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
1	0x10	0	6	VLAN	Slot ID	Port ID	1	6	MAC
1 byte	1 byte	1 byte	1 byte	2 bytes	2 bytes	2 bytes	1 byte	1 byte	6 bytes

a. Sub-option type (1 means circuit ID).

b. Length.

c. Circuit ID's sub-option's first tag, it should be 0.

d. First tag's length, it should be 6.

- e. VLAN ID.
- f. Slot ID, for standalone switch, it is 1; for stacking switch, it is the box ID that assigned by stacking.
- g. Port ID: port number of each box.
- h. Circuit ID's sub-option's second tag, it should be 1.
- i. Second tag's length, it should be 6.
- j. MAC address: System's MAC address.

vendor6 - If configured to vendor6, the circuit ID uses the following:

F01	F02	F03	F04	F05	F06	F07	F08
1	Length	E (0x45)	t (0x74)	h (0x68)	e (0x65)	r (0x72)	n (0x6E)
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte
F09	F10	F11	F12	F13	F14	F15	F16
e (0x45)	t (0x74)	Chassis ID	/ (0x2F)	0 (0x30)	/ (0x2F)	Port number	: (0x3A)
1 byte	1 byte	1-2 bytes	1 byte	1 byte	1 byte	1-2 bytes	1 byte
F17	F18	F19	F20	F21	F22	F23	F24
cvlan	. (0x2E)	0 (0x30)	Space (0x20)	System Name	/ (0x2F)	0 (0x30)	/ (0x2F)
1-4 bytes	1 byte	1 byte	1 byte	1-128 bytes	1 byte	1 byte	1 byte
F25	F26	F27	F28	F29	F30	F31	
0 (0x30)	/ (0x2F)	Chassis ID	/ (0x2F)	0 (0x30)	/ (0x2F)	Port number	
1 byte	1 byte	1-2 bytes	1 byte	1 byte	1 byte	1-2 bytes	

F01: Sub-option type (1 means circuit ID).

F02: Length.

F03: Character 'E'.

F04: Character 't'.

F05: Character 'h'.

F06: Character 'e'.

F07: Character 'r'.

F08: Character 'n'.

F09: Character 'e'.

F10: Character 't'.

F11: Chassis ID. The number of the chassis. For stand-alone devices, the chassis ID will always be 1. For stacked devices, the chassis ID will be the unit ID.

F12: Slash (/).

F13: ASCII format string '0'.

F14: Slash (/).

F15: Port number. The incoming port number DHCP client packets. ASCII format string.

F16: Colon (:)

F17: 'cvlan' is the client's VLAN ID. The value ranges from 1 to 4094. ASCII format string.

F18: Dot (.)

F19: ASCII format string '0'.

F20: Space.

F21: System name of the Switch. **NOTE:** If the System name exceeds 128 bytes, it will only use the first 128 bytes.

F22: Slash (/).

F23: ASCII format string '0'.

F24: Slash (/).

F25: ASCII format string '0'.

F26: Slash (/).

F27: Chassis ID. This value is the same as F11.

F28: Slash (/).

F29: ASCII format string '0'.

F30: Slash (/).

F31: Port number. The incoming port number of DHCP client packets. ASCII format string.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the circuit id of DHCP relay agent as default:

```
DGS-3000-26TC:admin#config dhcp_local_relay option_82 circuit_id default
Command: config dhcp_local_relay option_82 circuit_id default

Success.

DGS-3000-26TC:admin#
```

19-4 config dhcp_local_relay option_82 ports

Description

This command is used to configure the settings of the specified ports for the policy of the option 82.

Format

config dhcp_local_relay option_82 ports <portlist> policy [replace | drop | keep]

Parameters

<portlist> - Enter a list of ports to be configured.

policy - Specify how to process the packets coming from the client side which have the option 82 field.

replace - Specify to replace the existing option 82 field in the packet.

drop - Specify to discard if the packet has the option 82 field.

keep - Specify to retain the existing option 82 field in the packet.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure port 1 to 5 for the policy of the option 82:

```
DGS-3000-26TC:admin#config dhcp_local_relay option_82 ports 1-5 policy keep
Command: config dhcp_local_relay option_82 ports 1-5 policy keep

Success.

DGS-3000-26TC:admin#
```

19-5 config dhcp_local_relay option_82 remote_id

Description

This command is used to configure the remote ID.

Format

config dhcp_local_relay option_82 remote_id [default | user_define <desc 32>]

Parameters

default - Uses the Switch's system MAC address as the remote ID.

user_define - Uses user-defined string as the remote ID.

<desc 32> - Enter the maximum of 32 characters. Space is allowed in the string.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the remote ID:

```
DGS-3000-26TC:admin#config dhcp_local_relay option_82 remote_id user_define D-Link L2Switch
Command: config dhcp_local_relay option_82 remote_id user_define D-Link L2Switch
```

Success.

```
DGS-3000-26TC:admin#
```

19-6 enable dhcp_local_relay

Description

This command is used to globally enable the DHCP local relay function on the Switch.

Format

enable dhcp_local_relay

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the DHCP local relay function:

```
DGS-3000-26TC:admin#enable dhcp_local_relay
Command: enable dhcp_local_relay
```

Success.

```
DGS-3000-26TC:admin#
```

19-7 disable dhcp_local_relay

Description

This command is used to globally disable the DHCP local relay function on the Switch.

Format

disable dhcp_local_relay

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the DHCP local relay function:

```
DGS-3000-26TC:admin#disable dhcp_local_relay
Command: disable dhcp_local_relay

Success.

DGS-3000-26TC:admin#
```

19-8 show dhcp_local_relay

Description

This command is used to display the current DHCP local relay configuration.

Format

show dhcp_local_relay

Parameters

None.

Restrictions

None.

Example

To display local DHCP relay status:

```
DGS-3000-26TC:admin#show dhcp_local_relay
Command: show dhcp_local_relay

DHCP/BOOTP Local Relay Status      : Disabled
DHCP/BOOTP Local Relay VID List    : 1

DHCP Relay Agent Information Option 82 Circuit ID : Default
DHCP Relay Agent Information Option 82 Remote ID : D-Link L2Switch

DGS-3000-26TC:admin#
```

19-9 show dhcp_local_relay option_82 ports

Description

This command is used to display the current DHCP local relay option 82 configuration of each port.

Format

```
show dhcp_local_relay option_82 ports {<portlist>}
```

Parameters

<portlist> - (Optional) Enter a list of ports to be displayed.

Restrictions

None.

Example

To display DHCP local relay option 82 configuration of port 1 to 5:

```
DGS-3000-26TC:admin#show dhcp_local_relay option_82 ports 1-5
Command: show dhcp_local_relay option_82 ports 1-5

Port  Option 82
      Policy
----  -
1     keep
2     keep
3     keep
4     keep
5     keep

DGS-3000-26TC:admin#
```

Chapter 20 DHCP Relay Command List

```

config dhcp_relay {hops <int 1-16> | time <sec 0-65535>}
config dhcp_relay add ipif <ipif_name 12> <ipaddr>
config dhcp_relay add vlanid <vlan_id_list> <ipaddr>
config dhcp_relay delete ipif <ipif_name 12> <ipaddr>
config dhcp_relay delete vlanid <vlan_id_list> <ipaddr>
config dhcp_relay option_82 {state [enable | disable] | check [enable | disable] | policy [replace | drop | keep] |
  remote_id [default | user_define <desc 32>]}
config dhcp_relay option_82 circuit_id [default | vendor1 | vendor6]
enable dhcp_relay
disable dhcp_relay
show dhcp_relay {ipif <ipif_name 12>}
config dhcp_relay option_60 state [enable | disable]
config dhcp_relay option_60 add string <multiword 255> relay <ipaddr> [exact-match | partial-match]
config dhcp_relay option_60 default [relay <ipaddr> | mode [relay | drop]]
config dhcp_relay option_60 delete [string <multiword 255> {relay <ipaddr>} | ipaddress <ipaddr> | all | default
  {<ipaddr>}]
show dhcp_relay option_60 {[string <multiword 255> | ipaddress <ipaddr> | default]}
config dhcp_relay option_61 state [enable | disable]
config dhcp_relay option_61 add [mac_address <macaddr> | string <multiword 255>] [relay <ipaddr> | drop]
config dhcp_relay option_61 default [relay <ipaddr> | drop]
config dhcp_relay option_61 delete [mac_address <macaddr> | string <multiword 255> | all]
show dhcp_relay option_61
config dhcp_relay ports [<portlist> | all] state [enable | disable]
show dhcp_relay ports {<portlist>}
config dhcp_relay option_125 add enterprise_number <int> [string <multiword 255> | hex <string 255>] relay
  <ipaddr> [exact-match | partial-match]
config dhcp_relay option_125 default [relay <ipaddr> | mode [relay | drop]]
config dhcp_relay option_125 delete [enterprise_number <int> {[string <multiword 255> | hex <string 255>]}
  {relay <ipaddr>} | [string <multiword 255> | hex <string 255>] {relay <ipaddr>} | ipaddress <ipaddr> | all |
  default {<ipaddr>}]
config dhcp_relay option_125 state [enable|disable]
show dhcp_relay option_125 {[enterprise_number <int> | [string <multiword 255> | hex <string 255>] | ipaddress
  <ipaddr> | default]}

```

20-1 config dhcp_relay

Description

This command is used to configure the DHCP relay feature of the Switch.

Format

```
config dhcp_relay {hops <int 1-16> | time <sec 0-65535>}
```

Parameters

hops - (Optional) Specify the maximum number of relay hops that the DHCP/BOOTP packets can cross. The range is 1 to 16. The default value is 4. The DHCP packet will be dropped when the relay hop count in the received packet is equal to or greater than this setting.

<int 1-16> - Enter the maximum number of relay hops here. This value must be between 1 and 16.

time - (Optional) The time field in the DHCP packet must be equal to or greater than this setting to be relayed by the router. The default value is 0.

<sec 0-65535> - Enter the relay time here. This value must be between 0 and 65535 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCP relay hops and time parameters:

```
DGS-3000-26TC:admin#config dhcp_relay hops 4 time 2
Command: config dhcp_relay hops 4 time 2

Success.

DGS-3000-26TC:admin#
```

20-2 config dhcp_relay add ipif

Description

This command is used to add an IP destination address of the DHCP server for relay of DHCP/BOOTP packets.

Format

config dhcp_relay add ipif <ipif_name 12> <ipaddr>

Parameters

ipif_name - The name of the IP interface which contains the IP address below.

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.

<ipaddr> - The DHCP/BOOTP server IP address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a DHCP/BOOTP server to the relay table:

```
DGS-3000-26TC:admin#config dhcp_relay add ipif System 10.43.21.12
Command: config dhcp_relay add ipif System 10.43.21.12

Success.

DGS-3000-26TC:admin#
```

20-3 config dhcp_relay add vlanid

Description

This command is used to add an IP address as a destination to forward (relay) DHCP/BOOTP packets. If there is an IP interface in the VLAN and it has configured a DHCP server at the interface level, then the configuration at the interface level has higher priority. In this case, the DHCP server configured on the VLAN will not be used to forward the DHCP packets.

Format

```
config dhcp_relay add vlanid <vlan_id_list> <ipaddr>
```

Parameters

vlanid - Specify the VLAN ID list used for this configuration.

<vlan_id_list> - Enter the VLAN ID list used for this configuration here.

<ipaddr> - Enter the DHCP/BOOTP server IP address used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a DHCP/BOOTP server 10.43.21.12 to VLAN 1 to 10:

```
DGS-3000-26TC:admin#config dhcp_relay add vlanid 1-10 10.43.21.12
Command: config dhcp_relay add vlanid 1-10 10.43.21.12

Success.

DGS-3000-26TC:admin#
```

20-4 config dhcp_relay delete ipif

Description

This command is used to delete one of the IP destination addresses in the Switch's relay table.

Format

```
config dhcp_relay delete ipif <ipif_name 12> <ipaddr>
```

Parameters

ipif - The name of the IP interface which contains the IP address below.

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.

<ipaddr> - The DHCP/BOOTP server IP address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a DHCP/BOOTP server to the relay table:

```
DGS-3000-26TC:admin#config dhcp_relay delete ipif System 10.43.21.12
Command: config dhcp_relay delete ipif System 10.43.21.12

Success.

DGS-3000-26TC:admin#
```

20-5 config dhcp_relay delete vlanid

Description

This command is used to delete an IP address as a destination to forward (relay) DHCP/BOOTP packets.

Format

```
config dhcp_relay delete vlanid <vlan_id_list> <ipaddr>
```

Parameters

vlanid - Specify the VLAN ID list used for this configuration.
<vlan_id_list> - Enter the VLAN ID list used for this configuration here.
<ipaddr> - Enter the DHCP/BOOTP server IP address used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a DHCP/BOOTP server 10.43.21.12 from VLAN 2 and VLAN 3:

```
DGS-3000-26TC:admin#config dhcp_relay delete vlanid 2-3 10.43.21.12
Command: config dhcp_relay delete vlanid 2-3 10.43.21.12

Success.

DGS-3000-26TC:admin#
```

20-6 config dhcp_relay option_82

Description

This command is used to configure the processing of DHCP option 82 for the DHCP relay function.

Format

```
config dhcp_relay option_82 {state [enable | disable] | check [enable | disable] | policy [replace | drop | keep] | remote_id [default | user_define <desc 32>]}
```

Parameters

state - (Optional) Specify that the DHCP relay option 82 state will be enabled or disabled.
enable - Specify that the option 82 processing will be enabled. When the state is enabled, the DHCP packet will be inserted with the option 82 field before being relayed to server. The DHCP packet will be processed based on the behavior defined in check and policy setting.
disable - Specify that the option 82 processing will be disabled. When the state is disabled, the DHCP packet will be relayed directly to server without further check and processing on the packet. The default setting is disabled.

check - (Optional) When the state is enabled, For packet come from client side, the packet should not have the option 82's field. If the packet has this option field, it will be dropped. The default setting is disabled.
enable - Specify that checking will be enabled.
disable - Specify that checking will be disabled.

policy - (Optional) Specify the policy used. This option takes effect only when the check status is disabled. The default setting is set to 'replace'.
replace - Specify to replace the existing option 82 field in the packet. The Switch will use its own option 82

value to replace the old option 82 value in the packet.

drop - Specify to discard if the packet has the option 82 field. If the packet, that comes from the client side, contains an option 82 value, then the packet will be dropped. If the packet from the client side does not contain an option 82 value, its own option 82 value will be inserted into the packet.

keep - Specify to retain the existing option 82 field in the packet. If the packet from the client side contains an option 82 value, the old option 82 value will be kept. If the packet from the client side does not contain an option 82 value, its own option 82 value will be inserted into the packet.

remote_id - (Optional) Specify the content in Remote ID suboption.

default - Uses switch's system MAC address as remote ID.

user_define - Uses user-defined string as remote ID. The space character is allowed in the string.

<desc 32> - Enter the user defined description here. This value can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure DHCP relay option 82:

```
DGS-3000-26TC:admin#config dhcp_relay option_82 state enable
Command: config dhcp_relay option_82 state enable

Success.

DGS-3000-26TC:admin#config dhcp_relay option_82 check disable
Command: config dhcp_relay option_82 check disable

Success.

DGS-3000-26TC:admin#config dhcp_relay option_82 policy replace
Command: config dhcp_relay option_82 policy replace

Success.

DGS-3000-26TC:admin#config dhcp_relay option_82 remote_id user_define "D-Link L2 Switch"
Command: config dhcp_relay option_82 remote_id user_define "D-Link L2 Switch"

Success.

DGS-3000-26TC:admin#
```

20-7 config dhcp_relay option_82 circuit_id

Description

This command is used to configure the circuit id of DHCP relay agent information option 82 of the Switch.

Format

config dhcp_relay option_82 circuit_id [default | vendor1 | vendor6]

Parameters

default - If configured to default, the circuit ID use the original format:

a.	b.	c.	d.	e.	f.	g.
1	0x6	0	4	VLAN	Module ID	Port ID
1 byte	1 byte	1 byte	1 byte	2 bytes	1 byte	1 byte

- a. Sub-option type (1 means circuit ID)
- b. Length, it should be 6.
- c. Circuit ID's sub-option, it should be 0.
- d. Sub-option's length, it should be 4.
- e. VLAN ID (S-VID).
- f. Module ID, for standalone switch, it is 0; for stacking switch, it is the box ID that assigned by stacking.
- g. Port ID: port number of each box.

vendor1 - If configured to vendor1, the circuit ID uses the following format to communicate with Alcatel-Lucent's server:

a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
1	0x10	0	6	VLAN	Slot ID	Port ID	1	6	MAC
1 byte	1 byte	1 byte	1 byte	2 bytes	2 bytes	2 bytes	1 byte	1 byte	6 bytes

- a. Sub-option type (1 means circuit ID).
- b. Length.
- c. Circuit ID's sub-option's first tag, it should be 0.
- d. First tag's length, it should be 6.
- e. VLAN ID.
- f. Slot ID, for standalone switch, it is 1; for stacking switch, it is the box ID that assigned by stacking.
- g. Port ID: port number of each box.
- h. Circuit ID's sub-option's second tag, it should be 1.
- i. Second tag's length, it should be 6.
- j. MAC address: System's MAC address.

vendor6 - If configured to vendor6, the circuit ID uses the following:

F01	F02	F03	F04	F05	F06	F07	F08
1	Length	E (0x45)	t (0x74)	h (0x68)	e (0x65)	r (0x72)	n (0x6E)
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

F09	F10	F11	F12	F13	F14	F15	F16
e (0x45)	t (0x74)	Chassis ID	/ (0x2F)	0 (0x30)	/ (0x2F)	Port number	: (0x3A)
1 byte	1 byte	1-2 bytes	1 byte	1 byte	1 byte	1-2 bytes	1 byte

F17	F18	F19	F20	F21	F22	F23	F24
cvlan	. (0x2E)	0 (0x30)	Space (0x20)	System Name	/ (0x2F)	0 (0x30)	/ (0x2F)
1-4 bytes	1 byte	1 byte	1 byte	1-128 bytes	1 byte	1 byte	1 byte

F25	F26	F27	F28	F29	F30	F31
0 (0x30)	/ (0x2F)	Chassis ID	/ (0x2F)	0 (0x30)	/ (0x2F)	Port number
1 byte	1 byte	1-2 bytes	1 byte	1 byte	1 byte	1-2 bytes

- F01: Sub-option type (1 means circuit ID).
- F02: Length.
- F03: Character 'E'.
- F04: Character 't'.
- F05: Character 'h'.
- F06: Character 'e'.
- F07: Character 'r'.
- F08: Character 'n'.
- F09: Character 'e'.
- F10: Character 't'.
- F11: Chassis ID. The number of the chassis. For stand-alone devices, the chassis ID will always be 1. For stacked devices, the chassis ID will be the unit ID.
- F12: Slash (/).
- F13: ASCII format string '0'.
- F14: Slash (/).
- F15: Port number. The incoming port number DHCP client packets. ASCII format string.
- F16: Colon (:)
- F17: 'cvlan' is the client's VLAN ID. The value ranges from 1 to 4094. ASCII format string.
- F18: Dot (.)
- F19: ASCII format string '0'.

F20: Space.
F21: System name of the Switch. **NOTE:** If the System name exceeds 128 bytes, it will only use the first 128 bytes.
F22: Slash (/).
F23: ASCII format string '0'.
F24: Slash (/).
F25: ASCII format string '0'.
F26: Slash (/).
F27: Chassis ID. This value is the same as F11.
F28: Slash (/).
F29: ASCII format string '0'.
F30: Slash (/).
F31: Port number. The incoming port number of DHCP client packets. ASCII format string.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the circuit ID as default:

```
DGS-3000-26TC:admin#config dhcp_relay option_82 circuit_id default
Command: config dhcp_relay option_82 circuit_id default

Success.

DGS-3000-26TC:admin#
```

20-8 enable dhcp_relay

Description

This command is used to enable the DHCP relay function on the Switch.

Format

enable dhcp_relay

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the DHCP relay function.

```
DGS-3000-26TC:admin#enable dhcp_relay
Command: enable dhcp_relay

Success.

DGS-3000-26TC:admin#
```

20-9 disable dhcp_relay

Description

This command is used to disable the DHCP relay function on the Switch.

Format

disable dhcp_relay

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the DHCP relay function:

```
DGS-3000-26TC:admin#disable dhcp_relay
Command: disable dhcp_relay

Success.

DGS-3000-26TC:admin#
```

20-10 show dhcp_relay

Description

This command is used to display the current DHCP relay configuration.

Format

show dhcp_relay {ipif <ipif_name 12>}

Parameters

```
ipif - (Optional) Specify the IP interface name.
<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.
If no parameter is specified , the system will display all DHCP relay configuration.
```

Restrictions

None.

Example

To display all DHCP relay configuration:

```
DGS-3000-26TC:admin#show dhcp_relay
Command: show dhcp_relay

DHCP/BOOTP Relay Status      : Disabled
DHCP/BOOTP Hops Count Limit  : 4
DHCP/BOOTP Relay Time Threshold : 2
DHCP Vendor Class Identifier Option 60 State: Disabled
DHCP Client Identifier Option 61 State: Disabled
DHCP Vendor-Specific Information Option 125 State: Disabled
DHCP Relay Agent Information Option 82 State : Disabled
DHCP Relay Agent Information Option 82 Check : Disabled
DHCP Relay Agent Information Option 82 Policy : Replace
DHCP Relay Agent Information Option 82 Circuit ID : Default
DHCP Relay Agent Information Option 82 Remote ID : F0-7D-68-30-00-10
```

Interface	Server 1	Server 2	Server 3	Server 4
System	10.43.21.12			

```
Server          VLAN ID List
-----
10.43.21.12    1-10

DGS-3000-26TC:admin#
```

To display DHCP relay configuration of the interface, System:

```
DGS-3000-26TC:admin#show dhcp_relay ipif System
Command: show dhcp_relay ipif System

DHCP/BOOTP Relay Status      : Disabled
DHCP/BOOTP Hops Count Limit  : 4
DHCP/BOOTP Relay Time Threshold : 2
DHCP Vendor Class Identifier Option 60 State: Disabled
DHCP Client Identifier Option 61 State: Disabled
DHCP Vendor-Specific Information Option 125 State: Disabled
DHCP Relay Agent Information Option 82 State : Disabled
DHCP Relay Agent Information Option 82 Check : Disabled
DHCP Relay Agent Information Option 82 Policy : Replace
DHCP Relay Agent Information Option 82 Circuit ID : Default
DHCP Relay Agent Information Option 82 Remote ID : F0-7D-68-30-00-10
```

Interface	Server 1	Server 2	Server 3	Server 4
System	10.43.21.12			

```
DGS-3000-26TC:admin#
```

20-11 config dhcp_relay option_60 state

Description

This command is used to decide whether DHCP relay will process the DHCP option 60 or not.

When option_60 is enabled, if the packet does not have option 60, then the relay servers cannot be determined based on option 60. The relay servers will be determined based on either option 61 or per IPIF configured servers.

If the relay servers are determined based on option 60 or option 61, then per IPIF configured servers will be ignored.

If the relay servers are not determined either by option 60 or option 61, then per IPIF configured servers will be used to determine the relay servers.

Format

```
config dhcp_relay option_60 state [enable | disable]
```

Parameters

state - Specify that the DHCP relay function should use the option 60 rule to relay the DHCP packets.

enable - Specify that the option 60 rule will be enabled.

disable - Specify that the option 60 rule will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the state of dhcp_relay option 60:

```
DGS-3000-26TC:admin#config dhcp_relay option_60 state enable
Command: config dhcp_relay option_60 state enable

Success

DGS-3000-26TC:admin#
```

20-12 config dhcp_relay option_60 add string

Description

This command is used to configure the option 60 relay rules. Note that different string can be specified with the same relay server, and the same string can be specified with multiple relay servers.

The system will relay the packet to all the matching servers.

Format

```
config dhcp_relay option_60 add string <multiword 255> relay <ipaddr> [exact-match | partial-match]
```

Parameters

<multiword 255> - Enter the string value here. This value can be up to 255 characters long.

relay - Specify a relay server IP address.

<ipaddr> - Enter the IP address used for this configuration here.

exact-match - The option 60 string in the packet must full match with the specified string.

partial-match - The option 60 string in the packet only need partial match with the specified string.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCP relay option 60 option:

```
DGS-3000-26TC:admin#config dhcp_relay option_60 add string "abc" relay 10.90.90.1 exact-match
Command: config dhcp_relay option_60 add string "abc" relay 10.90.90.1 exact-match

Success.

DGS-3000-26TC:admin#
```

20-13 config dhcp_relay option_60 default

Description

This command is used to configure the DHCP relay option 60 default drop option.

When there are no match servers found for the packet based on option 60, the relay servers will be determined by the default relay server setting.

When there is no matching found for the packet, the relay servers will be determined based on the default relay servers.

When drop is specified, the packet with no matching rules found will be dropped without further process.

If the setting is no- drop, then the packet will be processed further based on option 61. The final relay servers will be the union of option 60 default relay servers and the relay servers determined by option 61.

Format

config dhcp_relay option_60 default [relay <ipaddr> | mode [relay | drop]]

Parameters

relay - Specify the IP address used for the DHCP relay forward function.

<ipaddr> - Enter the IP address used for this configuration here.

mode - Specify the DHCP relay option 60 mode.

relay - Specify to relay the packet based on the relay rules.

drop - Specify to drop the packet that has no matching option 60 rules.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCP relay option 60 default drop option:

```
DGS-3000-26TC:admin#config dhcp_relay option_60 default mode drop
Command: config dhcp_relay option_60 default mode drop

Success.

DGS-3000-26TC:admin#
```

20-14 config dhcp_relay option_60 delete

Description

This command is used to delete DHCP relay option 60 entry.

Format

```
config dhcp_relay option_60 delete [string <multiword 255> {relay <ipaddr>} | ipaddress <ipaddr> | all |
default {<ipaddr>}]
```

Parameters

string - Deletes all the entries, of which the string is equal to the specified string, if the IP address is not specified. <multiword 255> - Enter the DHCP option 60 string to be removed here. This value can be up to 255 characters long.
relay - (Optional) Deletes one entry, of which the string and the IP address are equal to the string and IP address specified by the user. <ipaddr> - Enter the IP address used for this configuration here.
ipaddress - Deletes all the entry of which the IP address is equal to the specified IP address. <ipaddr> - Enter the IP address used for this configuration here.
all - Deletes all the entry. Default relay servers are excluded.
default - Deletes the default relay IP address that is specified by the user. <ipaddr> - (Optional) Enter the IP address used for this configuration here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the DHCP relay option 60 string called 'abc':

```
DGS-3000-26TC:admin#config dhcp_relay option_60 delete string "abc" relay 10.90.90.1
Command: config dhcp_relay option_60 delete string "abc" relay 10.90.90.1

Success.

DGS-3000-26TC:admin#
```

20-15 show dhcp_relay option_60

Description

This command is used to show DHCP relay Option 60 entry specified by the user.

Format

```
show dhcp_relay option_60 [{string <multiword 255> | ipaddress <ipaddr> | default}]
```

Parameters

string - (Optional) Displays the DHCP relay Option 60 string specified by the user. <multiword 255> - Enter the entry's string value here. This value can be up to 255 characters long.
ipaddress - (Optional) Displays the IP address specified by the user. <ipaddr> - Enter the IP address here.
default - (Optional) Displays the default DHCP relay Option 60 information. If no parameter is specified then all the DHCP option 60 entries will be displayed.

Restrictions

None.

Example

To show DHCP option 60 information:

```
DGS-3000-26TC:admin#show dhcp_relay option_60
Command: show dhcp_relay option_60

Default Processing Mode: Drop

Default Servers:

Matching Rules:

String                               Match Type                            IP Address
-----                               -
abc                                   Exact Match                            10.90.90.1

Total Entries : 1

DGS-3000-26TC:admin#
```

20-16 config dhcp_relay option_61 state

Description

This command is used to decide whether the DHCP relay will process the DHCP option 61 or not.

When option 61 is enabled, if the packet does not have option 61, then the relay servers cannot be determined based on option 61.

If the relay servers are determined based on option 60 or option 61, then per IPIF configured servers will be ignored.

If the relay servers are not determined either by option 60 or option 61, then per IPIF configured servers will be used to determine the relay servers.

Format

config dhcp_relay option_61 state [enable | disable]

Parameters

enable - Enables the function DHCP relay use option 61 ruler to relay DHCP packet.

disable - Disables the function DHCP relay use option 61 ruler to relay DHCP packet.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the state of dhcp_relay option 61:

```
DGS-3000-26TC:admin#config dhcp_relay option_61 state enable
Command: config dhcp_relay option_61 state enable

Success

DGS-3000-26TC:admin#
```

20-17 config dhcp_relay option_61 add

Description

This command is used to add a rule to determine the relay server based on option 61. The match rule can base on either MAC address or a user-specified string. Only one relay server can be specified for a MAC-address or a string.

If relay servers are determined based on option 60, and one relay server is determined based on option 61, the final relay servers will be the union of these two sets of the servers.

Format

```
config dhcp_relay option_61 add [mac_address <macaddr> | string <multiword 255>] [relay <ipaddr> | drop]
```

Parameters

mac_address - The client's client-ID which is the hardware address of client.

<macaddr> - Enter the client's MAC address here.

string - The client's client-ID, which is specified by administrator.

<multiword 255> - Enter the client's description here. This value can be up to 255 characters long.

relay - Specify to relay the packet to a IP address.

<ipaddr> - Enter the IP address used for this configuration here.

drop - Specify to drop the packet.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCP relay option 61 function:

```
DGS-3000-26TC:admin#config dhcp_relay option_61 add mac_address 00-11-22-33-44-55 drop
Command: config dhcp_relay option_61 add mac_address 00-11-22-33-44-55 drop

Success

DGS-3000-26TC:admin#
```

20-18 config dhcp_relay option_61 default

Description

This command is used to configure the default ruler for option 61.

Format

```
config dhcp_relay option_61 default [relay <ipaddr> | drop]
```

Parameters

relay - Specify to relay the packet that has no option matching 61 matching rules to an IP address.

<ipaddr> - Enter the IP address used for this configuration here.

drop - Specify to drop the packet that have no option 61 matching rules.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCP relay option 61 function:

```
DGS-3000-26TC:admin#config dhcp_relay option_61 default drop
```

```
Command: config dhcp_relay option_61 default drop
```

```
Success
```

```
DGS-3000-26TC:admin#
```

20-19 config dhcp_relay option_61 delete

Description

This command is used to delete an option 61 rule.

Format

config dhcp_relay option_61 delete [mac_address <macaddr> | string <multiword 255> | all]

Parameters

mac_address - The entry with the specified MAC address will be deleted.

<macaddr> - Enter the MAC address here.

string - The entry with the specified string will be deleted.

<multiword 255> - Enter the string value here. This value can be up to 255 characters long.

all - All rules excluding the default rule will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To remove a DHCP relay option 61 entry:

```
DGS-3000-26TC:admin#config dhcp_relay option_61 delete mac_address 00-11-22-33-44-55
```

```
Command: config dhcp_relay option_61 delete mac_address 00-11-22-33-44-55
```

```
Success
```

```
DGS-3000-26TC:admin#
```

20-20 show dhcp_relay option_61

Description

This command is used to show all rulers for option 61.

Format

show dhcp_relay option_61

Parameters

None.

Restrictions

None.

Example

To display DHCP relay rulers for option 61:

```
DGS-3000-26TC:admin#show dhcp_relay option_61
Command: show dhcp_relay option_61

Default Relay Rule:Drop

Matching Rules:

Client-ID                               Type           Relay Rule
-----
00-11-22-33-44-55                       MAC Address    Drop

Total Entries : 1

DGS-3000-26TC:admin#
```

20-21 config dhcp_relay ports

Description

This command is used to configure the DHCP relay of the ports.

Format

config dhcp_relay ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter a list of ports to be configured.

all - Specify all ports to be configured.

state - Specify the DHCP relay state of the ports.

enable - Enables the DHCP relay.

disable - Disables the DHCP relay.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the DHCP relay on port 1-3:

```
DGS-3000-26TC:admin#config dhcp_relay ports 1-3 state enable
Command: config dhcp_relay ports 1-3 state enable

Success.

DGS-3000-26TC:admin#
```

20-22 show dhcp_relay ports

Description

This command is used to display the DHCP relay of each port.

Format

show dhcp_relay ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a list of ports to be displayed.

Restrictions

None.

Example

To display the DHCP relay state of port 1-10:

```
DGS-3000-26TC:admin#show dhcp_relay ports 1-10
Command: show dhcp_relay ports 1-10

Port  State
----  -
1     Enabled
2     Enabled
3     Enabled
4     Enabled
5     Enabled
6     Enabled
7     Enabled
8     Enabled
9     Enabled
10    Enabled

DGS-3000-26TC:admin#
```


20-23 config dhcp_relay option_125 add enterprise_number

Description

This command is used to configure the Option 125 relay rules. Note that different rules can be specified with the same relay server and the same match rule can be specified with multiple relay servers. The system will relay the packets to all the matching servers.

Format

**config dhcp_relay option_125 add enterprise_number <int> [string <multiword 255> | hex <string 255>]
relay <ipaddr> [exact-match | partial-match]**

Parameters

<int> - Enter the enterprise number.
string - Specify the DHCP relay Option 125 string used. <multiword 255> - Enter the DHCP relay Option 125 string used. This string can be up to 255 characters long.
hex - Specify the DHCP relay Option 125 HEX string used. The system will add a 0 after the last HEX character. <string 255> - Enter the DHCP relay Option 125 HEX string used. This string can be up to 255 characters long.
relay - Specify the relay server IP address. <ipaddr> - Enter the relay server IP address
exact match - Specify that the Option 125 string in the packet must fully match with the specified string.
partial-match - Specify that the Option 125 string in the packet only needs a partial match with the specified string.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add option 125 with enterprise number 125 and hex "0123" relay entry to 1.1.1.1:

```
DGS-3000-26TC:admin# config dhcp_relay option_125 add enterprise_number 0123 hex 0123 relay
1.1.1.1 exact-match
Command: config dhcp_relay option_125 add enterprise_number 123 hex 0123 relay 1.1.1.1 exact-
match

Success

DGS-3000-26TC:admin#
```

20-24 config dhcp_relay option_125 default

Description

This command is used to when there are no matching servers found for the packet based on option 125, the relay servers to use will be determined by the default relay server setting.

When drop is specified, the packet with no matching rules found will be dropped without further processing. If the setting is configured to relay it will not drop and then the packet will be processed further based on option 60 and option 61. The final relay servers to be used will be a combination of option 60 default relay servers, the relay servers determined by option 61 and the relay servers determined by option 125.

Format

config dhcp_relay option_125 default [relay <ipaddr> | mode [relay | drop]]

Parameters

- relay** - Specify the IP address for DHCP relay forwarding.
- <ipaddr>** - Enter a relay server IP for packets that match the option 125 rules set.
- mode** - Specify to drop the packet that matches option 125 rules set.
- relay** - Specify which packet will be relayed based on the relay rules.
- drop** - Specify to drop the packet that matches option 125 rules set.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCP relay option 125 default to drop:

```
DGS-3000-26TC:admin#config dhcp_relay option_125 default mode drop
Command: config dhcp_relay option_125 default mode drop

Success.

DGS-3000-26TC:admin#
```

20-25 config dhcp_relay option_125 delete

Description

This command is used to delete the entry specified by the user.

Format

```
config dhcp_relay option_125 delete [enterprise_number <int> {[string <multiword 255> | hex <string 255>]}
{relay <ipaddr>} | [string <multiword 255> | hex <string 255>] {relay <ipaddr>} | ipaddress <ipaddr> | all |
default {<ipaddr>}]
```

Parameters

- enterprise_number** - Specify the DHCP relay Option 125 enterprise number.
- <int>** - Enter the DHCP relay Option 125 enterprise number.
- string** - (Optional) Specify to delete all the entries with a string equal to the string specified if no other parameter is specified.
- <multiword 255>** - Enter the DHCP relay Option 125 string here. This string can be up to 255 characters long.
- hex** - (Optional) Specify to delete all the entries with a HEX equal to the HEX specified if no other parameter is specified.
- <string 255>** - Enter the DHCP relay Option 125 HEX string here. This string can be up to 255 characters long.
- relay** - (Optional) Specify to delete all the entries with the IP address equal to the IP address specified if no other parameter is specified.
- <ipaddr>** - Enter the IP address here.
- string** - Specify to delete all the entries with a string equal to the string specified if no other parameter is specified.
- <multiword 255>** - Enter the DHCP relay Option 125 string here. This string can be up to 255 characters long.
- hex** - Specify to delete all the entries with a HEX equal to the HEX specified if no other parameter is specified.
- <string 255>** - Enter the DHCP relay Option 125 HEX string here. This string can be up to 255 characters long.
- relay** - (Optional) Specify to delete all the entries with the IP address equal to the IP address specified if no other parameter is specified.
- <ipaddr>** - Enter the IP address here.
- ipaddress** - Specify to delete all the entries whose IP address is equal to the specified IP address.

<ipaddr> - Enter to IP address used here.

all - Specify to delete all the entries. Default relay servers are excluded.

default - Specify to delete the default relay IP address that is specified by the user. If the IP address is not specified, delete all default relay IP addresses.

<ipaddr> - (Optional) Enter the specified IP address here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a DHCP relay option 125 specified entry:

```
DGS-3000-26TC:admin# config dhcp_relay option_125 delete enterprise_number 171 string "test"
relay 192.168.0.2
Command: config dhcp_relay option_125 delete enterprise_number 171 string "test" relay
192.168.0.2Success.

Success

DGS-3000-26TC:admin#
```

20-26 config dhcp_relay option_125 state

Description

This command is used to configure whether the DHCP relay will process packets using the DHCP option 125 or not.

Format

config dhcp_relay option_125 state [enable | disable]

Parameters

enable - Specify to enable the DHCP relay Option 125 feature's global state.

disable - Specify to disable the DHCP relay Option 125 feature's global state.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the state of the DHCP relay option 125 to enabled:

```
DGS-3000-26TC:admin# config dhcp_relay option_125 state enable
Command: config dhcp_relay option_125 state enable.

Success

DGS-3000-26TC:admin#
```

20-27 show dhcp_relay option_125

Description

This command is used to show dhcp_relay option_125 command displays the option 125 entry specified by the user.

Format

```
show dhcp_relay option_125 {[enterprise_number <int> | [string <multiword 255> | hex <string 255>] |  
ipaddress <ipaddr> | default]}
```

Parameters

enterprise number - (Optional) Enter the entry with the enterprise number that matched the enterprise number specified.

<int> - Enter the matching enterprise number.

string - (Optional) Specify the entry with the string that matches the string specified.

<multiword 255> - Enter the multiword 255 string.

hex - (Optional) Specify the entry with the hex that matches the hex specified.

<string 255> - Enter hex string 255.

ipaddress - (Optional) Specify the entry with the IP address matching the specified IP address.

<ipaddr> - Enter the matching IP address.

default - (Optional) Specify the default behavior of DHCP relay option 125.

Restrictions

None.

Example

To display DHCP relay option 125 information:

```
DGS-3000-26TC:admin#show dhcp_relay option_125
Command: show dhcp_relay option_125

Default Processing Mode: Drop

Default Servers:
    192.168.0.1

Enterprise ID      : 171
-----
Match Data                Data Type  Match Type  IP Address
-----
test                      String     Exact       192.168.0.2
test                      String     Exact       192.168.0.3
test                      String     Partial     192.168.0.4

Enterprise ID      : 172
-----
Match Data                Data Type  Match Type  IP Address
-----
01020304                Hex       Partial     192.168.0.2
01020304                Hex       Partial     192.168.0.3

Total Entries : 5

DGS-3000-26TC:admin#
```

Chapter 21 DHCP Server Command List

enable dhcp_server
enable dhcp_class
disable dhcp_server
disable dhcp_class
create dhcp excluded_address begin_address <ipaddr> end_address <ipaddr>
create dhcp class <class_name 12>
create dhcp pool <pool_name 12>
create dhcp pool manual_binding <pool_name 12> <ipaddr> hardware_address <macaddr> {type [ethernet ieee802]}
create dhcp option_profile <profile_name 12>
config dhcp class <class_name 12> [add option <int> [string <multiword 255> hex <string255>] delete option <int>]
config dhcp pool network_addr <pool_name 12> <network_address>
config dhcp pool domain_name <pool_name 12> {<domain_name 64>}
config dhcp pool dns_server <pool_name 12> {<ipaddr>} {<ipaddr>} {<ipaddr>}
config dhcp pool netbios_name_server <pool_name 12> {<ipaddr>} {<ipaddr>} {<ipaddr>}
config dhcp pool netbios_node_type <pool_name 12> [broadcast peer_to_peer mixed hybrid]
config dhcp pool default_router <pool_name 12> {<ipaddr>} {<ipaddr>} {<ipaddr>}
config dhcp pool lease <pool_name 12> [<day 0-365> <hour 0-23> <minute 0-59> infinite]
config dhcp pool boot_file <pool_name 12> {<file_name 64>}
config dhcp pool next_server <pool_name 12> {<ipaddr>}
config dhcp ping_packets <number 0-10>
config dhcp ping_timeout <millisecond 10-2000>
config dhcp option_profile <profile_name 12> [add option <value 1-254> [string <multiword 255> hex <string 254>] delete option <value 1-254>]
config dhcp pool option_43 <pool_name 12> [add string <multiword 255> delete]
config dhcp pool option_profile <pool_name 12> [add delete] <profile_name 12>
config dhcp pool class <pool_name 12> [add delete] <class_name 12> {begin_address <ipaddr> end_address <ipaddr>}
clear dhcp binding [<pool_name 12> [<ipaddr> all] all]
clear dhcp conflict_ip [<ipaddr> all]
delete dhcp excluded_address [begin_address <ipaddr> end_address <ipaddr> all]
delete dhcp pool [<pool_name 12> all]
delete dhcp pool manual_binding <pool_name 12> [<ipaddr> all]
delete dhcp option_profile <profile_name 12>
delete dhcp class <class_name 12>
show dhcp excluded_address
show dhcp binding {<pool_name 12>}
show dhcp pool {<pool_name 12>}
show dhcp pool manual_binding {<pool_name 12>}
show dhcp_server
show dhcp conflict_ip {<ipaddr>}
show dhcp option_profile {<profile_name 12>}
show dhcp class {<class_name 12>}

21-1 enable dhcp_server

Description

This command is used to enable the DHCP server to distribute IP addresses, subnet masks, gateway addresses, and DNS server addresses to your network.

Note: The DHCP server, DHCP client, DHCP relay and the DHCP local relay features are mutually exclusive. This means that if one of these features are enabled on an interface, the other three features mentioned cannot be enabled on that interface.

Format

enable dhcp_server

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable DHCP server:

```
DGS-3000-26TC:admin#enable dhcp_server
Command: enable dhcp_server

Success.

DGS-3000-26TC:admin#
```

21-2 enable dhcp class

Description

This command is used to enable DHCP class function on the Switch.

Format

enable dhcp class

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable DHCP class:

```
DGS-3000-26TC:admin#enable dhcp class
Command: enable dhcp class

Success.

DGS-3000-26TC:admin#
```

21-3 disable dhcp_server

Description

This command is used to disable the DHCP server function on the switch.

Format

disable dhcp_server

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the Switch's DHCP server:

```
DGS-3000-26TC:admin#disable dhcp_server
Command: disable dhcp_server

Success.

DGS-3000-26TC:admin#
```

21-4 disable dhcp class

Description

This command is used to disable DHCP class function on the Switch.

Format

disable dhcp class

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable DHCP class:


```
DGS-3000-26TC:admin#disable dhcp class
Command: disable dhcp class

Success.

DGS-3000-26TC:admin#
```

21-5 create dhcp excluded_address

Description

This command is used to create a DHCP server exclude address. The DHCP server assumes that all IP addresses in a DHCP pool subnet are available for assigning to DHCP clients. Use this command to specify the IP address that the DHCP server should not assign to clients. This command can be used multiple times in order to define multiple groups of excluded addresses.

Format

create dhcp excluded_address begin_address <ipaddr> end_address <ipaddr>

Parameters

begin_address - Specify the starting address of the IP address range.
<ipaddr> - Enter the starting address of the IP address range.

end_address - Specify the ending address of the IP address range.
<ipaddr> - Enter the ending address of the IP address range.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To specify the IP address that DHCP server should not assign to clients:

```
DGS-3000-26TC:admin#create dhcp excluded_address begin_address 10.10.10.1 end_address
10.10.10.10
Command: create dhcp excluded_address begin_address 10.10.10.1 end_address 10.10.10.10

Success.

DGS-3000-26TC:admin#
```

21-6 create dhcp class

Description

This command is used to create DHCP class.

Format

create dhcp class <class_name 12>

Parameters

<class_name 12> - Enter the DHCP class's name.

Restrictions

Only Administrators and Operators can issue this command.

Example

To create a DHCP class:

```
DGS-3000-26TC:admin#create dhcp class class1
Command: create dhcp class class1

Success.

DGS-3000-26TC:admin#
```

21-7 create dhcp pool

Description

This command is used to create a DHCP pool by specifying a name. After creating a DHCP pool, use other DHCP pool configuration commands to configure parameters for the pool.

Format

create dhcp pool <pool_name 12>

Parameters

<pool_name 12> - Enter the name of the DHCP pool.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a DHCP pool:

```
DGS-3000-26TC:admin#create dhcp pool engineering
Command: create dhcp pool engineering

Success.

DGS-3000-26TC:admin# #
```

21-8 create dhcp pool manual_binding

Description

This command is used to specify the distinct identification of the client in dotted-hexadecimal notation or hardware address.

An address binding is a mapping between the IP address and MAC address of a client. The IP address of a client can be assigned manually by an administrator or assigned automatically from a pool by a DHCP server.

The IP address specified in the manual binding entry must be in a range within that the network uses for the DHCP pool. If the user Specify a conflict IP address, an error message will be returned. If a number of manual binding

entries are created, and the network address for the pool is changed such that conflicts are generated, those manual binding entries which conflict with the new network address will be automatically deleted.

Format

```
create dhcp pool manual_binding <pool_name 12> <ipaddr> hardware_address <macaddr> {type [ethernet | ieee802]}
```

Parameters

<pool_name 12> - Enter the DHCP pool name.

<ipaddr> - Enter the IP address which will be assigned to a specified client.

hardware_address - Specify the hardware MAC address.

<macaddr> - Enter the MAC address here.

type - (Optional) Specify the DHCP pool manual binding type. If it's not specified, the type will be "ethernet".

ethernet - Specify Ethernet type.

ieee802 - Specify IEEE 802 type.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure manual bindings:

```
DGS-3000-26TC:admin#create dhcp pool manual_binding engineering 10.10.10.1 hardware_address
00-80-C8-02-02-02 type ethernet
Command: create dhcp pool manual_binding engineering 10.10.10.1 hardware_address 00-80-C8-02-
02-02 type ethernet

Success.

DGS-3000-26TC:admin#
```

21-9 create dhcp option_profile

Description

This command is used to create a DHCP profile option. Users can create up to 10 DHCP profile options.

Format

```
create dhcp option_profile <profile_name 12>
```

Parameters

<profile_name 12> - Enter the DHCP option profile name here. This name can be up to 12 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a DHCP option profile:

```
DGS-3000-26TC:admin#create dhcp option_profile profile1
Command: create dhcp option_profile profile1

Success.

DGS-3000-26TC:admin#
```

21-10 config dhcp class

Description

This command is used to configure DHCP class options.

Note: This command adds DHCP class options. If a user enables the DHCP class feature, the Switch would check the corresponding part in the DHCP request packet. A user can use the string <multiword 255> or hex <string 255> to add value for this option, the value of the DHCP client packet's option needs to match exactly. Use wildcard character "*" for a partial match of a specified string. Currently it only supports option 60,61, 82 and 125. If an administrator enters a value other than those mentioned, it will give an error prompt message.

Format

```
config dhcp class <class_name 12> [add option <int> [string <multiword 255> | hex <string255>] | delete option <int>]
```

Parameters

<class_name 12> - Enter the DHCP class's name.

add option - Specify to add the DHCP class option.

- <int>** - Option index.
- string** - The character string about DHCP class options.
 - <multiword 255>** - Enter the string.
 - hex** - The hexadecimal of string about DHCP class options.
 - <string255>** - Enter the hexadecimal of the string.

delete option - Specify to select the DHCP class option.

- <int>** - Option index.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add option 60 using hex format and not using wildcard character "*", DHCP client packet's option 60 should have 8 bytes matching the specified hex pattern:

```
DGS-3000-26TC:admin#config dhcp class class1 add option 60 hex 4d53465420352e30
Command: config dhcp class class1 add option 60 hex 4d53465420352e30

Success.

DGS-3000-26TC:admin#
```

To delete DHCP class option 60:

```
DGS-3000-26TC:admin#config dhcp class class1 delete option 60
Command: config dhcp class class1 delete option 60

Success.

DGS-3000-26TC:admin#
```

21-11 config dhcp pool network_addr

Description

This command is used to specify the network for the DHCP pool. The addresses in the network are free to be assigned to the DHCP client. The prefix length Specify the number of bits that comprise the address prefix. The prefix is an alternative way of specifying the network mask of the client. The prefix length must be preceded by a forward slash (/). When the DHCP server receives a request from the client, the server will automatically find a pool to allocate the address. If the request is relayed to the server by the intermediate device, the server will match the gateway IP address carried in the packet against the network of each DHCP pool. The pool which has the longest match will be selected. If the request packet is not through relay, then the server will match the IP address of the IPIF that received the request packet against the network of each DHCP pool.

Format

```
config dhcp pool network_addr <pool_name 12> <network_address>
```

Parameters

<pool_name 12> - Enter the DHCP pool name.

<network_address> - Enter the IP address that the DHCP server may assign to clients.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the address range of the DHCP address pool:

```
DGS-3000-26TC:admin#config dhcp pool network_addr engineering 10.10.10.0/24
Command: config dhcp pool network_addr nyknicks 10.10.10.0/24

Success.

DGS-3000-26TC:admin#
```

21-12 config dhcp pool domain_name

Description

This command is used to specify the domain name for the client if the server allocates the address for the client from this pool. The domain name configured here will be used as the default domain name by the client. By default, the domain name is empty. If the domain name is empty, the domain name information will not be provided to the client.

Format

```
config dhcp pool domain_name <pool_name 12> {<domain_name 64>}
```

Parameters

<pool_name 12> - Enter the DHCP pool name.

<domain_name 64> - (Optional) Enter the domain name of the client.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the domain name option of the DHCP pool:

```
DGS-3000-26TC:admin#config dhcp pool domain_name engineering abc.com
```

```
Command: config dhcp pool domain_name engineering abc.com
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

21-13 config dhcp pool dns_server

Description

This command is used to specify the IP address of a DNS server that is available to a DHCP client. Up to three IP addresses can be specified on one command line. If DNS server is not specified, the DNS server information will not be provided to the client. If this command is input twice for the same pool, the second command will overwrite the first command.

Format

```
config dhcp pool dns_server <pool_name 12> {<ipaddr>} {<ipaddr>} {<ipaddr>}
```

Parameters

<pool_name 12> - Enter the DHCP pool name.

<ipaddr> - (Optional) Enter the IP address of the DNS server. Up to three IP addresses can be specified on one command line.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DNS server's IP address:

```
DGS-3000-26TC:admin#config dhcp pool dns_server engineering 10.10.10.1
```

```
Command: config dhcp pool dns_server engineering 10.10.10.1
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

21-14 config dhcp pool netbios_name_server

Description

This command is used to specify the NetBIOS WINS server that is available to a Microsoft DHCP client. Up to three IP addresses can be specified on one command line.

Windows Internet Naming Service (WINS) is a name resolution service that Microsoft DHCP clients use to correlate host names to IP addresses within a general grouping of networks. If a NetBIOS name server is not specified, the NetBIOS name server information will not be provided to the client. If this command is input twice for the same pool, the second command will overwrite the first command.

Format

config dhcp pool netbios_name_server <pool_name 12> {<ipaddr>} {<ipaddr>} {<ipaddr>}

Parameters

<pool_name 12> - Enter the DHCP pool name.
<ipaddr> - (Optional) Enter the IP address of the WINS server. Up to three IP addresses can be specified on one command line.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a WINS server IP address:

```
DGS-3000-26TC:admin#config dhcp pool netbios_name_server engineering 10.10.10.5
Command: config dhcp pool netbios_name_server engineering 10.10.10.5

Success.

DGS-3000-26TC:admin#
```

21-15 config dhcp pool netbios_node_type

Description

This command is used to specify the NetBIOS node type for a Microsoft DHCP client.

The NetBIOS node type for Microsoft DHCP clients can be one of four settings: broadcast, peer-to-peer, mixed, or hybrid. Use this command to configure a NetBIOS over TCP/IP device that is described in RFC 1001/1002. By default, the NetBIOS node type is broadcast.

Format

config dhcp pool netbios_node_type <pool_name 12> [broadcast | peer_to_peer | mixed | hybrid]

Parameters

<pool_name 12> - Enter the DHCP pool name.
broadcast - Specify the NetBIOS node type for Microsoft DHCP clients as broadcast.
peer_to_peer - Specify the NetBIOS node type for Microsoft DHCP clients as peer_to_peer.
mixed - Specify the NetBIOS node type for Microsoft DHCP clients as mixed.
hybrid - Specify the NetBIOS node type for Microsoft DHCP clients as hybrid.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the NetBIOS node type:

```
DGS-3000-26TC:admin#config dhcp pool netbios_node_type engineering hybrid
Command: config dhcp pool netbios_node_type engineering hybrid

Success.

DGS-3000-26TC:admin#
```

21-16 config dhcp pool default_router

Description

This command is used to specify the IP address of the default router for a DHCP client. Up to three IP addresses can be specified on one command line.

After a DHCP client has booted, the client begins sending packets to its default router. The IP address of the default router should be on the same subnet as the client. If the default router is not specified, the default router information will not be provided to the client. If this command is input twice for the same pool, the second command will overwrite the first command. The default router must be within the range the network defined for the DHCP pool.

Format

```
config dhcp pool default_router <pool_name 12> {<ipaddr>} {<ipaddr>} {<ipaddr>}
```

Parameters

<pool_name 12> - Enter the DHCP pool name.

<ipaddr> - (Optional) Enter the IP address of the default router. Up to three IP addresses can be specified on one command line.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the default router:

```
DGS-3000-26TC:admin#config dhcp pool default_router engineering 10.10.10.10
Command: config dhcp pool default_router engineering 10.10.10.10

Success.

DGS-3000-26TC:admin#
```

21-17 config dhcp pool lease

Description

This command is used to specify the duration of the DHCP pool lease.

By default, each IP address assigned by a DHCP server comes with a one-day lease, which is the amount of time that the address is valid.

Format

config dhcp pool lease <pool_name 12> [<day 0-365> <hour 0-23> <minute 0-59> | infinite]

Parameters

<pool_name 12> - Enter the DHCP pool's name.
<day 0-365> - Enter the number of days of the lease.
<hour 0-23> - Enter the number of hours of the lease.
<minute 0-59> - Enter the number of minutes of the lease.
infinite - Specify a lease of unlimited duration.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the lease of a pool:

```
DGS-3000-26TC:admin#config dhcp pool lease engineering infinite
Command: config dhcp pool lease engineering infinite

Success.

DGS-3000-26TC:admin#
```

21-18 config dhcp pool boot_file

Description

This command is used to specify the name of the file that is used as a boot image.

The boot file is used to store the boot image for the client. The boot image is generally the operating system the client uses to load. If this command is input twice for the same pool, the second command will overwrite the first command. If the bootfile is not specified, the boot file information will not be provided to the client.

Format

config dhcp pool boot_file <pool_name 12> {<file_name 64>}

Parameters

<pool_name 12> - Enter the DHCP pool name.
<file_name 64> - (Optional) Enter the file name of the boot image.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the boot file:

```
DGS-3000-26TC:admin#config dhcp pool boot_file engineering boot.had
Command: config dhcp pool boot_file engineering boot.had

Success.

DGS-3000-26TC:admin#
```

21-19 config dhcp pool next_server

Description

This command is used by the DHCP client boot process, typically a TFTP server. If next server information is not specified, it will not be provided to the client. If this command is input twice for the same pool, the second command will overwrite the first command.

Format

config dhcp pool next_server <pool_name 12> {<ipaddr>}

Parameters

<pool_name 12> - Enter the DHCP pool name.

<ipaddr> - (Optional) Enter the IP address of the next server.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the next server:

```
DGS-3000-26TC:admin#config dhcp pool next_server engineering 192.168.0.1
Command: config dhcp pool next_server engineering 192.168.0.1

Success.

DGS-3000-26TC:admin#
```

21-20 config dhcp ping_packets

Description

This command is used to specify the number of ping packets the DHCP server sends to an IP address before assigning this address to a requesting client.

By default, the DHCP server pings a pool address twice before assigning the address to a DHCP client. If the ping is unanswered, the DHCP server assumes (with a high probability) that the address is not in use and assigns the address to the requesting client. If the ping is answered, the server will discard the current IP address and try another IP address.

Format

config dhcp ping_packets <number 0-10>

Parameters

<number 0-10> - Enter the number of ping packets. 0 means there is no ping test. The default value is 2.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure ping packets:

```
DGS-3000-26TC:admin#config dhcp ping_packets 4
Command: config dhcp ping_packets 4

Success.

DGS-3000-26TC:admin#
```

21-21 config dhcp ping_timeout

Description

This command is used to specify the amount of time the DHCP server must wait before timing out a ping packet. By default, the DHCP server waits 100 milliseconds before timing out a ping packet.

Format

config dhcp ping_timeout <millisecond 10-2000>

Parameters

<millisecond 10-2000> - Enter the amount of time the DHCP server must wait before timing out a ping packet. The default value is 100.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the time out value for ping packets:

```
DGS-3000-26TC:admin#config dhcp ping_timeout 500
Command: config dhcp ping_timeout 500

Success.

DGS-3000-26TC:admin#
```

21-22 config dhcp option_profile

Description

This command is used to configure an option to and from a DHCP server option profile. When you apply this profile to a DHCP pool, the DHCP server will carry the DHCP option(s) in all packets. Each profile can contain up to 10

different DHCP options and can be applied to multiple DHCP pools. However, each DHCP pool can only assign one DHCP option profile. Any option exceeding 312 bytes will be removed. When a user configures the option set by another command (except option 43) or cannot be set like DHCP Message Type, it will return an error message.

Format

```
config dhcp option_profile <profile_name 12> [add option <value 1-254> [string <multiword 255> | hex <string 254>] | delete option <value 1-254>]
```

Parameters

<profile_name 12> - Enter the DHCP server option profile name here. This name can be up to 12 characters long.

add - Specify to add an option to the DHCP server option profile.

option - Specify the option value used.

<value 1-254> - Enter the option value used here. This must be between 1 and 254.

string - Specify the character string associated with the option.

<multiword 255> - Enter the option association string here. This can be up to 255 characters long.

hex - Specify the hexadecimal value of the option string.

<string 254> - Enter the hexadecimal value of the option string here. This can be up to 254 hexadecimal characters long.

delete - Specify to delete an option from the DHCP server option profile.

option - Specify the option value used.

<value 1-254> - Enter the option value used here. This must be between 1 and 254.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add option 69 using HEX format:

```
DGS-3000-26TC:admin#config dhcp option_profile profile1 add option 69 hex c0a800fe
Command: config dhcp option_profile profile1 add option 69 hex c0a800fe

Success.

DGS-3000-26TC:admin#
```

To add option 72 using string format:

```
DGS-3000-26TC:admin#config dhcp option_profile profile1 add option 72 string "192.168.0.254"
Command: config dhcp option_profile profile1 add option 72 string "192.168.0.254"

Success.

DGS-3000-26TC:admin#
```

To delete DHCP option profile option 69:

```
DGS-3000-26TC:admin#config dhcp option_profile profile1 delete option 69
Command: config dhcp option_profile profile1 delete option 69

Success.

DGS-3000-26TC:admin#
```

21-23 config dhcp pool option_43

Description

This command is used to add or delete a DHCP option 43 for a DHCP server pool.

Format

config dhcp pool option_43 <pool_name 12> [add string <multiword 255> | delete]

Parameters

<pool_name 12> - Enter the DHCP pool name here. This name can be up to 12 characters long.

add - Specify to add an option profile to the DHCP pool, configured on this Switch.

string - Specify the DHCP pool option_43 string variable.

<multiword 255> - Enter a multiword 255 long character ASCII string.

delete - Specify to delete an option profile from a DHCP pool, configured on this switch.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add an option profile for DHCP option 43 in pool1:

```
DGS-3000-26TC:admin#config dhcp pool option_43 pool1 add profile1
Command: config dhcp pool option_43 pool1 add profile1

Success.

DGS-3000-26TC:admin#
```

To delete an option profile from a DHCP pool:

```
DGS-3000-26TC:admin#config dhcp pool option_43 pool1 delete profile1
Command: config dhcp pool option_43 pool1 delete profile1

Success.

DGS-3000-26TC:admin#
```

21-24 config dhcp pool option_profile

Description

This command is used to apply an option profile to a specific DHCP pool.

Format

config dhcp pool option_profile <pool_name 12> [add | delete] <profile_name 12>

Parameters

<pool_name 12> - Enter the DHCP pool name here. This name can be up to 12 characters long.

add - Specify to add an option profile to a DHCP pool, configured on this switch.

delete - Specify to delete an option profile from a DHCP pool, configured on this switch.

<profile_name 12> - Enter the DHCP server option profile name here. This name can be up to 12 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add an option profile for DHCP profile1 in pool1:

```
DGS-3000-26TC:admin#config dhcp pool option_profile pool1 add profile1
Command: config dhcp pool option_profile pool1 add profile1

Success.

DGS-3000-26TC:admin#
```

To delete an option profile from a DHCP pool:

```
DGS-3000-26TC:admin#config dhcp pool option_profile pool1 delete profile1
Command: config dhcp pool option_profile pool1 delete profile1

Success.

DGS-3000-26TC:admin#
```

21-25 config dhcp pool class

Description

This command is used to configure the address range of a specific DHCP pool class. User can only configure one address range per DHCP class.

Format

config dhcp pool class <pool_name 12> [add | delete] <class_name 12> {begin_address <ipaddr> end_address <ipaddr>}

Parameters

<pool_name 12> - Enter the DHCP pool name.

add - Add an address range to the Switch's DHCP pool class table.

delete - Delete an address range to the Switch's DHCP pool class table.

<class_name12> - Enter DHCP class's name. The class must be created through the **create dhcp class** command.

begin_address - (Optional) The beginning IP address of the range.

<ipaddr> - (Optional) Enter the IP address.

end_address - (Optional) The end IP address of the range

<ipaddr> - Enter the IP address.

Restrictions

Administrators, Operators and Power-Users can issue this command.

Example

To add an address range for DHCP class1 in pool1, and display DHCP pool information:

```
DGS-3000-26TC:admin#config dhcp pool class pool1 add class1 begin_address 20.0.0.20
end_address 20.0.0.50
Command: config dhcp pool class pool1 add class1 begin_address 20.0.0.20 end_address
20.0.0.50

Success.

DGS-3000-26TC:admin#
```

21-26 clear dhcp binding

Description

This command is used to clear a binding entry or all binding entries in a pool or clears all binding entries in all pools. Note that this command will not clear the dynamic binding entry which matches a manual binding entry.

Format

clear dhcp binding [<pool_name 12> [<ipaddr> | all] | all]

Parameters

<pool_name 12> - Enter the DHCP pool name to clear.
<ipaddr> - Enter the IP address to clear.
all - Specify to clear all IP addresses for the specified pool.

all - Specify to clear all binding entries in all pools

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear dynamic binding entries in the pool named "engineering":

```
DGS-3000-26TC:admin#clear dhcp binding engineering 10.48.74.121
Command: clear dhcp binding engineering 10.48.74.121

Success.

DGS-3000-26TC:admin#
```

21-27 clear dhcp conflict_ip

Description

This command is used to clear an entry or all entries from the conflict IP database.

Format

clear dhcp conflict_ip [<ipaddr> | all]

Parameters

<ipaddr> - Enter the IP address to be cleared.
all - Specify that all IP addresses will be cleared.

Restrictions

None.

Example

To clear an IP address 10.20.3.4 from the conflict database:

```
DGS-3000-26TC:admin#clear dhcp conflict_ip 10.20.3.4
Command: clear dhcp conflict_ip 10.20.3.4

Success.

DGS-3000-26TC:admin#
```

21-28 delete dhcp excluded_address

Description

This command is used to delete a DHCP server exclude address.

Format

delete dhcp excluded_address [begin_address <ipaddr> end_address <ipaddr> | all]

Parameters

begin_address - Specify the starting address of the IP address range.
<ipaddr> - Enter the starting address of the IP address range.
end_address - Specify the ending address of the IP address range.
<ipaddr> - Enter the ending address of the IP address range.
all - Specify to delete all IP addresses.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a DHCP server exclude address:

```
DGS-3000-26TC:admin#delete dhcp excluded_address begin_address 10.10.10.1 end_address
10.10.10.10
Command: delete dhcp excluded_address begin_address 10.10.10.1 end_address 10.10.10.10

Success.

DGS-3000-26TC:admin#
```


21-29 delete dhcp pool

Description

This command is used to delete a DHCP pool.

Format

delete dhcp pool [<pool_name 12> | all]

Parameters

<pool_name 12> - Enter the name of the DHCP pool.

all - Specify to delete all the DHCP pools.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a DHCP pool:

```
DGS-3000-26TC:admin#delete dhcp pool nyknicks
Command: delete dhcp pool nyknicks

Success.

DGS-3000-26TC:admin#
```

21-30 delete dhcp pool manual_binding

Description

This command is used to delete DHCP server manual binding.

Format

delete dhcp pool manual_binding <pool_name 12> [<ipaddr> | all]

Parameters

<pool_name 12> - Enter the DHCP pool name.

<ipaddr> - Enter the IP address which will be assigned to a specified client.

all - Specify to delete all IP addresses.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete DHCP server manual binding:

```
DGS-3000-26TC:admin#delete dhcp pool manual_binding engineering 10.10.10.1
Command: delete dhcp pool manual_binding engineering 10.10.10.1

Success.

DGS-3000-26TC:admin#
```

21-31 delete dhcp option_profile

Description

This command is used to delete a DHCP option profile.

Format

delete dhcp option_profile <profile_name 12>

Parameters

<profile_name 12> - Enter the DHCP server option profile name here. This name can be up to 12 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a DHCP option profile:

```
DGS-3000-26TC:admin#delete dhcp option_profile profile1
Command: delete dhcp option_profile profile1

Success.

DGS-3000-26TC:admin#
```

21-32 delete dhcp class

Description

This command is used to delete a DHCP class.

Format

delete dhcp class <class_name 12>

Parameters

<class_name 12> - Enter the DHCP class's name.

Restrictions

Only Administrators and Operators can issue this command.

Example

To delete DHCP class:

```
DGS-3000-26TC:admin#delete dhcp class class1
Command: delete dhcp class class1

Success.

DGS-3000-26TC:admin#
```

21-33 show dhcp excluded_address

Description

This command is used to display the groups of IP addresses which are excluded from being a legal assigned IP address.

Format

show dhcp excluded_address

Parameters

None.

Restrictions

None.

Example

To display the DHCP server excluded addresses:

```
DGS-3000-26TC:admin#show dhcp excluded_address
Command: show dhcp excluded_address

Index  Begin Address  End Address
-----  -
1      192.168.0.1    192.168.0.100
2      10.10.10.10    10.10.10.11

Total Entries : 2

DGS-3000-26TC:admin#
```

21-34 show dhcp binding

Description

This command is used to display dynamic binding entries.

Format

show dhcp binding {<pool_name 12>}

Parameters

<pool_name 12> - (Optional) Enter a DHCP pool name.

Restrictions

None.

Example

To display dynamic binding entries for “engineering”:

```
DGS-3000-26TC:admin#show dhcp binding engineering
Command: show dhcp binding engineering

Pool Name      IP Address      Hardware Address  Type      Status      Lifetime
-----
engineering    192.168.0.1     00-80-C8-08-13-88 Ethernet   Manual      86400
engineering    192.168.0.2     00-80-C8-08-13-99 Ethernet   Automatic  86400
engineering    192.168.0.3     00-80-C8-08-13-A0 Ethernet   Automatic  86400
engineering    192.168.0.4     00-80-C8-08-13-B0 Ethernet   Automatic  86400

Total Entries: 4

DGS-3000-26TC:admin#
```

21-35 show dhcp pool

Description

This command is used to display the information for DHCP pool. If pool name is not specified, information for all pools will be displayed.

Format

show dhcp pool {<pool_name 12>}

Parameters

<pool_name 12> - (Optional) Enter the DHCP pool name.

Restrictions

None.

Example

To display the current DHCP pool information for “engineering”:

```

DGS-3000-26TC:admin#show dhcp pool engineering
Command: show dhcp pool engineering

Pool Name           :engineering
Network Address     :10.10.10.0/24
Domain Name         :abc.com
DNS Server          :10.10.10.1
NetBIOS Name Server :10.10.10.5
NetBIOS Node Type   :Hybrid
Default Router      :10.10.10.10
Pool Lease          :Infinite
Boot File           :boot.had
Next Server         :192.168.0.1
Option 43           :
Option Profile      :
DHCP Class  Begin Address  End Address
-----  -
Total Entries: 1

DGS-3000-26TC:admin#

```

21-36 show dhcp pool manual_binding

Description

This command is used to display the configured manual binding entries.

Format

```
show dhcp pool manual_binding {<pool_name 12>}
```

Parameters

```
<pool_name 12> - (Optional) Enter the DHCP pool name.
```

Restrictions

None.

Example

To display the configured manual binding entries:

```
DGS-3000-26TC:admin#show dhcp pool manual_binding
Command: show dhcp pool manual_binding

Pool Name      IP Address      Hardware Address  Type
-----
p1             192.168.0.1     00-80-C8-08-13-88 Ethernet
p1             192.168.0.2     00-80-C8-08-13-99 Ethernet

Total Entries : 2

DGS-3000-26TC:admin#
```

21-37 show dhcp_server

Description

This command is used to display the current DHCP server configuration.

Format

show dhcp_server

Parameters

None.

Restrictions

None.

Example

To display the DHCP server status:

```
DGS-3000-26TC:admin#show dhcp_server
Command: show dhcp_server

DHCP Server Global State: Disabled
Ping Packet Number       : 2
Ping Timeout              : 100 ms

DGS-3000-26TC:admin#
```

21-38 show dhcp conflict_ip

Description

This command is used to display the IP address that has been identified as being in conflict.

The DHCP server will use ping packet to determine whether an IP address is conflicting with other hosts before binding this IP. The IP address which has been identified in conflict will be moved to the conflict IP database. The system will not attempt to bind the IP address in the conflict IP database unless the user clears it from the conflict IP database.

Format**show dhcp conflict_ip {<ipaddr>}****Parameters****<ipaddr>** - (Optional) Enter the IP address to be displayed.**Restrictions**

None.

Example

To display the entries in the DHCP conflict IP database:

```
DGS-3000-26TC:admin#show dhcp conflict_ip
Command: show dhcp conflict_ip

  IP Address      Detection Method   Detection Time
  -----
172.16.1.32      Ping              2007/08/30 17:06:59
172.16.1.32      Gratuitous ARP    2007/09/10 19:38:01

DGS-3000-26TC:admin#
```

21-39 **show dhcp option_profile****Description**

This command is used to display the current DHCP option profile configuration.

Format**show dhcp option_profile {<profile_name 12>}****Parameters****<profile_name 12>** - (Optional) Enter the DHCP server option profile name here. This name can be up to 12 characters long.

If no parameter is specified, the system will display all DHCP option profile configurations.

Restrictions

None.

Example

To display the current DHCP option profile configuration:

```

DGS-3000-26TC:admin#show dhcp option_profile
Command: show dhcp option_profile

DHCP Option Profile Name      : profile1
Option  Type      Value
-----  -
69      hex      c0a800fe
72      string   192.168.0.254

Total Entries: 1

DGS-3000-26TC:admin#

```

21-40 show dhcp class

Description

This command is used to display the current DHCP class configuration.

Format

```
show dhcp class {<class_name 12>}
```

Parameters

<class_name 12> - (Optional) Enter the DHCP class's name.

Restrictions

None.

Example

To display the current DHCP class configuration:

```

DGS-3000-26TC:admin#show dhcp class
Command: show dhcp class

DHCP Class Status      : Disabled

DHCP Class Name        : class1
Option  Type      Value
-----  -
60      hex      4d53465420352e30

Total Entries: 1

DGS-3000-26TC:admin#

```


Chapter 22 DHCP Server Screening Command List

create filter dhcpv6_server permit sip <ipv6addr> ports [<portlist> all]
create filter icmpv6_ra_all_node permit sip <ipv6addr> ports [<portlist> all]
config filter dhcp_server [add permit server_ip <ipaddr> {client_mac <macaddr>} ports [<portlist> all] delete permit server_ip <ipaddr> {client_mac <macaddr>} ports [<portlist> all] ports [<portlist> all] state [enable disable] illegal_server_log_suppress_duration [1min 5min 30min] trap_log [enable disable]]
config filter dhcpv6_server log [enable disable]
config filter dhcpv6_server ports [<portlist> all] state [enable disable]
config filter dhcpv6_server trap [enable disable]
config filter icmpv6_ra_all_node log [enable disable]
config filter icmpv6_ra_all_node ports [<portlist> all] state [enable disable]
config filter icmpv6_ra_all_node trap [enable disable]
delete filter dhcpv6_server permit sip <ipv6addr>
delete filter icmpv6_ra_all_node permit sip <ipv6addr>
show filter dhcp_server
show filter dhcpv6_server
show filter icmpv6_ra_all_node

22-1 create filter dhcpv6_server permit sip

Description

This command is used to create a permit entry for DHCPv6 server filtering. The specific DHCPv6 server packets, with the source IPv6 address, will be forwarded on the specified port(s).

Format

create filter dhcpv6_server permit sip <ipv6addr> ports [<portlist> | all]

Parameters

<ipv6addr> - Enter the source address of the entry which will be created into the Filter DHCPv6 server forward list.
ports - Specify the list of ports used for this configuration.
<portlist> - Enter the list of ports, used for this configuration, here.
all - Specify that all ports will be used for this configuration.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a Filter DHCPv6 server permit entry on port 5:

```
DGS-3000-26TC:admin#create filter dhcpv6_server permit sip 2200::5 ports 5
Command: create filter dhcpv6_server permit sip 2200::5 ports 5

Success.

DGS-3000-26TC:admin#
```

22-2 create filter icmpv6_ra_all_node permit sip

Description

This command is used to create a permit entry. The specific ICMPv6 RA All-nodes packets with source IPv6 address can be forwarded on the specified port(s).

Format

create filter icmpv6_ra_all_node permit sip <ipv6addr> ports [<portlist> | all]

Parameters

<ipv6addr> - Enter the source address of entry which will be created into the Filter ICMPv6 RA All-nodes forward list.

ports - Specify a list of ports which apply to icmpv6_ra_all_node permit entry.

<portlist> - Enter a range of ports that the permit entry will apply to.

all - Specify all the existing ports that apply to the permit entry.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a filter ICMPv6 RA All-nodes permit entry on port 5:

```
DGS-3000-26TC:admin#create filter icmpv6_ra_all_node permit sip 2200::5 ports 5
Command: create filter icmpv6_ra_all_node permit sip 2200::5 ports 5

Success.

DGS-3000-26TC:admin#
```

22-3 config filter dhcp_server

Description

This command is used to configure filters on a DHCP server.

You can use DHCP Filtering as a security measure against unauthorized DHCP servers. A known attack can occur when an unauthorized DHCP server responds to a client that is requesting an IP address. The unauthorized server can configure the gateway for the client to be equal to the IP address of the server. At that point, the client sends all of its IP traffic destined to other networks to the unauthorized machine, giving the attacker the possibility of filtering traffic for passwords or employing a 'man-in-the-middle' attack.

DHCP filtering works by allowing the administrator to configure each port as a trusted or untrusted port. The port that has the authorized DHCP server should be configured as a trusted port. Any DHCP responses received on a trusted port will be forwarded. All other ports should be configured as untrusted. Any DHCP (or BOOTP) responses received on the ingress side will be discarded.

This command has three purposes:

1. Specify to filter all DHCP server packets on the specific port.
2. Specify to allow some DHCP server packets with pre-defined server IP addresses.
3. Deny all DHCPOFFER requests by using the default DHCP Server filtering method to specify explicit "permit" rules for the (DHCP server IP, client's MAC address, and port list from the DHCP server). With this function, we can restrict the DHCP server to service specific DHCP clients. This is useful when two DHCP servers are present on the network, one of them provides the private IP address, and the other provides the public IP address.

Enabling DHCP server port state filtering will create one access profile and create one access rule per port (UDP port = 67). Filter commands in this file will share the same access profile.

Addition of a permit DHCP entry will create one access profile and create one access rule. Filtering commands in this file will share the same access profile.

Format

```
config filter dhcp_server [add permit server_ip <ipaddr> {client_mac <macaddr>} ports [<portlist> | all] |
delete permit server_ip <ipaddr> {client_mac <macaddr>} ports [<portlist> | all] | ports [<portlist> | all]
state [enable | disable] | illegal_server_log_suppress_duration [1min | 5min | 30min] | trap_log [enable |
disable]]
```

Parameters

add	- Specify to add a DHCP filter.
permit	- Specify a permission DHCP filter.
server_ip	- The IP address of the DHCP server to be filtered.
<ipaddr>	- Enter the DHCP server IP address here.
client_mac	- (Optional) The MAC address of the DHCP client.
<macaddr>	- Enter the DHCP client MAC address here.
ports	- The port number of filter DHCP server.
<portlist>	- Enter the list of ports to be configured here.
all	- Specify that all the port will be used for this configuration.

delete	- Specify to delete the DHCP filter.
permit	- Specify the permission DHCP filter.
server_ip	- The IP address of the DHCP server to be filtered.
<ipaddr>	- Enter the DHCP server IP address here.
client_mac	- (Optional) The MAC address of the DHCP client.
<macaddr>	- Enter the DHCP client MAC address here.
ports	- The port number of filter DHCP server.
<portlist>	- Enter the list of ports to be configured here.
all	- Specify that all the port will be used for this configuration.

state	- Specify to enable or disable the filter DHCP server state.
enable	- Specify that the filter DHCP server state will be enabled.
disable	- Specify that the filter DHCP server state will be disabled.

illegal_server_log_suppress_duration	- Specify the same illegal DHCP server IP address detected will be logged only once within the duration. The default value is 5 minutes.
1min	- Specify that illegal server log suppress duration value will be set to 1 minute.
5min	- Specify that illegal server log suppress duration value will be set to 5 minutes.
30min	- Specify that illegal server log suppress duration value will be set to 30 minutes.

trap_log	- Specify to enable or disable the trap and log function.
enable	- Enables the trap and log function.
disable	- Disables the trap and log function.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add an entry from the DHCP server filter list in the Switch's database:

```
DGS-3000-26TC:admin#config filter dhcp_server add permit server_ip 10.90.90.20 ports 1-20
Command: config filter dhcp_server add permit server_ip 10.90.90.20 ports 1-20

Success.

DGS-3000-26TC:admin#
```

```
DGS-3000-26TC:admin#config filter dhcp_server ports 1-10 state enable
Command: config filter dhcp_server ports 1-10 state enable

Success.

DGS-3000-26TC:admin#
```

```
DGS-3000-26TC:admin# config filter dhcp_server add permit_server_ip 10.1.1.1 client_mac 00-
00-00-00-00-01 port 1-26
Command: config filter dhcp_server add permit_server_ip 10.1.1.1 client_mac 00-00-00-00-00-01
port 1-26

Success.

DGS-3000-26TC:admin#
```

22-4 config filter dhcpv6_server log

Description

This command is used to enable or disable the Filter DHCPv6 server log state.

Format

config filter dhcpv6_server log [enable | disable]

Parameters

enable - Specify that the log for the Filter DHCPv6 server will be enabled. The log for Filter DHCPv6 server will be generated.

disable - Specify that the log for the Filter DHCPv6 server will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the Filter DHCPv6 Server log state:

```
DGS-3000-26TC:admin#config filter dhcpv6_server log enable
Command: config filter dhcpv6_server log enable

Success.

DGS-3000-26TC:admin#
```

22-5 config filter dhcpv6_server ports

Description

This command is used to configure the state of filter DHCPv6 server packets on the switch. The filter DHCPv6 server function is used to filter the DHCPv6 server packets on the specific port(s) and receive the trust packets from the specific source. This feature can be protected network usable when a malicious host sends the DHCPv6 server packets.

Format

config filter dhcpv6_server ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter a range of ports to configure the Filter DHCPv6 server state.
all - Specify all the existing ports on the switch for configuring the Filter DHCPv6 server state.
state - Specify whether the port's filter DHCPv6 server function is enabled or disabled.
 enable - Specify that the filter option is enabled.
 disable - Specify that the filter option is disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure enabling all port states:

```
DGS-3000-26TC:admin#config filter dhcpv6_server ports all state enable
Command: config filter dhcpv6_server ports all state enable

Success.

DGS-3000-26TC:admin#
```

22-6 config filter dhcpv6_server trap

Description

This command is used to enable or disable the filter DHCPv6 server trap state.

Format

config filter dhcpv6_server trap [enable | disable]

Parameters

enable - Specify that the trap for the filter DHCPv6 server will be enabled. The trap for filter DHCPv6 server will be sent out.
disable - Specify that the trap for the filter DHCPv6 server will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the filter DHCPv6 server trap state:

```
DGS-3000-26TC:admin#config filter dhcpv6_server trap enable
Command: config filter dhcpv6_server trap enable

Success.

DGS-3000-26TC:admin#
```

22-7 config filter icmpv6_ra_all_node log

Description

This command is used to enable or disable the filter ICMPv6 RA All-nodes log state.

Format

config filter icmpv6_ra_all_node log [enable | disable]

Parameters

enable - Specify that the log for the filter ICMPv6 RA will be enabled. The log for filter ICMPv6 RA all-nodes will be generated.

disable - Specify that the log for the filter ICMPv6 RA will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the filter ICMPv6 RA all-nodes log state:

```
DGS-3000-26TC:admin#config filter icmpv6_ra_all_node log enable
Command: config filter icmpv6_ra_all_node log enable

Success.

DGS-3000-26TC:admin#
```

22-8 config filter icmpv6_ra_all_node ports

Description

This command is used to configure the state of the filter ICMPv6 RA all-nodes packets on the switch. The filter ICMPv6 RA all-nodes function is used to filter the ICMPv6 RA all-nodes packets on the specific port(s) and receive the trust packets from the specific source. This feature can be protected network usable when a malicious host sends ICMPv6 RA all-nodes packets.

NOTE: It only needs to filter the packet of which the destination address is the all-nodes multicast address (FF02::1).

Format

config filter icmpv6_ra_all_node ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter a range of ports for configuring the Filter icmpv6_ra_all_node state.
all - Specify all the existing ports on the switch for configuring the Filter icmpv6_ra_all_node state.
state - Specify whether the port's filter ICMPv6 RA all-nodes packets function is enabled or disabled.
enable - Specify that the filter ICMPv6 RA all-nodes packets function is be enabled.
disable - Specify that the filter ICMPv6 RA all-nodes packets function is be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the filter ICMPv6 RA all-nodes state for port 1:

```
DGS-3000-26TC:admin#config filter icmpv6_ra_all_node ports 1 state enable
Command: config filter icmpv6_ra_all_node ports 1 state enable

Success.

DGS-3000-26TC:admin#
```

22-9 config filter icmpv6_ra_all_node trap**Description**

This command is used to enable or disable the filter ICMPv6 RA all-nodes trap state. If the ICMPv6 RA all-nodes server trap state is disabled, no trap will be sent out.

Format

config filter icmpv6_ra_all_node trap [enable | disable]

Parameters

enable - Specify that the trap for the filter ICMPv6 RA all-nodes will be enabled. The trap for filter ICMPv6 RA all-nodes will be sent out.
disable - Specify that the trap for the filter ICMPv6 RA all-nodes will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the filter ICMPv6 RA all-nodes trap state:

```
DGS-3000-26TC:admin#config filter icmpv6_ra_all_node trap enable
Command: config filter icmpv6_ra_all_node trap enable

Success.

DGS-3000-26TC:admin#
```

22-10 delete filter dhcpv6_server permit sip

Description

This command is used to delete a filter DHCPv6 server permit entry.

Format

delete filter dhcpv6_server permit sip <ipv6addr>

Parameters

<ipv6addr> - Enter the source IPv6 address of the entry here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete permit entry from the filter DHCPv6 server forward list:

```
DGS-3000-26TC:admin#delete filter dhcpv6_server permit sip 2200::4
Command: delete filter dhcpv6_server permit sip 2200::4

Success.

DGS-3000-26TC:admin#
```

22-11 delete filter icmpv6_ra_all_node permit sip

Description

This command is used to delete a filter ICMPv6 RA all-nodes permit entry.

Format

delete filter icmpv6_ra_all_node permit sip <ipv6addr>

Parameters

<ipv6addr> - Enter the source IPv6 address of the entry which will be deleted in the filter ICMPv6 RA all-nodes forward list.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete permit entry from the filter ICMPv6 RA all-nodes forward list:

```
DGS-3000-26TC:admin#delete filter icmpv6_ra_all_node permit sip 2200::4
Command: delete filter icmpv6_ra_all_node permit sip 2200::4

Success.

DGS-3000-26TC:admin#
```

22-12 show filter dhcp_server

Description

This command is used to display the DHCP server filter list created on the Switch.

Format

show filter dhcp_server

Parameters

None.

Restrictions

None.

Example

To display the DHCP server/client filter list created on the Switch:

```
DGS-3000-26TC:admin#show filter dhcp_server
Command: show filter dhcp_server

Enabled Ports: 1-10
Trap & Log State: Disabled
Illegal Server Log Suppress Duration:5 minutes

Permit DHCP Server/Client Table:
Server IP Address Client MAC Address Port
-----
10.90.90.20      All Client MAC      1-20

Total Entries: 1

DGS-3000-26TC:admin#
```

22-13 show filter dhcpv6_server

Description

This command is used to display the filter DHCPv6 server information.

Format

```
show filter dhcpv6_server
```

Parameters

None.

Restrictions

None.

Example

To display filter DHCPv6 server information:

```
DGS-3000-26TC:admin#show filter dhcpv6_server
Command: show filter dhcpv6_server

Enabled ports:1-8
Trap State: Disabled
Log State: Enabled

Permit Source Address Table:
Source IP Address                Port
-----
Total Entries:0

DGS-3000-26TC:admin#
```

22-14 show filter icmpv6_ra_all_node

Description

This command is used to display the filter ICMPv6 RA all-nodes information.

Format

```
show filter icmpv6_ra_all_node
```

Parameters

None.

Restrictions

None.

Example

To display filter ICMPv6 RA all-nodes information:

```
DGS-3000-26TC:admin#show filter icmpv6_ra_all_node
```

```
Command: show filter icmpv6_ra_all_node
```

```
Enabled ports:1
```

```
Trap State: Disabled
```

```
Log State: Enabled
```

```
Permit Source Address Table:
```

Source IP Address	Port
-----	-----
3FFE::1	1

```
Total Entries:1
```

```
DGS-3000-26TC:admin#
```

Chapter 23 DHCPv6 Relay Command List

enable dhcpv6_relay
enable dhcpv6_local_relay
disable dhcpv6_relay
disable dhcpv6_local_relay
config dhcpv6_relay [add delete] ipif <ipif_name 12> <ipv6addr>
config dhcpv6_relay hop_count <value 1-32>
config dhcpv6_relay ipif [<ipif_name 12> all] state [enable disable]
config dhcpv6_local_relay vlan [<vlan_name 32> vlanid <vlan_id>] state [enable disable]
config dhcpv6_relay option_18 {state [enable disable] check [enable disable] interface_id [default cid vendor1]}(1)
config dhcpv6_relay option_37 {state [enable disable] check [enable disable] remote_id [default cid_with_user_define <desc 128> user_define <desc 128> vendor1]}(1)
show dhcpv6_relay {ipif <ipif_name 12>}
show dhcpv6_local_relay

23-1 enable dhcpv6_relay

Description

This command is used to enable the DHCPv6 relay function on the Switch.

Format

```
enable dhcpv6_relay
```

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCPv6 relay global state to enable:

```
DGS-3000-26TC:admin# enable dhcpv6_relay
Command: enable dhcpv6_relay

Success.

DGS-3000-26TC:admin#
```

23-2 disable dhcpv6_relay

Description

This command is used to disable the DHCPv6 relay function on the Switch.

Format

disable dhcpv6_relay

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCPv6 relay global state to disable:

```
DGS-3000-26TC:admin# disable dhcpv6_relay
Command: disable dhcpv6_relay

Success.

DGS-3000-26TC:admin#
```

23-3 enable dhcpv6_local_relay

Description

This command is used to enable the DHCPv6 local relay function of the Switch.

Format

enable dhcpv6_local_relay

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the DHCPv6 local relay global state to enable:

```
DGS-3000-26TC:admin# enable dhcpv6_local_relay
Command: enable dhcpv6_local_relay

Success.

DGS-3000-26TC:admin#
```

23-4 disable dhcpv6_local_relay

Description

This command is used to disable the DHCPv6 local relay function of the switch

Format**disable dhcpv6_local_relay****Parameters**

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the DHCPv6 local relay global state to disable:

```
DGS-3000-26TC:admin# disable dhcpv6_local_relay
Command: disable dhcpv6_local_relay

Success.

DGS-3000-26TC:admin#
```

23-5 config dhcpv6_relay**Description**

This command is used to add/delete an IPv6 address which is a destination to forward (relay) DHCPv6 packets.

Format**config dhcpv6_relay [add | delete] ipif <ipif_name 12> <ipv6addr>****Parameters****add** - Add an IPv6 destination to the DHCPv6 relay table.**delete** - Delete an IPv6 destination from the DHCPv6 relay table.**ipif** - The name of the IP interface in which DHCPv6 relay is to be enabled.**<ipif_name 12>** - Enter the IP interface name here. This name can be up to 12 characters long.**<ipv6addr>** - Enter the DHCPv6 server IP address.**Restrictions**

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a DHCPv6 server to the relay table:

```
DGS-3000-26TC:admin# config dhcpv6_relay add ipif System 2001:DB8:1234:0:218:FEFF:FEFB:CC0E
Command: config dhcpv6_relay add ipif System 2001:DB8:1234:0:218:FEFF:FEFB:CC0E

Success.

DGS-3000-26TC:admin#
```

23-6 config dhcpv6_relay hop_count

Description

This command is used to configure the DHCPv6 relay hop_count of the switch.

Format

config dhcpv6_relay hop_count <value 1-32>

Parameters

<value 1-32> - Enter the number of relay agents that have relayed this message. The default value is 4.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the maximum hops of a DHCPv6 relay packet could be transferred to 4:

```
DGS-3000-26TC:admin# config dhcpv6_relay hop_count 4
Command: config dhcpv6_relay hop_count 4

Success.

DGS-3000-26TC:admin#
```

23-7 config dhcpv6_relay ipif

Description

This command is used to configure the DHCPv6 relay state of one specific interface or all interfaces.

Format

config dhcpv6_relay ipif [<ipif_name 12> | all] state [enable | disable]

Parameters

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.

all - Specify that all the configured IP interfaces will be used.

state - Specify if the DHCPv6 relay state will be enabled or disabled.

enable - Choose this parameter to enable the DHCPv6 relay state of the interface.

disable - Choose this parameter to disable the DHCPv6 relay state of the interface.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCPv6 relay state of the System interface to enable:

```
DGS-3000-26TC:admin# config dhcpv6_relay ipif System state enable
Command: config dhcpv6_relay ipif System state enable

Success.

DGS-3000-26TC:admin#
```

23-8 config dhcpv6_local_relay vlan

Description

This command is used to enable or disable the DHCPv6 local relay function for a specified VLAN.

Format

config dhcpv6_local_relay vlan [<vlan_name 32> |vlanid <vlan_id>] state [enable | disable]

Parameters

<vlan_name 32> - Enter the VLAN name that will be used for this configuration

vlanid - Specify the VLAN ID that will be used for this configuration. It supports up to 48 VLANs.

<vlan_id> - Enter the VLAN ID that will be used for this configuration. It supports up to 48 VLANs.

state - Specify the DHCPv6 local relay function's state for the specified VLAN.

enable - Specify to enable the DHCPv6 local relay function's state for the specified VLAN.

disable - Specify to disable the DHCPv6 local relay function's state for the specified VLAN.

Restrictions

Only Administrators, Operators, and Power-Users can issue this command.

Example

To enable the DHCPv6 local relay function for the default VLAN:

```
DGS-3000-26TC:admin# config dhcpv6_local_relay vlan default state enable
Command: config dhcpv6_local_relay vlan default state enable

Success.

DGS-3000-26TC:admin#
```

23-9 config dhcpv6_relay option_18

Description

This command is used to configure the DHCPv6 relay agent information for processing option 18 within the switch.

Format

config dhcpv6_relay option_18 {state [enable | disable] | check [enable | disable] | interface_id [default | cid | vendor1]}(1)

Parameters

state - Specify the DHCPv6 relay Option 18's state.

enable - Specify that the DHCPv6 relay Option 18's state is enabled. When the state is enabled, the DHCP

packet will be inserted with the Option 18 field before being relayed to server.

disable - Specify that the DHCPv6 relay Option 18's state is disabled. When the state is disabled, the DHCP packet will be relayed directly to server without further checks and inserted with the Option 18.

check - Specify whether or not to check for the Option 18 field in incoming packets. If the incoming packets contains an Option 18 field, then it will be dropped.

enable - Specify to enable the check function.

disable - Specify to disable the check function.

interface_id - Specify the format of the Interface ID.

default - Specify to use the default formation for the Interface ID.

F01	F02
Sub Type	VLAN ID

1 byte 2 bytes

F01: Sub-type is 1 by default.

F02: VLAN ID. The incoming VLAN ID of the DHCP client packet.

cid - Specify to use the CID format for the Interface ID.

F01	F02	F03	F04
Sub Type	VLAN ID	Module ID	Port ID

1 byte 2 byte 1 byte 1 byte

F01: Sub-option type 2.

F02: VLAN ID. The VLAN ID of the incoming DHCP client packet.

F03: Module ID. For a stand-alone switch, it is 0. For a stacked switch, it is the box ID of that switch.

F04: Port ID. The port number of the incoming DHCP client packet. The port number starts from 1.

vendor1 - Specify to use the Vendor 1 format for the Interface ID.

F01	F02	F03	F04	F05	F06	F07	F08
E (0x45)	t (0x74)	h (0x68)	e (0x65)	r (0x72)	n (0x65)	e (0x65)	t (0x74)
1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

F09	F10	F11	F12	F13	F14	F15	F16
Chassis ID	/ (0x2F)	0 (0x30)	/ (0x2F)	Port Number	: (0x3A)	cvlan	. (0x2E)
1~2 bytes	1 byte	1 byte	1 byte	1~2 bytes	1 byte	1~4 bytes	1 byte

F17	F18	F19	F20	F21	F22	F23	F24
0 (0x30)	Space (0x20)	System Name	/ (0x2F)	0 (0x30)	/ (0x2F)	0 (0x30)	/ (0x2F)
1 byte	1 byte	1~128 bytes	1 byte	1 byte	1 byte	1 byte	1 byte

F25	F26	F27	F28	F29
Chassis ID	/ (0x2F)	0 (0x30)	/ (0x2F)	Port Number
1~2 bytes	1 byte	1 byte	1 byte	1~2 bytes

F01: Character 'E'.

F02: Character 't'.

F03: Character 'h'.

F04: Character 'e'.

F05: Character 'r'.

F06: Character 'n'.

F07: Character 'e'.

F08: Character 't'.

F09: Chassis ID. The number of the chassis. The format is ASCII string.

1. For a stand-alone switch, it is 0.

2. For a stacked switch, it is the box ID of that switch.

F10: Slash (/).

F11: ASCII format string '0'.

F12: Slash (/).

F13: Port number. The incoming port number DHCP client packets. ASCII format string.

F14: Colon (:)

F15: 'cvlan' is the client's VLAN ID. The value ranges from 1 to 4094. ASCII format string.

F16: Dot (.)

F17: ASCII format string '0'.

F18: Space.

F19: System name of the Switch. **NOTE:** If the System name exceeds 128 bytes, it will only use the first 128 bytes.

F20: Slash (/).

F21: ASCII format string '0'.

F22: Slash (/).

F23: ASCII format string '0'.

F24: Slash (/).

F25: Chassis ID. This value is the same as F09.

F26: Slash (/).

F27: ASCII format string '0'.

F28: Slash (/).

F29: Port number. The incoming port number of DHCP client packets. ASCII format string.

Restrictions

Only Administrators, Operators, and Power-Users can issue this command.

Example

To configure the DHCPv6 relay option 18:

```
DGS-3000-26TC:admin#config dhcpv6_relay option_18 state enable
Command: config dhcpv6_relay option_18 state enable

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_18 check enable
Command: config dhcpv6_relay option_18 check enable

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_18 interface_id default
Command: config dhcpv6_relay option_18 interface_id default

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_18 interface_id cid
Command: config dhcpv6_relay option_18 interface_id cid

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_18 interface_id vendor1
Command: config dhcpv6_relay option_18 interface_id vendor1

Success.

DGS-3000-26TC:admin#
```

23-10 config dhcpv6_relay option_37

Description

This command is used to configure the processing of option 37 for the DHCPv6 relay function

Format

```
config dhcpv6_relay option_37 {state [enable | disable] | check [enable | disable] | remote_id [default | cid_with_user_define <desc 128> | user_define <desc 128> | vendor1]}(1)
```

Parameters

-
- state** - When the state is enabled, the DHCP packet will be inserted with the option 37 field before being relayed to server. When the state is disabled, the DHCP packet will be relayed directly to server without further checks and inserted with the option 37.
- enable** - Specify that the DHCPv6 relay Option 37's state is enabled. When the state is enabled, the DHCP packet will be inserted with the Option 37 field before being relayed to server.
- disable** - Specify that the DHCPv6 relay Option 37's state is disabled. When the state is disabled, the DHCP packet will be relayed directly to server without further checks and inserted with the Option 37.
-
- check** - When the check state is enabled, packets coming from client side should not have the option 37 field. If client originating packets have the option 37 field set they will be dropped.
- enable** - Specify to enable the check function.
- disable** - Specify to disable the check function.
-
- remote_id** Specify the content in the Remote ID.
- default** - The remote ID will be VLAN ID + Module + Port +System MAC address of the device.
- cid_with_user_define** - The remote ID will be VLAN ID + Module + Port + user defined string.
- <desc 128>** - Enter the user defined cid. The page title description can be up to 128 characters long.
- user_define** - The remote ID will be user defined string.
- <desc 128>** - Enter the user defined spec up to 128 characters long.
- vendor1** - The remote ID will be System MAC address of the device
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCPv6 relay option 37:

```
DGS-3000-26TC:admin#config dhcpv6_relay option_37 state enable
Command: config dhcpv6_relay option_37 state enable

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_37 check enable
Command: config dhcpv6_relay option_37 check enable

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_37 remote_id default
Command: config dhcpv6_relay option_37 remote_id default

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_37 remote_id cid_with_user_define D-link
DGS3200 Series
Command: config dhcpv6_relay option_37 remote_id cid_with_user_define D-link DGS3200 Series

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_37 remote_id user_define D-link DGS3200 Series
Command: config dhcpv6_relay option_37 remote_id user_define D-link DGS3200 Series

Success.

DGS-3000-26TC:admin#config dhcpv6_relay option_37 remote_id vendor1
Command: config dhcpv6_relay option_37 remote_id vendor1

Success.

DGS-3000-26TC:admin#
```

23-11 show dhcpv6_relay

Description

This command is used to display the current DHCPv6 relay configuration of all interfaces, or if an IP interface name is specified, the DHCPv6 relay configuration for that IP interface.

Format

```
show dhcpv6_relay {ipif <ipif_name 12>}
```

Parameters

ipif - (Optional) The name of the IP interface for which to display the current DHCPv6 relay configuration.
<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.
If no IP interface is specified, all configured DHCPv6 relay interfaces are displayed.

Restrictions

None.

Example

To display local DHCPv6 relay configuration:

```
DGS-3000-26TC:admin#show dhcpv6_relay
Command: show dhcpv6_relay

DHCPv6 Relay Global State : Disabled
DHCPv6 Hops Count Limit   : 4
DHCPv6 Relay Information Option 18 State : Disabled
DHCPv6 Relay Information Option 18 Check : Disabled
DHCPv6 Relay Information Option 18 Interface ID Type : Default
DHCPv6 Relay Information Option 37 State : Disabled
DHCPv6 Relay Information Option 37 Check : Disabled
DHCPv6 Relay Information Option 37 Remote ID Type : Default
DHCPv6 Relay Information Option 37 Remote ID :

-----
IP Interface           : System
DHCPv6 Relay Status    : Enabled
Server Address         :

Total Entries          : 1

DGS-3000-26TC:admin#
```

23-12 show dhcpv6_local_relay

Description

This command is used to display the current DHCPv6 local relay configuration.

Format

show dhcpv6_local_relay

Parameters

None.

Restrictions

None.

Example

To display local DHCPv6 relay configuration:

```
DGS-3000-26TC:admin#oper#show dhcpv6_local_relay
```

```
Command: show dhcpv6_local_relay
```

```
DHCPv6 Local Relay Status      : Disabled
```

```
DHCPv6 Local Relay VID List   : 1,3-4
```

```
DGS-3000-26TC:admin#
```

Chapter 24 DHCPv6 Server Command List

create dhcpv6 pool <pool_name 12>
delete dhcpv6 pool [<pool_name 12> all]
show dhcpv6 pool {<pool_name 12>}
config dhcpv6 pool ipv6network_addr <pool_name 12> begin <ipv6networkaddr> end <ipv6networkaddr>
config dhcpv6 pool domain_name <pool_name 12> <domain_name 255>
config dhcpv6 pool dns_server <pool_name 12> <ipv6addr> {<ipv6addr>}
config dhcpv6 pool lifetime <pool_name 12> preferred_lifetime <sec 60-4294967295> valid_lifetime <sec 60-4294967295>
config dhcpv6 pool manual_binding <pool_name 12> [add < ipv6addr> client_duid <string 28> delete <ipv6addr> all]
show dhcpv6 manual_binding {<pool_name 12>}
show dhcpv6 binding {<pool_name 12>}
clear dhcpv6 binding {<pool_name 12>}
enable dhcpv6_server
disable dhcpv6_server
show dhcpv6_server {ipif <ipif_name 12>}
config dhcpv6 pool excluded_address <pool_name 12> [add begin <ipv6addr> end <ipv6addr> delete [begin <ipv6addr> end <ipv6addr> all]]
show dhcpv6 excluded_address {<pool_name 12>}
config dhcpv6_server ipif [<ipif_name 12> all] state [enable disable]

24-1 create dhcpv6 pool

Description

This command is used to create a DHCPv6 pool for the DHCPv6 server.

Format

create dhcpv6 pool <pool_name 12>

Parameters

<pool_name 12> - Enter the pool name here. This name can be up to 12 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a DHCPv6 pool pool1:

```
DGS-3000-26TC:admin# create dhcpv6 pool pool1
Command : create dhcpv6 pool pool1

success

DGS-3000-26TC:admin#
```

24-2 delete dhcpv6 pool

Description

This command is used to delete one or all DHCPv6 pools.

Format

delete dhcpv6 pool [<pool_name 12> | all]

Parameters

<pool_name 12> - Enter the DHCPv6 pool name to be removed here. This name can be up to 12 characters long.

all - Specify that all the DHCPv6 pools will be removed.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the DHCPv6 pool by specifying the pool name pool1:

```
DGS-3000-26TC:admin# delete dhcpv6 pool pool1
Command: delete dhcpv6 pool pool1

Success.

DGS-3000-26TC:admin#
```

24-3 show dhcpv6 pool

Description

This command is used to display one or all DHCPv6 pools configuration.

Format

show dhcpv6 pool {<pool_name 12>}

Parameters

<pool_name 12> - (Optional) Enter the DHCPv6 pool name to be displayed here. This name can be up to 12 characters long.

If no parameters are specified, all the DHCPv6 pools will be displayed.

Restrictions

None.

Example

To show the DHCPv6 pool by specifying the pool name pool1:


```
DGS-3000-26TC:admin# show dhcpv6 pool pool1
Command: show dhcpv6 pool pool1

Pool Name           : pool1
Begin Network Address : 2000::1/64
End Network Address   : 2000::200/64
Domain Name          : domain.com
DNS Server Address    : 2000::ff
                    : 2000::fe
Preferred Lifetime    : 604800 (sec)
Valid Lifetime        : 2592000 (sec)

Total Pool Entries: 1

DGS-3000-26TC:admin#
```

24-4 config dhcpv6 pool ipv6network_addr

Description

This command is used to configure the range of IPv6 network addresses for the DHCPv6 pool. The IPv6 addresses in the range are free to be assigned to any DHCPv6 client. When the DHCPv6 server receives a request from the client, the server will automatically find an available pool to allocate an IPv6 address.

The begin_networkaddr and end_networkaddr must observe some rules as followed:

The prefix of the begin_networkaddr and end_networkaddr are not consistent, otherwise, the switch will print an error message: The prefix of begin_networkaddr and end_networkaddr must be consistent. (e.g.: the begin_networkaddr is 2000::1/64, and the end_networkaddr is 3000::100/64)

The begin address must not be larger than end address, otherwise, the switch will print an error message: The begin IPv6 address must be lower than or equal to the end IPv6 address. (e.g.: the begin_networkaddr is 2000::200/64, and the end_networkaddr is 2000::100/64)

There must not be intersection between the IPv6 address ranges of two pools, otherwise, the Switch will print an error message: IPv6network address collision. (e.g.: pool1: 2000::1/64 --- 2000::100/64, pool2: 2000::50/64 --- 2000::200/64)

The IPv6 network address can't be Link-local address and Multicast address, otherwise, the Switch will print an error message: "The IPv6 network address can't be Link-local address or Multicast address." (e.g.: pool1: FE80::1/64 --- FE80::100/64, pool2: FE80::200/64 --- FE80::300/64)

Format

```
config dhcpv6 pool ipv6network_addr <pool_name 12> begin <ipv6networkaddr> end <ipv6networkaddr>
```

Parameters

<pool_name 12> - Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

begin - Specify the beginning IPv6 network address of the DHCPv6 pool.

<ipv6networkaddr> - Enter the beginning IPv6 network address of the DHCPv6 pool here.

end - Specify the ending IPv6 network address of the DHCPv6 pool.

<ipv6networkaddr> - Enter the ending IPv6 network address of the DHCPv6 pool here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the range of IPv6 network address for the DHCPv6 pool pool1:

```
DGS-3000-26TC:admin# config dhcpv6 pool ipv6network_addr pool1 begin 2000::1/64 end
2000::32/64
Command: config dhcpv6 pool ipv6network_addr pool1 begin 2000::1/64 end 2000::32/64

success

DGS-3000-26TC:admin#
```

24-5 config dhcpv6 pool domain_name

Description

This command is used to configure the domain name for the DHCPv6 pool of the Switch. The domain name configured here will be used as the default domain name by the client.

By default, the domain name is empty. If domain name is empty, the domain name information will not be provided to the client.

Format

```
config dhcpv6 pool domain_name <pool_name 12> <domain_name 255>
```

Parameters

<pool_name 12> - Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

<domain_name 255> - Enter the domain name used here. This name can be up to 255 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the domain name for the DHCPv6 pool pool1:

```
DGS-3000-26TC:admin# config dhcpv6 pool domain_name pool1 dlink.com
Command: config dhcpv6 pool domain_name pool1 dlink.com

Success.

DGS-3000-26TC:admin#
```

24-6 config dhcpv6 pool dns_server

Description

This command is used to configure the DNS server's IPv6 addresses for a specific DHCPv6 pool. Users may add up to two DNS Server addresses. If DNS server is not specified, the DNS server information will not be provided to the client. Users could delete a DNS server address in the method of setting the DNS server address to zero.

Format

```
config dhcpv6 pool dns_server <pool_name 12> <ipv6addr> {<ipv6addr>}
```

Parameters

<pool_name 12> - Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

<ipv6addr> - Enter the primary DNS Server IPv6 address used for this pool here.

<ipv6addr> - (Optional) Enter the secondary DNS Server IPv6 address used for this pool here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DNS server address for a DHCPv6 pool:

```
DGS-3000-26TC:admin# config dhcpv6 pool dns_server pool1 2000::200 2000::201
```

```
Command: config dhcpv6 pool dns_server pool1 2000::200 2000::201
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

24-7 config dhcpv6 pool lifetime

Description

This command is used to configure the preferred-lifetime and valid-lifetime of IPv6 address within a DHCPv6 pool.

- **Preferred lifetime** - This is the length of time a valid address is preferred (i.e. the time until deprecation). When the preferred lifetime expires, the address becomes deprecated.
- **Valid lifetime** - This is the length of time an address remains in its valid state (i.e. the time until invalidation). When the valid lifetime expires, the address becomes invalid.

The valid lifetime must be greater than or equal to the preferred lifetime.

Format

```
config dhcpv6 pool lifetime <pool_name 12> preferred_lifetime <sec 60-4294967295> valid_lifetime <sec 60-4294967295>
```

Parameters

<pool_name 12> - Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

preferred_lifetime - Specify the length of time that a valid address is preferred to.

<sec 60-4294967295> - Enter the preferred lifetime value here. This value must be between 60 and 4294967295 seconds.

valid_lifetime - Specify the length of time an address remains in the valid state.

<sec 60-4294967295> - Enter the valid lifetime value here. This value must be between 60 and 4294967295 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the preferred-lifetime and valid-lifetime for the DHCPv6 pool:

```
DGS-3000-26TC:admin# config dhcpv6 pool lifetime pool1 preferred_lifetime 80 valid_lifetime
100
Command: config dhcpv6 pool lifetime pool1 preferred_lifetime 80 valid_lifetime 100

Success.

DGS-3000-26TC:admin#
```

24-8 config dhcpv6 pool manual_binding

Description

This command is used to configure a DHCPv6 pool manual binding entry. An address binding is a mapping between the IPv6 address and DUID (A DHCPv6 Unique Identifier for a DHCPv6 participant) of a client. The IPv6 address specified in the manual binding entry must be in the range of the DHCPv6 pool.

Format

```
config dhcpv6 pool manual_binding <pool_name 12> [add < ipv6addr> client_duid <string 28> | delete
[<ipv6addr> | all] ]
```

Parameters

<pool_name 12> - Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

add - Specify the IPv6 address that will statically be bound to a device.

<ipv6addr> - Enter the IPv6 address used for the static bind here.

client_duid - Specify the DUID of the device that will statically be bound to the IPv6 address entered in the previous field.

<string 28> - Enter the client DUID used here. This string can be up to 28 characters long and must also contain characters 0-9, letters a-f or A-F.

delete - Specify to delete the manual binding entry.

<ipv6addr> - Enter the IPv6 address of the manual binding entry to be deleted here.

all - Specify that all manual binding entries will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a manual binding DHCPv6 entry:

```
DGS-3000-26TC:admin# config dhcpv6 pool manual_binding pool1 add 2000::3 client_duid
00010006124dd5840021918d4d9f
Command: config dhcpv6 pool manual_binding pool1 add 2000::3 client_duid
00010006124dd5840021918d4d9f

success

DGS-3000-26TC:admin#
```

24-9 show dhcpv6 manual_binding

Description

This command is used to display the manual binding entries for the selected or all DHCPv6 pools.

Format**show dhcpv6 manual_binding {<pool_name 12>}****Parameters**

<pool_name 12> - (Optional) Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

If no parameter is specified, then all the entries will be displayed.

Restrictions

None.

Example

To display the manual binding entries of the DHCPv6 pool:

```
DGS-3000-26TC:admin# show dhcpv6 manual_binding
Command: show dhcpv6 manual_binding

Pool Name :net100
Entry 1
  IPv6 Address: 3000:100:1::ABCD
  DUID          : 00030006001572200700

Pool Name :net91
Entry 1
  IPv6 Address: 3000:91:1::100
  DUID          : 00030006aabbcc000000
Entry 2
  IPv6 Address: 3000:91:1::101
  DUID          : 00030006aabbcc000001

Total Entries: 3

DGS-3000-26TC:admin#
```

24-10 show dhcpv6 binding

Description

This command is used to show the DHCPv6 dynamic binding information. Entering the command without the pool name will display all information regarding DHCPv6 dynamic binding on the switch. This command only displays the dynamic binding information, not including manual binding information.

Format**show dhcpv6 binding {<pool_name 12>}****Parameters**

<pool_name 12> - (Optional) Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

Restrictions

None.

Example

To display the DHCPv6 dynamic binding information on the Switch:

```
DGS-3000-26TC:admin# show dhcpv6 binding
Command: show dhcpv6 binding

Pool Name: net90          IPv6 Address: 3000:90:1::7
                        DUID          : 0003000600cd14517000
                        Preferred(s): 120          Valid(s): 240

Pool Name: net100-2      IPv6 Address: 3000:100:1::1
                        DUID          : 00030006001572200300
                        Preferred(s): 120          Valid(s): 240

Total Entries : 2

DGS-3000-26TC:admin#
```

24-11 clear dhcpv6 binding

Description

This command is used to clear the DHCPv6 dynamic binding information.

Format

clear dhcpv6 binding {<pool_name 12>}

Parameters

<pool_name 12> - (Optional) Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear the DHCPv6 dynamic binding information on the Switch:

```
DGS-3000-26TC:admin# clear dhcpv6 binding
Command: clear dhcpv6 binding

Success.

DGS-3000-26TC:admin#
```

24-12 enable dhcpv6_server

Description

This command is used to enable the DHCPv6 server function on the Switch.

Format

enable dhcpv6_server

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCPv6 server global state to enable:

```
DGS-3000-26TC:admin# enable dhcpv6_server
Command: enable dhcpv6_server

Success.

DGS-3000-26TC:admin#
```

24-13 disable dhcpv6_server

Description

This command is used to disable the DHCPv6 server function on the Switch.

Format

disable dhcpv6_server

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCPv6 server global state to disable:

```
DGS-3000-26TC:admin# disable dhcpv6_server
Command: disable dhcpv6_server

Success.

DGS-3000-26TC:admin#
```

24-14 show dhcpv6_server

Description

This command is used to display the DHCPv6 server setting.

Format

show dhcpv6_server {ipif <ipif_name 12>}

Parameters

ipif - (Optional) Specify the IP interface name to be displayed.
<ipif_name 12> - Enter the IP interface name to be displayed here. This name can be up to 12 characters long.

Restrictions

None.

Example

To display the DHCPv6 server setting:

```
DGS-3000-26TC:admin# show dhcpv6_server
Command: show dhcpv6_server

DHCPv6 Server Global State: Disabled
-----
IP Interface           : System
DHCPv6 Server State   : Enabled

IP Interface           : ipif1
DHCPv6 Server State   : Enabled

Total Entries         : 2

DGS-3000-26TC:admin#
```

24-15 config dhcpv6 pool excluded_address

Description

This command is used to configure the reserved IPv6 addresses on the DHCPv6 server. This command will configure the IPv6 addresses range that the DHCPv6 server should not assign to DHCPv6 client. The exclude address range must be the subset of the specified pool.

Format

```
config dhcpv6 pool excluded_address <pool_name 12> [add begin <ipv6addr> end <ipv6addr> | delete
[begin <ipv6addr> end <ipv6addr> | all]]
```

Parameters

<pool_name 12> - Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

add - Specify to add an excluded address range for a specified pool.

begin - Specify the beginning IPv6 address of the range of IPv6 addresses to be excluded from the DHCPv6 pool.

<ipv6addr> - Enter the beginning IPv6 address used here.

end - Specify the ending IPv6 address of the range of IPv6 addresses to be excluded from the DHCPv6 pool.

<ipv6addr> - Enter the ending IPv6 address used here.

delete - Specify to delete one or all excluded address ranges of a specified pool.

begin - Specify the beginning IPv6 address of the range of IPv6 addresses to be excluded from the DHCPv6 pool.

<ipv6addr> - Enter the beginning IPv6 address used here.

end - Specify the ending IPv6 address of the range of IPv6 addresses to be excluded from the DHCPv6 pool.

<ipv6addr> - Enter the ending IPv6 address used here.

all - Specify to delete all excluded address ranges of a specified pool.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add the IPv6 addresses range that DHCPv6 server should not assign to clients:

```
DGS-3000-26TC:admin# config dhcpv6 pool excluded_address pool1 add begin 2000::3 end 2000::8
Command: config dhcpv6 pool excluded_address pool1 add begin 2000::3 end 2000::8

Success.

DGS-3000-26TC:admin#
```

24-16 show dhcpv6 excluded_address

Description

This command is used to display the groups of IPv6 addresses which are excluded from the legal assigned IPv6 address

Format

```
show dhcpv6 excluded_address {<pool_name 12>}
```

Parameters

<pool_name 12> - (Optional) Enter the DHCPv6 pool name used here. This name can be up to 12 characters long.

Restrictions

None.

Example

To display the excluded address information:

```
DGS-3000-26TC:admin# show dhcpv6 excluded_address
Command: show dhcpv6 excluded_address

Pool Name: net100
  Range 1
    Begin Address: 3000:110:1::1
    End Address  : 3000:110:1::7
  Range 2
    Begin Address: 3000:110:1::9
    End Address  : 3000:110:1::9
  Range 3
    Begin Address: 3000:110:1::11
    End Address  : 3000:110:1::11
  Range 4
    Begin Address: 3000:110:1::13
    End Address  : 3000:110:1::13

Total Entries : 5

DGS-3000-26TC:admin#
```

24-17 config dhcpv6_server ipif

Description

This command is used to configure the DHCPv6 Server state per interface.

Format

config dhcpv6_server ipif [<ipif_name 12> | all] state [enable | disable]

Parameters

<ipif_name 12> - Enter the IP interface name used. This name can be up to 12 characters long.

all - Specify that all the IP interfaces will be used.

state - Specify the DHCPv6 server state for the specified interface.

enable - Specify that the DHCPv6 server state for the specified interface will be enabled.

disable - Specify that the DHCPv6 server state for the specified interface will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DHCPv6 Server state of System Interface to enable:

```
DGS-3000-26TC:admin# config dhcpv6_server ipif System state enable
```

```
Command: config dhcpv6_server ipif System state enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

Chapter 25 Digital Diagnostic Monitoring (DDM) Command List

config ddm [trap | log] [enable | disable]

config ddm ports [<portlist> | all] [[temperature_threshold {high_alarm <degrees> | low_alarm <degrees> | high_warning<degrees> | low_warning <degrees>}(1) | voltage_threshold {high_alarm <voltage> | low_alarm<voltage> | high_warning<voltage> | low_warning<voltage>}(1) | bias_current_threshold {high_alarm <milliampere> | low_alarm <milliampere> | high_warning <milliampere> | low_warning<milliampere>}(1) | tx_power_threshold {high_alarm <mw_or_dbm> | low_alarm <mw_or_dbm> | high_warning <mw_or_dbm> | low_warning <mw_or_dbm>}(1) | rx_power_threshold {high_alarm <mw_or_dbm> | low_alarm <mw_or_dbm> | high_warning <mw_or_dbm> | low_warning <mw_or_dbm>}(1)] | {state [enable | disable] | shutdown [alarm | warning | none]}(1) | reload_threshold]

show ddm

show ddm ports {<portlist>} [status | configuration]

config ddm power_unit [mw | dbm]

25-1 config ddm

Description

This command is used to configure the DDM log and trap action when encountering an exceeding alarm or warning thresholds event.

Format

config ddm [trap | log] [enable | disable]

Parameters

trap - Specify whether to send traps, when the operating parameter exceeds the corresponding threshold. The DDM trap is disabled by default.

log - Specify whether to send a log, when the operating parameter exceeds the corresponding threshold. The DDM log is enabled by default.

enable - Specify to enable the log or trap sending option.

disable - Specify to disable the log or trap sending option.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure DDM log state to enable:

```
DGS-3000-26TC:admin#config ddm log enable
Command: config ddm log enable

Success.

DGS-3000-26TC:admin#
```

To configure DDM trap state to enable:

```
DGS-3000-26TC:admin#config ddm trap enable
Command: config ddm trap enable

Success.

DGS-3000-26TC:admin#
```

25-2 config ddm ports

Description

This command is used to configure the DDM settings of the specified ports.

Format

```
config ddm ports [<portlist> | all] [[temperature_threshold {high_alarm <degrees> | low_alarm <degrees> |
high_warning<degrees> | low_warning <degrees>}(1) | voltage_threshold {high_alarm <voltage> |
low_alarm<voltage> | high_warning<voltage> | low_warning<voltage>}(1) | bias_current_threshold
{high_alarm <milliampere> | low_alarm <milliampere> | high_warning <milliampere> |
low_warning<milliampere>}(1) | tx_power_threshold {high_alarm <mw_or_dbm> | low_alarm
<mw_or_dbm> | high_warning <mw_or_dbm> | low_warning <mw_or_dbm>}(1) | rx_power_threshold
{high_alarm <mw_or_dbm> | low_alarm <mw_or_dbm> | high_warning <mw_or_dbm> | low_warning
<mw_or_dbm>}(1)] | {state [enable | disable] | shutdown [alarm | warning | none]}(1) | reload_threshold]
```

Parameters

-
- <portlist>** - Enter the range of ports to be configured here.
 - all** - Specify that all the optic ports' operating parameters will be configured.
 - temperature_threshold** - Specify the threshold of the optic module's temperature in centigrade. At least one parameter shall be specified for this threshold. The range is from -128 to 127.996 °C.
 - high_alarm** - Specify the high threshold value for the temperature alarm. When the operating parameter rises above this value, the action associated with the alarm is taken.
 - <degrees>** - Enter the high threshold alarm value used here.
 - low_alarm** - Specify the low threshold value for the temperature alarm. When the operating parameter falls below this value, the action associated with the alarm is taken.
 - <degrees>** - Enter the low threshold alarm value used here.
 - high_warning** - Specify the high threshold for the warning. When the operating parameter rises above this value, the action associated with the warning is taken.
 - <degrees>** - Enter the high threshold warning value here.
 - low_warning** - Specify the low threshold for the warning. When the operating parameter falls below this value, the action associated with the warning is taken.
 - <degrees>** - Enter the low threshold warning value here.
 - voltage_threshold** - Specify the threshold of optic module's voltage. The range is from 0 to 6.5535 V.
 - high_alarm** - Specify the high threshold value for the voltage alarm. When the operating parameter rises above this value, the action associated with the alarm is taken.
 - <voltage>** - Enter the high threshold alarm value used here.
 - low_alarm** - Specify the low threshold value for the voltage alarm. When the operating parameter falls below this value, the action associated with the alarm is taken.
 - <voltage>** - Enter the low threshold alarm value used here.
 - high_warning** - Specify the high threshold for the warning. When the operating parameter rises above this value, the action associated with the warning is taken.
 - <voltage>** - Enter the high threshold warning value here.
 - low_warning** - Specify the low threshold for the warning. When the operating parameter falls below this value, the action associated with the warning is taken.
 - <voltage>** - Enter the low threshold warning value here.
 - bias_current_threshold** - Specify the threshold of the optic module's bias current. The range is from 0 to 131 mA.
 - high_alarm** - Specify the threshold of the optic module's output current.
 - <milliampere>** - Enter the high threshold alarm value used here.
 - low_alarm** - Specify the threshold of optic module's received current.
 - <milliampere>** - Enter the low threshold alarm value used here.
-

high_warning - Specify the high threshold for the warning. When the operating parameter rises above this value, the action associated with the warning is taken.
<milliampere> - Enter the high threshold warning value here.
low_warning - Specify the low threshold for the warning. When the operating parameter falls below this value, the action associated with the warning is taken.
<milliampere> - Enter the low threshold warning value here.

tx_power_threshold - Specify the threshold of the optic module's output power. If the unit is mW, the range is from 0 to 6.5535 mW. If the unit is dBm, the range is from -40 to 8.1647 dBm.
high_alarm - Specify the high threshold for the alarm. When the operating parameter rises above this value, the action associated with the alarm is taken.
<mw_or_dbm> - Enter the high threshold alarm value used here.
low_alarm - Specify the low threshold for the alarm. When the operating parameter falls below this value, the action associated with the alarm is taken.
<mw_or_dbm> - Enter the low threshold alarm value used here.
high_warning - Specify the high threshold for the warning. When the operating parameter rises above this value, the action associated with the warning is taken.
<mw_or_dbm> - Enter the high threshold warning value here.
low_warning - Specify the low threshold for the warning. When the operating parameter falls below this value, the action associated with the warning is taken.
<mw_or_dbm> - Enter the low threshold warning value here.

rx_power_threshold - Specify the threshold of optic module's received power. If the unit is mW, the range is from 0 to 6.5535 mW. If the unit is dBm, the range is from -40 to 8.1647 dBm.
high_alarm - Specify the high threshold for the alarm. When the operating parameter rises above this value, the action associated with the alarm is taken.
<mw_or_dbm> - Enter the high threshold alarm value used here.
low_alarm - Specify the low threshold for the alarm. When the operating parameter falls below this value, the action associated with the alarm is taken.
<mw_or_dbm> - Enter the low threshold alarm value used here.
high_warning - Specify the high threshold for the warning. When the operating parameter rises above this value, the action associated with the warning is taken.
<mw_or_dbm> - Enter the high threshold warning value here.
low_warning - Specify the low threshold for the warning. When the operating parameter falls below this value, the action associated with the warning is taken.
<mw_or_dbm> - Enter the low threshold warning value here.

state - Specify the DDM state to enable or disable. If the state is disabled, no DDM action will take effect.
enable - Specify to enable the DDM state.
disable - Specify to disable the DDM state.

shutdown - Specify whether or not to shutdown the port when the operating parameter exceeds the corresponding alarm threshold or warning threshold. The default value is none.
alarm - Shuts down the port when the configured alarm threshold range is exceeded.
warning - Shuts down the port when the configured warning threshold range is exceeded.
none - The port will never shut down regardless if the threshold ranges are exceeded or not.

reload_threshold - Specify the reloading threshold limit. Manually reload the DDM threshold configuration.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the port 25's temperature threshold:

```
DGS-3000-26TC:admin#config ddm ports 25 temperature_threshold high_alarm 84.9532 low_alarm -10 high_warning 70 low_warning 2.25
Command: config ddm ports 25 temperature_threshold high_alarm 84.9532 low_alarm -10 high_warning 70 low_warning 2.25
```

According to the DDM precision definition, closest value 84.9531 is chosen.

Success.

```
DGS-3000-26TC:admin#
```

To configure the port 25's voltage threshold:

```
DGS-3000-26TC:admin#config ddm ports 25 voltage_threshold high_alarm 4.25 low_alarm 2.5
high_warning 3.5 low_warning 3
Command: config ddm ports 25 voltage_threshold high_alarm 4.25 low_alarm 2.5 high_warning 3.5
low_warning 3

Success.

DGS-3000-26TC:admin#
```

To configure the port 25's bias current threshold:

```
DGS-3000-26TC:admin#config ddm ports 25 bias_current_threshold high_alarm 7.25 low_alarm
0.004 high_warning 0.5 low_warning 0.008
Command: config ddm ports 25 bias_current_threshold high_alarm 7.25 low_alarm 0.004
high_warning 0.5 low_warning 0.008

Success.

DGS-3000-26TC:admin#
```

To configure the port 25's transmit power threshold:

```
DGS-3000-26TC:admin#config ddm ports 25 bias_current_threshold high_alarm 7.25 low_alarm
0.004 high_warning 0.5 low_warning 0.008
Command: config ddm ports 25 bias_current_threshold high_alarm 7.25 low_alarm 0.004
high_warning 0.5 low_warning 0.008

Success.

DGS-3000-26TC:admin#
```

To configure the port 25's receive power threshold:

```
DGS-3000-26TC:admin#config ddm ports 25 rx_power_threshold high_alarm 4.55 low_alarm 0.01
high_warning 3.5 low_warning 0.03
Command: config ddm ports 25 rx_power_threshold high_alarm 4.55 low_alarm 0.01 high_warning
3.5 low_warning 0.03

Success.

DGS-3000-26TC:admin#
```

To configure the port 25's actions associate with the alarm:

```
DGS-3000-26TC:admin#config ddm ports 25 state enable shutdown alarm
Command: config ddm ports 25 state enable shutdown alarm

Success.

DGS-3000-26TC:admin#
```

25-3 show ddm

Description

This command is used to display the DDM global settings.

Format

show ddm

Parameters

None.

Restrictions

None.

Example

To display the DDM global settings:

```
DGS-3000-26TC:admin#show ddm
Command: show ddm

DDM Log           :Enabled
DDM Trap          :Disabled
DDM Tx/Rx Power Unit : mw

DGS-3000-26TC:admin
```

25-4 show ddm ports

Description

This command is used to show the current operating DDM parameters and configuration values of the optic module of the specified ports. There are two types of thresholds: the administrative configuration and the operation configuration threshold.

For the optic port, when a particular threshold was configured by user, it will be shown in this command with a tag indicating that it is a threshold that user configured, else it would be the threshold read from the optic module that is being inserted.

Format

show ddm ports {<portlist>} [status | configuration]

Parameters

<portlist> - (Optional) Enter the range of ports to be displayed here.

status - Specify that the operating parameter will be displayed.

configuration - Specify that the configuration values will be displayed.

Restrictions

None.

Example

To display ports 25-26's operating parameters:

```
DGS-3000-26TC:admin#show ddm ports 25-26 status
Command: show ddm ports 25-26 status
```

Port	Temperature (in Celsius)	Voltage (V)	Bias Current (mA)	TX Power (mW)	RX Power (mW)
25	-	-	-	-	-
26	-	-	-	-	-

```

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh

```

25-5 config ddm power_unit**Description**

This command is used to configure the unit of DDM TX and RX power.

Format

config ddm power_unit [mw | dbm]

Parameters

mw - Specify the DDM TX and RX power unit as mW.

dbm - Specify the DDM TX and RX power unit as dBm.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the DDM TX and RX power unit as dBm:

```
DGS-3000-26TC:admin#config ddm power_unit dbm
Command: config ddm power_unit dbm

Success.

DGS-3000-26TC:admin#
```

Chapter 26 D-Link Unidirectional Link Detection (DULD) Command List

```
config duld ports [<portlist> | all] {state [enable | disable] | mode [shutdown | normal] | discovery_time <sec 5-65535>}(1)
```

```
show duld ports {<portlist>}
```

26-1 config duld ports

Description

This command is used to configure unidirectional link detection on ports. Unidirectional link detection provides discovery mechanism based on 802.3ah to discovery its neighbor. If the OAM discovery can complete in configured discovery time, it concludes the link is bidirectional. Otherwise, it starts detecting task to detect the link status.

Format

```
config duld ports [<portlist> | all] {state [enable | disable] | mode [shutdown | normal] | discovery_time <sec 5-65535>}(1)
```

Parameters

<portlist> - Enter a range of ports.
all - Specify to select all ports.

state - Specify these ports unidirectional link detection status.
enable - Enables unidirectional link detection status.
disable - Disables unidirectional link detection status.

mode - Specify the mode when detecting unidirectional link.
shutdown - If any unidirectional link is detected, disables the port and logs an event.
normal - Only logs an event when a unidirectional link is detected.

discovery_time - Specify these ports neighbor discovery time. If OAM discovery cannot complete in the discovery time, the unidirectional link detection will start.
<sec 5-65535> - Enter a time in second. The default discovery time is 5 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable unidirectional link detection on port 1:

```
DGS-3000-26TC:admin#config duld ports 1 state enable
Command: config duld ports 1 state enable

Success.

DGS-3000-26TC:admin#
```

26-2 show duld ports

Description

This command is used to show unidirectional link detection information.

Format

show duld ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports.

Restrictions

None.

Example

To show ports 1-4 unidirectional link detection information:

```
DGS-3000-26TC:admin#show duld ports 1-4
Command: show duld ports 1-4

Port      Admin State  Oper Status  Mode      Link Status  Discovery Time(Sec)
-----
1         Enabled     Disabled    Normal    Unknown      5
2         Disabled    Disabled    Normal    Unknown      5
3         Disabled    Disabled    Normal    Unknown      5
4         Disabled    Disabled    Normal    Unknown      5

DGS-3000-26TC:admin#
```

Chapter 27 Domain Name System (DNS) Resolver Command List

```

config name_server add [<ipaddr> | <ipv6addr>] {primary}
config name_server delete [<ipaddr> | <ipv6addr>] {primary}
config name_server timeout <second 1-60>
show name_server
create host_name <name 255> [<ipaddr> | <ipv6addr>]
delete host_name [<name 255> | all]
show host_name {static | dynamic}
enable dns_resolver
disable dns_resolver

```

27-1 config name_server add

Description

This command is used to add a DNS resolver name server to the Switch.

Format

```
config name_server add [<ipaddr> | <ipv6addr>] {primary}
```

Parameters

```

<ipaddr> - Enter the IPv4 address of the DNS Resolver name server.
<ipv6addr> - Enter the IPv6 address of the DNS Resolver name server.
primary - (Optional) Specify that the name server is a primary name server.

```

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add DNS Resolver primary name server 10.10.10.10:

```

DGS-3000-26TC:admin#config name_server add 10.10.10.10 primary
Command: config name_server add 10.10.10.10 primary

Success.

DGS-3000-26TC:admin#

```

27-1 config name_server delete

Description

This command is used to delete a DNS resolver name server from the Switch.

Format

config name_server delete [<ipaddr> | <ipv6addr>] {primary}

Parameters

<ipaddr> - Enter the IPv4 address of the DNS Resolver name server.

<ipv6addr> - Enter the IPv6 address of the DNS Resolver name server.

primary - (Optional) Specify that the name server is a primary name server.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete DNS Resolver name server 10.10.10.1:

```
DGS-3000-26TC:admin#config name_server delete 10.10.10.1
```

```
Command: config name_server delete 10.10.10.1
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

27-2 config name_server timeout

Description

This command is used to configure the timeout value of a DNS Resolver name server.

Format

config name_server timeout <sec 1-60>

Parameters

<sec 1-60> - Enter the maximum time waiting for a response from a specified name server.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure DNS Resolver name server time out to 10 seconds:

```
DGS-3000-26TC:admin#config name_server timeout 10
```

```
Command: config name_server timeout 10
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

27-3 show name_server

Description

This command is used to display the current DNS Resolver name servers and name server time out on the Switch.

Format

show name_server

Parameters

None.

Restrictions

None.

Example

To display the current DNS Resolver name servers and name server time out:

```
Static Name Server Table:
  Server IP Address                Priority
  -----
  10.10.10.10                      Primary
  10.1.1.1                          Secondary

Dynamic Name Server Table:
  Server IP Address                Priority
  -----
  10.48.74.122                     Primary

DGS-3000-26TC:admin#
```

27-4 create host_name

Description

This command is used to create the static host name entry of the Switch.

Format

create host_name <name 255> [<ipaddr> | <ipv6addr>]

Parameters

<name 255> - Enter the hostname used. This name can be up to 255 characters long.

<ipaddr> - Enter the host IP address.

<ipv6addr> - Enter the host IPv6 address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create static host name "www.example.com":

```
DGS-3000-26TC:admin#create host_name www.example.com 10.10.10.10
Command: create host_name www.example.com 10.10.10.10

Success.

DGS-3000-26TC:admin#
```

27-5 delete host_name

Description

This command is used to delete the static or dynamic host name entries of the Switch.

Format

delete host_name [<name 255> | all]

Parameters

<name 255> - Enter the hostname. This name can be up to 255 characters long.
all - Specify that all the hostnames will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the static host name entry "www.example.com":

```
DGS-3000-26TC:admin#delete host_name www.example.com
Command: delete host_name www.example.com

Success.

DGS-3000-26TC:admin#
```

27-6 show host_name

Description

This command is used to display the current host name.

Format

show host_name {static | dynamic}

Parameters

static - (Optional) Specify to display the static host name entries.
dynamic - (Optional) Specify to display the dynamic host name entries.

Restrictions

None.

Example

To display the static and dynamic host name entries:

```
DGS-3000-26TC:admin#show host_name
Command: show host_name

Static Host Name Table

Host Name   : www.example.com
IP Address  : 10.10.10.10

Total Static Entries: 1

Dynamic Host Name Table

Total Dynamic Entries: 0

DGS-3000-26TC:admin#
```

27-7 enable dns_resolver

Description

This command is used to enable the DNS Resolver state of the Switch.

Format

enable dns_resolver

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DNS Resolver state to enabled:

```
DGS-3000-26TC:admin#enable dns_resolver
Command: enable dns_resolver

Success.

DGS-3000-26TC:admin#
```


27-8 disable dns_resolver

Description

This command is used to disable the DNS Resolver state of the Switch.

Format

disable dns_resolver

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the DNS Resolver state to disabled:

```
DGS-3000-26TC:admin#disable dns_resolver
Command: disable dns_resolver

Success.

DGS-3000-26TC:admin#
```

Chapter 28 DoS Attack Prevention Command List

```
config dos_prevention dos_type [{land_attack | blat_attack | tcp_null_scan | tcp_xmasscan | tcp_synfin |
tcp_syn_srcport_less_1024 | ping_death_attack | tcp_tiny_frag_attack} | all] {action [drop] | state [enable |
disable]}
```

```
show dos_prevention {land_attack | blat_attack | tcp_null_scan | tcp_xmasscan | tcp_synfin |
tcp_syn_srcport_less_1024 | ping_death_attack | tcp_tiny_frag_attack}
```

```
config dos_prevention trap [enable | disable]
```

```
config dos_prevention log [enable | disable]
```

28-1 config dos_prevention dos_type

Description

This command is used to configure the prevention of each Denial-of-Service (DoS) attack, including state and action. The packet matching will be done by hardware. For a specific type of attack, the content of the packet will be matched against a specific pattern.

Format

```
config dos_prevention dos_type [{land_attack | blat_attack | tcp_null_scan | tcp_xmasscan | tcp_synfin |
tcp_syn_srcport_less_1024 | ping_death_attack | tcp_tiny_frag_attack} | all] {action [drop] | state [enable |
disable]}
```

Parameters

land_attack - (Optional) Checks whether the source address is equal to destination address of a received IP packet.

blat_attack - (Optional) Checks whether the source port is equal to destination port of a received TCP packet.

tcp_null_scan - (Optional) Checks whether a received TCP packet contains a sequence number of 0 and no flags

tcp_xmasscan - (Optional) Checks whether a received TCP packet contains URG, Push and FIN flags.

tcp_synfin - (Optional) Checks whether a received TCP packet contains FIN and SYN flags.

tcp_syn_srcport_less_1024 - (Optional) Checks whether the TCP packets source ports are less than 1024 packets.

ping_death_attack - (Optional) Detects whether received packets are fragmented ICMP packets.

tcp_tiny_frag_attack - (Optional) Checks whether the packets are TCP tiny fragment packets.

all - Specify all DoS attack type.

action - (Optional) When enabling DoS prevention, the following actions can be taken.

drop - Drops DoS attack packets.

state - (Optional) Specify the DoS attack prevention state.

enable - Enables DoS attack prevention.

disable - Disables DoS attack prevention.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure land attack and blat attack prevention, the action is drop:

```
DGS-3000-26TC:admin#config dos_prevention dos_type land_attack blat_attack action drop state
enable
Command: config dos_prevention dos_type land_attack blat_attack action drop state enable

Success.

DGS-3000-26TC:admin#
```

28-2 show dos_prevention

Description

This command is used to display DoS prevention information, including the Trap/Log state, the type of DoS attack, the prevention state, the corresponding action if the prevention is enabled and the counter information of the DoS packet.

Format

```
show dos_prevention {land_attack | blat_attack | tcp_null_scan | tcp_xmasscan | tcp_synfin |
tcp_syn_srcport_less_1024 | ping_death_attack | tcp_tiny_frag_attack}
```

Parameters

land_attack - (Optional) Checks whether the source address is equal to destination address of a received IP packet.
blat_attack - (Optional) Checks whether the source port is equal to destination port of a received TCP packet.
tcp_null_scan - (Optional) Checks whether a received TCP packet contains a sequence number of 0 and no flags
tcp_xmasscan - (Optional) Checks whether a received TCP packet contains URG, Push and FIN flags.
tcp_synfin - (Optional) Checks whether a received TCP packet contains FIN and SYN flags.
tcp_syn_srcport_less_1024 - (Optional) Checks whether the TCP packets source ports are less than 1024 packets.
ping_death_attack - (Optional) Detects whether received packets are fragmented ICMP packets.
tcp_tiny_frag_attack - (Optional) Checks whether the packets are TCP tiny fragment packets.

Restrictions

None.

Example

To display DoS prevention information:

```

DGS-3000-26TC:admin#show dos_prevention
Command: show dos_prevention

Trap:Disabled   Log:Disabled   Function Version   : 1.01

DoS Type                State      Action           Frame Counts
-----
Land Attack              Enabled    Drop             -
Blat Attack              Enabled    Drop             -
TCP Null Scan           Disabled   Drop             -
TCP Xmas Scan           Disabled   Drop             -
TCP SYNFIN              Disabled   Drop             -
TCP SYN SrcPort Less 1024 Disabled   Drop             -
Ping of Death Attack    Disabled   Drop             -
TCP Tiny Fragment Attack Disabled   Drop             -

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh

```

28-3 config dos_prevention trap

Description

This command is used to enable or disable DoS prevention trap state.

Format

config dos_prevention trap [enable | disable]

Parameters

enable - Enables DoS prevention trap state.

disable - Disables DoS prevention trap state.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable DoS prevention trap:

```

DGS-3000-26TC:admin#config dos_prevention trap disable
Command: config dos_prevention trap disable

Success.

DGS-3000-26TC:admin#

```

28-4 config dos_prevention log

Description

This command is used to enable or disable dos prevention log state.

Format

`config dos_prevention log [enable | disable]`

Parameters

enable - Enables DoS prevention log state.

disable - Disables DoS prevention log state.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable DoS prevention log:

```
DGS-3000-26TC:admin#config dos_prevention log enable
Command: config dos_prevention log enable

Success.

DGS-3000-26TC:admin#
```

Chapter 29 Energy Efficient Ethernet (EEE) Command List

config eee ports [<portlist> | all] state [enable | disable]
show eee ports {<portlist>}

29-1 config eee ports

Description

This command is used to enable or disable the EEE function on the specified port(s) on the Switch.

NOTE: The two functions, EEE and ERPS, are mutually exclusive.

Format

config eee ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter a range of ports to be configured.

all - Specify to configure all ports.

state - Specify the EEE state. The default is disabled.

enable - Enable the EEE function for the specified port(s).

disable - Disable the EEE function for the specified port(s).

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable the EEE state on ports 2-5:

```
DGS-3000-26TC:admin#config eee ports 2-5 state enable
```

```
Command: config eee ports 2-5 state enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

29-2 show eee ports

Description

This command is used to display the EEE function state on the specified port(s).

Format

show eee ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a list of ports to be displayed.

Restrictions

None.

Example

To display the EEE state:

```
DGS-3000-26TC:admin#show eee ports 1-6,9
Command: show eee ports 1-6,9

Port          State
-----
1             Disabled
2             Enabled
3             Enabled
4             Enabled
5             Enabled
6             Disabled
9             Disabled

DGS-3000-26TC:admin#
```

Chapter 30 Ethernet Ring Protection Switching (ERPS) Command List

enable erps
disable erps
create erps raps_vlan <vlanid 1-4094>
delete erps raps_vlan <vlanid 1-4094>
config erps raps_vlan <vlanid> [state [enable disable] ring_mel <value 0-7> ring_port [west [<port> virtual_channel] east [<port> virtual_channel]] rpl_port [west east none] rpl_owner [enable disable] protected_vlan [add delete] vlanid <vidlist> sub_ring raps_vlan <vlanid> tc_propagation state [enable disable] [add delete] sub_ring raps_vlan <vlanid> revertive [enable disable] timer {holdoff_time <millisecond 0 - 10000> guard_time <millisecond 10 - 2000 > wtr_time <min 5 - 12>}(1)]
config erps log [enable disable]
show erps {raps_vlan <vlanid> {sub_ring}}
config erps trap [enable disable]

30-1 enable erps

Description

This command is used to enable the global ERPS function on a switch. When both the global state and the specified ring ERPS state are enabled, the specified ring will be activated. The default state is disabled.

The global ERPS function cannot be enabled, when any ERPS ring on the device is enabled and the integrity of any ring parameter is not available.

For each ring with the ring state enabled when ERPS is enabled, the following integrity will be checked:

1. R-APS VLAN is created.
2. The Ring port is a tagged member port of the R-APS VLAN.
3. The RPL port is specified if the RPL owner is enabled.
4. The RPL port is not specified as virtual channel.

NOTE: The two functions, EEE and ERPS, are mutually exclusive.

Format

enable erps

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable ERPS:


```
DGS-3000-26TC:admin#enable erps
Command: enable erps

Success.

DGS-3000-26TC:admin#
```

30-2 disable erps

Description

This command is used to disable the global ERPS function on a switch.

Format

disable erps

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable ERPS:

```
DGS-3000-26TC:admin#disable erps
Command: disable erps

Success.

DGS-3000-26TC:admin#
```

30-3 create erps raps_vlan

Description

This command is used to create an R-APS VLAN on a switch. Only one R-APS VLAN should be used to transfer R-APS messages.

Note that the R-APS VLAN must already have been created by the create vlan command.

Format

create erps raps_vlan <vlanid 1-4094>

Parameters

<vlanid 1-4094> - Enter the VLAN which will be the R-APS VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an R-APS VLAN:

```
DGS-3000-26TC:admin#create erps raps_vlan 4094
Command: create erps raps_vlan 4094

Success.

DGS-3000-26TC:admin#
```

30-4 delete erps raps_vlan

Description

This command is used to delete an R-APS VLAN on a switch. When an R-APS VLAN is deleted, all parameters related to this R-APS VLAN will also be deleted. This command can only be issued when the ring is not active.

Format

delete erps raps_vlan <vlanid 1-4094>

Parameters

<vlanid 1-4094> - Enter the VLAN which will be the R-APS VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an R-APS VLAN:

```
DGS-3000-26TC:admin#delete erps raps_vlan 4094
Command: delete erps raps_vlan 4094

Success.

DGS-3000-26TC:admin#
```

30-5 config erps raps_vlan

Description

This command is used to configure the ERPS R-APS VLAN settings.

The ring MEL is one field in the R-APS PDU. Note that if CFM (Connectivity Fault Management) and ERPS are used at the same time, the R-APS PDU is one of a suite of Ethernet OAM PDU. The behavior for forwarding of R-APS PDU should follow the Ethernet OAM. If the MEL of R-APS PDU is not higher than the level of the MEP with the same VLAN on the ring ports, the R-APS PDU cannot be forwarded on the ring.

Restrictions apply for ports that are included in a link aggregation group. A link aggregation group can be configured as a ring port by specifying the master port of the link aggregation port. Only the master port can be specified as a ring port. If the specified link aggregation group is eliminated, the master port retains its ring port status. If the ring port configured on virtual channel, the ring which the port connects to will be considered as a sub-ring.

RPL port - Specify one of the R-APS VLAN ring ports as the RPL port. To remove an RPL port from an R-APS VLAN, use the none designation for rpl_port.

RPL owner - Specify the node as the RPL owner.

Note that the virtual channel cannot be configured as RPL. For example, if a ring port is configured on the virtual channel and the ring port is configured as an RPL port, an error message will be display and the configuration will fail.

The R-APS VLAN cannot be the protected VLAN. The protected VLAN can be one that has already been created, or it can be used for a VLAN that has not yet been created.

Holdoff timer - The Holdoff timer is used to filter out intermittent link faults when link failures occur during the protection switching process. When a ring node detects a link failure, it will start the holdoff timer and report the link failure event (R-APS BPDU with SF flag) after the link failure is confirmed within period of time specified.

Guard timer - Guard timer is used to prevent ring nodes from receiving outdated R-APS messages. This timer is used during the protection switching process after the link failure recovers. When the link node detects the recovery of the link, it will report the link failure recovery event (R-APS PDU with NR flag) and start the guard timer. Before the guard timer expires, all received R-APS messages are ignored by this ring node, except in the case where a burst of three R-APS event messages that indicates the topology of a sub-ring has changed and the node needs to flush FDB are received on the node. In this case the recovered link does not go into a blocking state. The Guard Timer should be greater than the maximum expected forwarding delay for which one R-APS message circles around the ring.

WTR timer - WTR timer is used to prevent frequent operation of the protection switch due to an intermittent defect. This timer is used during the protection switching process when a link failure recovers. It is only used by the RPL owner. When the RPL owner in protection state receives R-APS PDU with an NR flag, it will start the WTR timer. The RPL owner will block the original unblocked RPL port and start to send R-APS PDU with an RB flag after the link recovery is confirmed within this period of time.

Revertive mode- When revertive is enabled, the traffic link is restored to the working transport link. When revertive is disabled, the traffic link is allowed to use the RPL, after recovering from a failure.

When both the global state and the specified ring ERPS state are enabled, the specified ring will be activated. EEE, STP and LBD should be disabled on the ring ports before the specified ring is activated.

The ring cannot be enabled before the R-APS VLAN is created, and ring ports, RPL port, RPL owner, are configured. Note that these parameters cannot be changed when the ring is activated.

In order to guarantee correct operation, the following integrity will be checked when the ring is enabled and the global ERPS state is enabled.

1. R-APS VLAN is created.
2. The Ring port is the tagged member port of the R-APS VLAN.
3. The RPL port is specified if RPL owner is enabled.

Format

```
config erps raps_vlan <vlanid> [state [enable | disable] | ring_mel <value 0-7> | ring_port [west [<port> | virtual_channel] | east [<port> | virtual_channel]] | rpl_port [west | east | none] | rpl_owner [enable | disable] | protected_vlan [add | delete] vlanid <vidlist> | sub_ring raps_vlan <vlanid> tc_propagation state [enable | disable] | [add | delete] sub_ring raps_vlan <vlanid> | revertive [enable | disable] | timer {holdoff_time <millisecond 0 - 10000> | guard_time <millisecond 10 - 2000 > | wtr_time <min 5 - 12>}(1)]
```

Parameters

<vlanid 1-4094> - Enter the VLAN ID used here.

state - Specify to enable or disable the specified ring.

enable - Enable the state of the specified ring.

disable - Disable the state of the specified ring. The default value is disabled.

ring_mel - Specify the ring MEL of the R-APS function. The default ring MEL is 1.

<value 0-7> - Enter the ring MEL value here. This value should be between 0 and 7.

ring_port - Specify the ring port used.

west - Specify that the port or the virtual channel will be associated with the west ring port.

<port> - Enter the port number here.

virtual_channel - Specify that the virtual channel will be associated with the west ring port.

east - Specify that the port or the virtual channel will be associated with the east ring port.

<port> - Enter the port number here.

virtual_channel - Specify that the virtual channel will be associated with the east ring port.

rpl_port - Specify the RPL port used.

west - Specify the west ring port as the RPL port.

east - Specify the east ring port as the RPL port.

none - No RPL port on this node. By default, the node has no RPL port.

rpl_owner - Specify to enable or disable the RPL owner node.

enable - Specify the device as an RPL owner node.

disable - This node is not an RPL owner. By default, the RPS owner is disabled.

protected_vlan - Specify to add or delete the protected VLAN group.

add - Add VLANs to the protected VLAN group.

delete - Delete VLANs from the protected VLAN group.

vlanid - Specify the VLAN ID to be removed or added.

<vidlist> - Enter the VLAN ID list here.

sub_ring - Specify that the sub-ring is being configured.

raps_vlan - Specify the R-APS VLAN.

<vlanid> - Enter the VLAN ID used here.

tc_propogation - Specify to configure the state of the topology change propagation for the sub-ring.

state - Specify the propagation state of the topology change for the sub-ring.

enable - Enable the propagation state of the topology change for the sub-ring.

disable - Disable the propagation state of the topology change for the sub-ring.

add - Specify to add a topology change propagation rule.

delete - Specify to delete a topology change propagation rule.

sub_ring - Specify the sub-ring configuration information.

raps_vlan - Specify the R-APS VLAN.

<vlanid> - Enter the R-APS VLAN ID used here

revertive - Specify the state of the R-APS revertive option.

enable - Specify that the R-APS revertive option will be enabled.

disable - Specify that the R-APS revertive option will be disabled.

timer - Specify the R-APS timer used.

holdoff_time - Specify the holdoff time of the R-APS function. The default holdoff time is 0 millisecond.

<millisecond 0-10000> - Enter the hold off time value here. This value must be in the range of 0 to 10000 milliseconds.

guard_time - Specify the guard time of the R-APS function. The default guard time is 500 milliseconds.

<millisecond 10-2000> - Enter the guard time value here. This value must be in the range of 0 to 2000 milliseconds.

wtr_time - Specify the WTR time of the R-APS function.

<min 5 - 12> - Enter the WTR time range value here. The range is from 5 to 12 minutes. The default WTR time is 5 minutes.

Restrictions

Only Administrator, Operator and Power-User level users can issue this command.

Example

To configure the MEL of the ERPS ring for a specific R-APS VLAN:

```
DGS-3000-26TC:admin#config erps raps_vlan 4094 ring_mel 2
Command: config erps raps_vlan 4094 ring_mel 2

Success.

DGS-3000-26TC:admin#
```

To set the R-APS east ring port parameter to 7:

```
DGS-3000-26TC:admin#config erps raps_vlan 4094 ring_port east 7
Command: config erps raps_vlan 4094 ring_port east 7

Success.

DGS-3000-26TC:admin#
```

To configure the RPL port for a specific R-APS VLAN:

```
DGS-3000-26TC:admin#config erps raps_vlan 4094 rpl_port west
Command: config erps raps_vlan 4094 rpl_port west

Success.

DGS-3000-26TC:admin#
```

To configure the protected VLAN for a specific R-APS VLAN:

```
DGS-3000-26TC:admin# config erps raps_vlan 4094 protected_vlan add vlanid 10-20
Command: config erps raps_vlan 4094 protected_vlan add vlanid 10-20

Success.

DGS-3000-26TC:admin#
```

To configure the ERPS timers for a specific R-APS VLAN:

```
DGS-3000-26TC:admin#config erps raps_vlan 4094 timer holdoff_time 100 guard_time 1000
wtr_time 10
Command: config erps raps_vlan 4094 timer holdoff_time 100 guard_time 1000 wtr_time 10

Success.

DGS-3000-26TC:admin#
```

To configure the ring state of the ERPS:

```
DGS-3000-26TC:admin#config erps raps_vlan 4094 state enable
Command: config erps raps_vlan 4094 state enable

Success.

DGS-3000-26TC:admin#
```

To configure a sub-ring connected to another ring:

```
DGS-3000-26TC:admin# config erps raps_vlan 4094 add sub_ring raps_vlan 4093
Command: config erps raps_vlan 4094 add sub_ring raps_vlan 4093

Success.

DGS-3000-26TC:admin#
```

To configure the state of topology change propagation:

```
DGS-3000-26TC:admin# config erps raps_vlan 4094 sub_ring raps_vlan 4093 tc_propagation state
enable
Command: config erps raps_vlan 4094 sub_ring raps_vlan 4093 tc_propagation state enable

Success.

DGS-3000-26TC:admin#
```

30-6 config erps log

Description

This command is used to configure the log state of the ERPS events.

Format

config erps log [enable | disable]

Parameters

enable - Specify to enable an ERPS event in the log state.

disable - Specify to disable an ERPS event in the log state.

Restrictions

Only Administrator, Operator and Power-User level users can issue this command.

Example

To enable the ERPS log state:

```
DGS-3000-26TC:admin# config erps log enable
Command: config erps log enable

Success.

DGS-3000-26TC:admin#
```

30-7 show erps

Description

This command is used to display ERPS configuration and operation information.

The port state of the ring port may be as "Forwarding", "Blocking", and "Signal Fail". "Forwarding" indicates that traffic is able to be forwarded. "Blocking" indicates that traffic is blocked by ERPS and a signal failure is not detected on the port. "Signal Fail" indicates that a signal failure is detected on the port and traffic is blocked by ERPS.

This command displays both admin value and operational value of ring port. The admin value is the latest user configuration. The operational value is actual running configuration. Sometimes, modifying a ring needs more than one command. Before user configure complete, the current configuration may invalid. In this case, to avoid temporary loop, user configuration will not apply to state machine immediately. The ERPS will run protocol by previous configuration which is valid. If the admin value is different from the operational value, it means that the new configuration is not applied.

Both RPL port and RPL owner have admin value and operational value, the reason is same as ring port.

Save function will record the operational value if the operational value is different form the admin value.

Format

show erps {raps_vlan <vlanid> {sub_ring}}

Parameters

raps_vlan - (Optional) Specify the R-APS VLAN.

<vlanid> - Enter the VLAN ID used here.

sub_ring - (Optional) Display the sub-ring configuration information.

Restrictions

None.

Example

To display ERPS information:

```

DGS-3000-26TC:admin#show erps
Command: show erps

ERPS Information
Global Status      : Enabled
Log Status         : Disabled
Trap Status        : Disabled
-----
R-APS VLAN         : 4092
Ring Status        : Enabled
Admin West Port    : 5
Operational West Port : 5 (Blocking)
Admin East Port    : 7
Operational East Port : 7 (Forwarding)
Admin RPL Port     : None
Operational RPL Port : West Port
Admin RPL Owner    : Enabled
Operational RPL Owner : Enabled
Protected VLANs    : 100-300, 4093, 4094
Ring MEL           : 2
Revertive          : Enabled
Holdoff Time       : 0 milliseconds
Guard Time         : 500 milliseconds
WTR Time           : 5 minutes
Current Ring State : Idle
-----
R-APS VLAN         : 4093
Ring Status        : Enabled
Admin West Port    : 5
Operational West Port : Virtual Channel
Admin East Port    : 10
Operational East Port : 10 (Forwarding)
Admin RPL Port     : None
Operational RPL Port : None
Admin RPL Owner    : Enabled
Operational RPL Owner : Disabled
Protected VLANs    : 200-220
Ring MEL           : 2
Revertive          : Enabled

```

```

Holdoff Time      : 0 milliseconds
Guard Time       : 500 milliseconds
WTR Time         : 5 minutes
Current Ring State : Idle
-----
R-APS VLAN       : 4094
Ring Status      : Enabled
Admin West Port  : Virtual Channel
Operational West Port : Virtual Channel
Admin East Port  : 12
Operational East Port : 12 (Forwarding)
Admin RPL Port   : None
Operational RPL Port : None
Admin RPL Owner  : Disabled
Operational RPL Owner : Disabled
Protected VLANs  : 250-300
Ring MEL         : 2
Revertive        : Enabled
Holdoff Time     : 0 milliseconds
Guard Time      : 500 milliseconds
WTR Time        : 5 minutes
Current Ring State : Idle
-----

```

Total Ring: 3

```
DGS-3000:N#show erps raps_vlan 4092 sub_ring
```

```
Command: show erps raps_vlan 4092 sub_ring
```

```
R-APS VLAN: 4092
```

Sub-Ring R-APS VLAN	TC Propagation State
4093	Enabled
4094	Enabled

Total Sub-Ring Connected: 2

```
DGS-30000-26TC:admin#
```

30-8 config erps trap

Description

This command is used to configure the trap state of ERPS events.

Format

```
config erps trap [enable | disable]
```

Parameters

enable - Specify to enable the ERPS trap state. The default value is disabled.

disable - Specify to disable the ERPS trap state

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the ERPS trap state:

```
DGS-3000-26TC:admin# config erps trap enable
Command: config erps trap enable

Success.

DGS-3000-26TC:admin#
```

Chapter 31 External Alarm Command List

```
config external_alarm channel <value 1-2> message <sentence 1-128>
show external_alarm
```

31-1 config external_alarm channel

Description

This command is used to configure external alarm message for a channel.

Format

```
config external_alarm channel <value 1-2> message <sentence 1-128>
```

Parameters

<value 1-2> - Enter the channel value to be configured.

message - Specify the message to be displayed on the console, log and trap.

<sentence 1-128> - Enter the message to be displayed on the console, log and trap.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure alarm message for channel 1:

```
DGS-3000-26TC:admin#config external_alarm channel 1 message External Alarm: UPS is Exhausted.
Command: config external_alarm channel 1 message External Alarm: UPS is Exhausted.
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

31-2 show external_alarm

Description

This command is used to display the status of external alarm.

Format

```
show external_alarm
```

Parameters

None.

Restrictions

None.

Example

To display the real-time status of external alarm:

```
DGS-3000-26TC:admin#show external_alarm
Command: show external_alarm

Channel      Status      Alarm Message
-----
1            Normal     External Alarm: UPS is Exhausted.
2            Normal     External Alarm 2
CTRL+C  ESC  q Quit  SPACE  n Next Page  p Previous Page  r Refresh
```

Chapter 32 Filter Command List

```
config filter netbios [<portlist> | all] state [enable | disable]
```

```
show filter netbios
```

```
config filter extensive_netbios [<portlist> | all] state [enable | disable]
```

```
show filter extensive_netbios
```

32-1 config filter netbios

Description

This command is used to configure the Switch to deny the NETBIOS packets on specific ports.

Format

```
config filter netbios [<portlist> | all] state [enable | disable]
```

Parameters

<portlist> - Enter the list of ports used.

all - Specify that all the ports will be used for the configuration.

state- - Specify the state of the filter to block the NETBIOS packet.

enable - Specify that the state will be enabled.

disable - Specify that the state will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure filter netbios state:

```
DGS-3000-26TC:admin#config filter netbios 1-10 state enable
Command: config filter netbios 1-10 state enable

Success.

DGS-3000-26TC:admin#
```

32-2 show filter netbios

Description

This command is used to display the NETBIOS filter state on the Switch.

Format

```
show filter netbios
```

Parameters

None.

Restrictions

None.

Example

To display the filter netbios list created on the Switch:

```
DGS-3000-26TC:admin#show filter netbios
Command: show filter netbios

Enabled ports: 1-3

DGS-3000-26TC:admin#
```

32-3 config filter extensive_netbios**Description**

This command is used to configure the Switch to filter NETBIOS packets over 802.3 frame on the specific ports.

Format

config filter extensive_netbios [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter the list of ports used for this configuration here.

all - Specify that all the ports will be used this configuration.

state - Specify to enable or disable the filter to block the NETBIOS packet over 802.3 frame.

enable - Specify that the filter state will be enabled.

disable - Specify that the filter state will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure filter extensive netbios state.

```
DGS-3000-26TC:admin#config filter extensive_netbios 1-10 state enable
Command: config filter extensive_netbios 1-10 state enable

Success.

DGS-3000-26TC:admin#
```

32-4 show filter extensive_netbios**Description**

This command is used to display the extensive netbios state on the Switch.

Format

show filter extensive_netbios

Parameters

None.

Restrictions

None.

Example

To display the extensive_state created on the Switch:

```
DGS-3000-26TC:admin#show filter extensive_netbios
Command: show filter extensive_netbios

Enabled ports: 1-3

DGS-3000-26TC:admin#
```

Chapter 33 Filter Database (FDB) Command List

create fdb <vlan_name 32> <macaddr> [port <port> drop]
create fdb vlanid <vidlist> <macaddr> [port <port> drop]
create multicast_fdb <vlan_name 32> <macaddr>
config multicast_fdb <vlan_name 32> <macaddr> [add delete] <portlist>
config fdb aging_time <sec 10-1000000>
config multicast_vlan_filtering_mode [vlanid <vidlist> vlan <vlan_name 32> all] [forward_all_groups forward_unregistered_groups filter_unregistered_groups]
delete fdb <vlan_name 32> <macaddr>
clear fdb [vlan <vlan_name 32> port <port> all]
show multicast_fdb {[vlan <vlan_name 32> vlanid <vidlist>] mac_address <macaddr>}
show fdb {[port <port> vlan <vlan_name 32> vlanid <vidlist> mac_address <macaddr> static aging_time security]}
show multicast_vlan_filtering_mode {[vlanid <vidlist> vlan <vlan_name 32>]}

33-1 create fdb

Description

This command is used to create a static entry in the unicast MAC address forwarding table (database).

Format

create fdb <vlan_name 32> <macaddr> [port <port> | drop]

Parameters

<vlan_name 32> - Enter a VLAN name associated with a MAC address. The maximum length of the VLAN name is 32 bytes.
<macaddr> - Enter the MAC address to be added to the static forwarding table.
port - The port number corresponding to the MAC destination address. The switch will always forward traffic to the specified device through this port.
<port> - Enter the port number corresponding to the MAC destination address here.
drop - Specify the action drop to be taken.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a unicast MAC forwarding entry:

```
DGS-3000-26TC:admin#create fdb default 00-00-00-00-01-02 port 5
Command: create fdb default 00-00-00-00-01-02 port 5

Success.

DGS-3000-26TC:admin#
```

To filter a unicast MAC:

```
DGS-3000-26TC:admin#create fdb default 00-00-00-00-01-02 drop
Command: create fdb default 00-00-00-00-01-02 drop

Success.

DGS-3000-26TC:admin#
```

33-2 create fdb vlanid

Description

This command is used to create a static entry in the unicast MAC address forwarding table (database).

Format

create fdb vlanid <vidlist> <macaddr> [port <port> | drop]

Parameters

<vidlist> - Enter a VLAN ID associated with a MAC address.
<macaddr> - Enter the MAC address to be added to the static forwarding table.
port - The port number corresponding to the MAC destination address. The switch will always forward traffic to the specified device through this port.
<port> - Enter the port number corresponding to the MAC destination address here.
drop - Specify the action drop to be taken.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a unicast MAC forwarding entry:

```
DGS-3000-26TC:admin#create fdb vlanid 1 00-00-00-00-02-02 port 5
Command: create fdb vlanid 1 00-00-00-00-02-02 port 5

Success.

DGS-3000-26TC:admin#
```

To filter a unicast MAC:

```
DGS-3000-26TC:admin#create fdb vlanid 1 00-00-00-00-02-02 drop
Command: create fdb vlanid 1 00-00-00-00-02-02 drop

Success.

DGS-3000-26TC:admin#
```

33-3 create multicast_fdb

Description

This command is used to create a static entry in the multicast MAC address forwarding table (database).

Format

create multicast_fdb <vlan_name 32> <macaddr>

Parameters

<vlan_name 32> - Enter the VLAN name on which the MAC address resides. The maximum name length is 32.
<macaddr> - Enter the multicasts MAC address to be added to the static forwarding table.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a multicast MAC forwarding entry to the default VLAN:

```
DGS-3000-26TC:admin#create multicast_fdb default 01-00-5E-00-00-00
Command: create multicast_fdb default 01-00-5E-00-00-00

Success.

DGS-3000-26TC:admin#
```

33-4 config multicast_fdb

Description

This command is used to configure the Switch's multicast MAC address forwarding database.

Format

config multicast_fdb <vlan_name 32> <macaddr> [add | delete] <portlist>

Parameters

<vlan_name 32> - Enter the VLAN name on which the MAC address resides. The maximum name length is 32.
<macaddr> - Enter the MAC address that will be added or deleted to the forwarding table.
add - Specify to add ports to the multicast forwarding table.
delete - Specify to remove ports from the multicast forwarding table.
<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a multicast MAC forwarding entry to the default VLAN on port 1 to 5:

```
DGS-3000-26TC:admin#config multicast_fdb default 01-00-5E-00-00-00 add 1-5
Command: config multicast_fdb default 01-00-5E-00-00-00 add 1-5

Success.

DGS-3000-26TC:admin#
```

33-5 config fdb aging_time

Description

This command is used to configure the MAC address table aging time. The aging time affects the learning process of the Switch. Dynamic forwarding table entries, which are made up of the source MAC addresses and their associated port numbers, are deleted from the table if they are not accessed within the aging time. The aging time can be from 10 to 1000000 seconds with a default value of 300 seconds. A very long aging time can result in dynamic forwarding table entries that are out-of-date or no longer exist. This may cause incorrect packet forwarding decisions by the Switch. If the aging time is too short however, many entries may be aged out too soon. This will result in a high percentage of received packets whose source addresses cannot be found in the forwarding table, in which case the Switch will broadcast the packet to all ports, negating many of the benefits of having a switch.

Format

config fdb aging_time <sec 10-1000000>

Parameters

<sec 10-1000000> - Enter the FDB age out time between 10 to 1000000 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the MAC address table aging time to 600 seconds:

```
DGS-3000-26TC:admin#config fdb aging_time 600
Command: config fdb aging_time 600

Success.

DGS-3000-26TC:admin#
```

33-6 config multicast vlan_filtering_mode

Description

This command is used to configure the multicast packet filtering mode for VLANs.

The registered group will be forwarded to the range of ports in the multicast forwarding database.

Format

config multicast vlan_filtering_mode [vlanid <vidlist> | vlan <vlan_name 32> | all] [forward_all_groups | forward_unregistered_groups | filter_unregistered_groups]

Parameters

vlanid - Specify a list of VLANs to be configured.

<vidlist> - Enter the VLAN ID list here.

vlan - Specify the name of the VLAN. The maximum name length is 32.

<vlan_name 32> - Enter the VLAN name can be up to 32 characters long.

all - Specify all configured VLANs.

forward_all_groups - Both the registered group and the unregistered group will be forwarded to all member ports of the specified VLAN where the multicast traffic comes in.

forward_unregistered_groups - The unregistered group will be forwarded to all member ports of the VLAN where the multicast traffic comes in.

filter_unregistered_groups - The unregistered group will be filtered.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the multicast packet filtering mode to filter all unregistered multicast groups for the VLAN 200 to 300:

```
DGS-3000-26TC:admin#config multicast vlan_filtering_mode vlanid 200-300
filter_unregistered_groups
Command: config multicast vlan_filtering_mode vlanid 200-300 filter_unregistered_groups

Success.

DGS-3000-26TC:admin#
```

33-7 delete fdb**Description**

This command is used to delete a static entry from the forwarding database.

Format

delete fdb <vlan_name 32> <macaddr>

Parameters

<vlan_name 32> - Enter VLAN name on which the MAC address resides. The maximum name length is 32.

<macaddr> - Enter the multicast MAC address to be deleted from the static forwarding table.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a static FDB entry:

```
DGS-3000-26TC:admin#delete fdb default 00-00-00-00-01-02
Command: delete fdb default 00-00-00-00-01-02

Success.

DGS-3000-26TC:admin#
```

33-8 clear fdb

Description

This command is used to clear the Switch's forwarding database for dynamically learned MAC addresses.

Format

clear fdb [vlan <vlan_name 32> | port <port> | all]

Parameters

-
- vlan** - Clears the FDB entry by specifying the VLAN name.
<vlan_name 32> - Enter the VLAN name on which the MAC address resides. The maximum name length is 32.

 - port** - Clears the FDB entry by specifying the port number.
<port> - Enter the port number corresponding to the MAC destination address. The switch will always forward traffic to the specified device through this port.

 - all** - Clears all dynamic entries in the Switch's forwarding database.
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear all FDB dynamic entries:

```
DGS-3000-26TC:admin#clear fdb all
Command: clear fdb all

Success.

DGS-3000-26TC:admin#
```

33-9 show multicast_fdb

Description

This command is used to display the multicast forwarding database of the Switch.

Format

show multicast_fdb {[vlan <vlan_name 32> | vlanid <vidlist>] | mac_address <macaddr>}

Parameters

-
- vlan** - (Optional) The name of the VLAN on which the MAC address resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.
-

vlanid - (Optional) Displays the entries for the VLANs indicated by VID list.

<vidlist> - Enter the VLAN ID list here.

mac_address - (Optional) Specify a MAC address, for which FDB entries will be displayed.

<macaddr> - Enter the MAC address here.

If no parameter is specified, all multicast FDB entries will be displayed.

Restrictions

None.

Example

To display the multicast MAC address table:

```
DGS-3000-26TC:admin#show multicast_fdb
Command: show multicast_fdb

VLAN Name       : default
MAC Address     : 01-00-5E-00-00-00
Egress Ports    : 1-5
Mode            : Static

Total Entries: 1

DGS-3000-26TC:admin#
```

33-10 show fdb

Description

This command is used to display the current unicast MAC address forwarding database.

Format

show fdb {[**port** <port> | **vlan** <vlan_name 32> | **vlanid** <vidlist> | **mac_address** <macaddr> | **static** | **aging_time** | **security**]}

Parameters

port - (Optional) Displays the entries for a specified port.

<port> - Enter the port number here.

vlan - (Optional) Displays the entries for a specific VLAN. The maximum name length is 32.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Displays the entries for the VLANs indicated by VID list.

<vidlist> - Enter the VLAN ID list here.

mac_address - (Optional) Displays a specific MAC address.

<macaddr> - Enter the MAC address here.

static - (Optional) Displays all permanent entries.

aging_time - (Optional) Displays the unicast MAC address aging time.

security - (Optional) Displays the FDB entries that are created by the security module.

If no parameter is specified, system will display the unicast address table.

Restrictions

None.

Example

To display the FDB table:

```
DGS-3000-26TC:admin#show fdb
Command: show fdb

Unicast MAC Address Aging Time = 300

VID  VLAN Name                MAC Address           Port  Type      Status
----  -
1    default                    00-01-02-03-04-00    cpu   Self      Forward
1    default                    00-23-7D-BC-08-44    1     Dynamic  Forward
1    default                    00-23-7D-BC-2E-18    1     Dynamic  Forward
1    default                    00-26-5A-AE-CA-1C    1     Dynamic  Forward
1    default                    60-33-4B-C4-52-1A    1     Dynamic  Forward

Total Entries: 5

DGS-3000-26TC:admin#
```

To display the security FDB table:

```
DGS-3000-26TC:admin#show fdb security
Command: show fdb security

VID  MAC Address           Port  Type      Status      Security Module
----  -
1    00-00-00-10-00-01    1     Dynamic  Drop        802.1X
1    00-00-00-10-00-02    2     Static   Forward     WAC
1    00-00-00-10-00-04    4     Static   Forward     Port Security
1    00-00-00-10-00-0A    5     Static   Forward     MAC-based Access Control
1    00-00-00-10-00-06    6     Dynamic  Drop        Compound Authentication

Total Entries: 5

DGS-3000-26TC:admin#
```

33-11 show multicast vlan_filtering_mode

Description

This command is used to show the multicast packet filtering mode for VLANs.

NOTE: A product supports the multicast VLAN filtering mode could not support the port filtering mode at the same time.

Format

```
show multicast vlan_filtering_mode {[vlanid < vidlist> | vlan <vlan_name 32>]}
```

Parameters

vlanid - (Optional) Specify a list of VLANs to be configured.
<vidlist> - Enter the VLAN ID list here.

vlan - (Optional) Specify the name of the VLAN. The maximum name length is 32.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

If no parameter is specified, the device will show all multicast filtering settings in the device.

Restrictions

None.

Example

To show the multicast `vlan_filtering_mode` for VLANs:

```
DGS-3000-26TC:admin#show multicast vlan_filtering_mode
Command: show multicast vlan_filtering_mode

VLAN ID/VLAN Name                Multicast Filter Mode
-----
1 /default                        forward_unregistered_groups

DGS-3000-26TC:admin#
```

Chapter 34 Flash File System (FFS) Command List

show storage_media_info
md {<drive_id>} <pathname>
rd {<drive_id>} <pathname>
cd {<pathname>}
dir {<drive_id>} {<pathname>}
rename {<drive_id>} <pathname> <filename>
del {<drive_id>} <pathname> {recursive}
erase {<drive_id>} <pathname>
move {<drive_id>} <pathname> {<drive_id>} <pathname>
copy {<drive_id>} <pathname> {<drive_id>} <pathname>

34-1 show storage_media_info

Description

This command is used to display the information of the storage media available on the system. The information for a media includes the drive number, the media identification.

Format

show storage_media_info

Parameters

None.

Restrictions

None.

Example

To display the storage media's information:

```
DGS-3000-26TC:admin#show storage_media_info
Command: show storage_media_info

Drive  Media Type      Size  Label      FS Type
-----  -----
c:/    Flash            28 MB             FFS

DGS-3000-26TC:admin#
```

34-2 md

Description

This command is used to create a directory.

Format

md {<drive_id>} <pathname>

Parameters

<drive_id> - (Optional) Enter the drive ID used, for example, C:.

<pathname> - Enter the directory. The path name can be specified either as a full path name or partial name. For partial path name, it indicates the file is in the current directory. The drive ID also included in this parameter, for example, c:/config/boot-up.cfg.

Restrictions

Only Administrators and Operators can issue this command.

Example

To make a directory:

```
DGS-3000-26TC:admin#md c:/abc
Command: md c:/abc

Success.

DGS-3000-26TC:admin#
```

34-3 rd

Description

This command is used to remove a directory. If there are files still existing in the directory, this command will fail and return error message.

Format

rd {<drive_id>} <pathname>

Parameters

<drive_id> - (Optional) Enter the drive ID used, for example, C:.

<pathname> - Enter the directory to be removed. The path name can be specified either as a full path name or partial name. For partial path name, it indicates the file is in the current directory.

Restrictions

Only Administrators and Operators can issue this command.

Example

To remove a directory:

```
DGS-3000-26TC:admin#rd c:/abc
Command: rd c:/abc

Success.

DGS-3000-26TC:admin#
```

34-4 cd

Description

This command is used to change the current directory. The current directory is changed under the current drive. If you want to change the working directory to the directory in another drive, then you need to change the current drive to the desired drive, and then change the current directory. The current drive and current directory will be displayed if the <pathname> is not specified.

Format

cd {<pathname>}

Parameters

<pathname> - (Optional) Enter the directory to be navigated to. The path name can be specified either as a full path name or partial name. For partial path name, it indicates the file is in the current directory.

Restrictions

None.

Example

To change to other directory or display current directory path:

```
DGS-3000-26TC:admin#cd
Command: cd

Current work directory: "/c:".

DGS-3000-26TC:admin#
```

34-5 dir

Description

This command is used to list all the files located in a directory of a drive.

If pathname is not specified, then all of the files in the specified drive will be displayed. If none of the parameters are specified, the files in the current drive will be displayed.

Format

dir {<drive_id>} {<pathname>}

Parameters

<drive_id> - (Optional) Enter the drive ID used, for example, C:.

<pathname> - (Optional) Enter the directory to be displayed. The path name can be specified either as a full path name or partial name. For partial path name, it indicates the file is in the current directory.

Restrictions

None.

Example

List the files:

```
DGS-3000-26TC:admin#dir
Command: dir

Directory of /c:

Idx  Info      Attr Size      Update Time      Name
---  ---      -
  1  RUN(*)   -rw- 5491536  2000/01/01 00:41:03 runtime.had
  2  CFG(*)   -rw- 31142    2000/01/01 02:19:40 config.cfg
  3                   d---          2000/01/01 00:00:16 system

29618 KB total (24127 KB free)
(*) -with boot-up info      (b) -with backup info

DGS-3000-26TC:admin#
```

34-6 rename

Description

This command is used to rename a file. Note that for standalone device, the unit argument is not needed. This command is used to rename a file in the file system. The pathname Specify the file (in path form) to be renamed and the filename Specify the new filename. If the pathname is not a full path, then it refers to a path under the current directory for the drive. The renamed file will stay in the same directory.

Format

rename {<drive_id>} <pathname> <filename>

Parameters

<drive_id> - (Optional) Enter the drive ID used, for example, C:.

<pathname> - Enter the file (in path form) to be renamed.

<filename> - Enter the new name of the file.

Restrictions

Only Administrators and Operators can issue this command.

Example

To rename a file:

```
DGS-3000-26TC:admin#rename run.had run1.had
Command: rename run.had run1.had

Success.

DGS-3000-26TC:admin#
```

34-7 del

Description

This command is used to delete a file, either physically or softly. It is also used to delete a directory and its contents. If two files with the same name under the same directory are softly deleted sequentially, only the last one will exist. Deleting, copying, renaming or moving the already softly deleted file is not acceptable.

System will prompt if the target file is a firmware or configuration file of which the type is boot-up.

Format

del {<drive_id>} <pathname> {recursive}

Parameters

<drive_id> - (Optional) Enter the drive ID used, for example, C:.

<pathname> - Enter the file or directory to be deleted. If it is specified in the associated form, then it is related to the current directory.

recursive - (Optional) Specify to delete a directory and its contents, even if it's not empty.

Restrictions

Only Administrators and Operators can issue this command.

Example

Delete a directory with parameter "recursive":

```

DGS-3000-26TC:admin#dir
Command: dir

Directory of / c:

Idx Info      Attr Size      Update Time      Name
-----
 1           drw- 0          2000/04/02 06:02:04 12
 2 CFG(*)    -rw- 29661       2000/04/01 05:54:38 config.cfg
 3 RUN(*)    -rw- 4879040   2000/03/26 03:15:11 runtime.had
 4           d--- 0          2000/04/01 05:17:36 system

29618 KB total (24727 KB free)
(*) -with boot-up info          (b) -with backup info

DGS-3000-26TC:admin#del 12 recursive
Command: del 12 recursive

Success.

DGS-3000-26TC:admin#dir
Command: dir

Directory of / c:

Idx Info      Attr Size      Update Time      Name
-----
 1 CFG(*)    -rw- 29661       2000/04/01 05:54:38 config.cfg
 2 RUN(*)    -rw- 4879040   2000/03/26 03:15:11 runtime.had
 3           d--- 0          2000/04/01 05:17:36 system

29618 KB total (24727 KB free)
(*) -with boot-up info          (b) -with backup info

DGS-3000-26TC:admin#

```

34-8 erase

Description

This command is used to delete a file stored in the file system.

System will prompt if the target file is a FW or configuration whose type is boot-up.

Format

erase {<drive_id>} <pathname>

Parameters

<drive_id> - (Optional) Enter the drive ID used, for example, C:.

<pathname> - Enter the file to be deleted. If it is specified in the associated form, then it is related to the current directory.

Restrictions

Only Administrators and Operators can issue this command.

Example

To erase a file:

```
DGS-3000-26TC:admin#dir
Command: dir

Directory of /c:

Idx Info      Attr Size      Update Time      Name
-----
 1 CFG(b)  -rw- 29661      2000/04/02 06:03:19 config2.cfg
 2 CFG(*)  -rw- 29661      2000/04/01 05:54:38 config.cfg
 3 RUN(*)  -rw- 4879040   2000/03/26 03:15:11 runtime.had
 4          d--- 0           2000/04/01 05:17:36 system

29618 KB total (24697 KB free)
(*) -with boot-up info      (b) -with backup info

DGS-3000-26TC:admin#erase config2.cfg
Command: erase config2.cfg

Success.

DGS-3000-26TC:admin#dir
Command: dir

Directory of /c:

Idx Info      Attr Size      Update Time      Name
-----
 1 CFG(*)  -rw- 29661      2000/04/01 05:54:38 config.cfg
 2 RUN(*)  -rw- 4879040   2000/03/26 03:15:11 runtime.had
 3          d--- 0           2000/04/01 05:17:36 system

29618 KB total (24727 KB free)
(*) -with boot-up info      (b) -with backup info

DGS-3000-26TC:admin#
```

34-9 move

Description

This command is used to move a file around the file system. Note that when a file is moved, it can be specified whether to rename at the same time.

Format

move {<drive_id>} <pathname> {<drive_id>} <pathname>

Parameters

<drive_id> - (Optional) Enter the drive ID, for example, C:.

<pathname> - Enter the file to be moved. The path name can be specified either as a full path name or partial name. Specify either as a full path name or partial name. For partial path name, it indicates the file is in the

current directory.

<drive_id> - (Optional) Enter the drive ID, for example, C:.

<pathname> - Enter the new path where the file will be moved. The path name can be. For partial path name, it indicates the file is in the current directory.

Restrictions

Only Administrators and Operators can issue this command.

Example

To move a file from one location to another location:

```
DGS-3000-26TC:admin#move c:/log.txt c:/log1.txt
```

```
Command: move c:/log.txt c:/log1.txt
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

34-10 copy

Description

This command is used to copy a file to another file in the file system.

Format

copy {<drive_id>} <pathname> {<drive_id>} <pathname>

Parameters

<drive_id> - (Optional) Enter the drive ID, for example, C:.

<pathname> - Enter the file to be copied. The path name can be specified either as a full path name or partial name. For partial path name, it indicates the file is in the current directory.

<drive_id> - (Optional) Enter the drive ID, for example, C:.

<pathname> - Enter the file to copy to. The path name can be specified either as a full path name or partial name. For partial path name, it indicates the file is in the current directory.

Restrictions

Only Administrators and Operators can issue this command.

Example

To copy a file:

```
DGS-3000-26TC:admin#copy c:/log.txt c:/log1.txt
```

```
Command: copy c:/log.txt c:/log1.txt
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

Chapter 35 Flex Link Command List

```
create flex_link group_id <value> primary_port <port> backup_port <port>
delete flex_link group_id <value>
show flex_link {group_id <value>}
```

35-1 create flex_link group_id

Description

This command is used to create a Flex Link group, and define a port or the master port in a link aggregation group as the primary or backup port in the Flex Link group.

NOTE: Flex Links does not interact with STP or LBD.

Format

```
create flex_link group_id <value> primary_port <port> backup_port <port>
```

Parameters

```
<value> - Enter the group ID of the Flex Link. The value is from 1 to 4.
primary_port - Specify a port or the master port in a link aggregation group to act as the primary port in the Flex Link group.
<port> - Enter a port to be the primary port in the Flex Link group.
backup_port - Specify a port or the master port in a link aggregation group to act as the primary port in the Flex Link group.
<port> - Enter a port to be the backup port in the Flex Link group.
```

Restrictions

Only Administrators, Operators and Power users can issue this command.

Examples

To create a Flex Link group:

```
DGS-3000-26TC:admin#create flex_link group_id 1 primary_port 1 backup_port 2
Command: create flex_link group_id 1 primary_port 1 backup_port 2

Success.

DGS-3000-26TC:admin#
```

35-2 delete flex_link group_id

Description

This command is used to delete a Flex Link group. When the link aggregation group is removed, the master port of that link aggregation group will still remain the primary or backup port of the Flex Link group.

Format

```
delete flex_link group_id <value>
```


Parameters

<value> - Enter the group ID of the Flex Link. The value is from 1 to 4.

Restrictions

Only Administrators, Operators and Power users can issue this command.

Examples

To remove a flex link group:

```
DGS-3000-26TC:admin#delete flex_link group_id 1
Command: delete flex_link group_id 1

Success.

DGS-3000-26TC:admin#
```

35-3 show flex_link

Description

This command is used to display Flex Link configuration.

Format

show flex_link {group_id <value>}

Parameters

group_id - (Optional) Specify the group ID of the Flex Link.
<value> - Enter the group ID of the Flex Link. The value is from 1 to 4.

Restrictions

None.

Examples

To display the Flex Link configuration:

```
DGS-3000-26TC:admin#show flex_link
Command: show flex_link

Group Primary Port          Backup Port          Status(Primary/Backup)
-----
1      1                      2                    Active/Inactive

Total Entries:1

DGS-3000-26TC:admin#
```

Chapter 36 FTP Client Command List

download firmware_fromFTP [[<ipaddr> <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} src_file <path_filename 64> ftp:<string 128 >} {dest_file <path_filename 64> {boot_up}}
upload firmware_toFTP [[<ipaddr> <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file <path_filename 64> ftp: <string 128>} {src_file <pathname 64>}
download cfg_fromFTP [[<ipaddr> <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} src_file <path_filename 64> ftp:<string 128 >} {dest_file <path_filename 64>}
upload cfg_toFTP [[<ipaddr> <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file <path_filename 64> ftp: <string 128>} {src_file <path_filename 64>} {[include exclude begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include exclude begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include exclude begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}}}]}
upload log_toFTP [[<ipaddr> <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file <path_filename 64> ftp: <string 128>]
upload attack_log_toFTP [[<ipaddr> <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file <path_filename 64> ftp: <string 128>]

36-1 download firmware_fromFTP

Description

This command is used to download a firmware image file from the FTP server.

Format

download firmware_fromFTP [[<ipaddr> | <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} src_file <path_filename 64> | ftp:<string 128 >} {dest_file <path_filename 64> {boot_up}}

Parameters

<ipaddr> - Enter the IPv4 address of the FTP server here.
<ipv6addr> - Enter the IPv6 address of the FTP server here.
tcp_port - (Optional) Specify the TCP port number used for the FTP connection.
<tcp_port_number 1-65535> - Enter the TCP port number here. This value must be between 1 and 65535.
src_file - Specify the source file's name and path.
<path_filename 64> - Enter the source file's name and path here. This can be up to 64 characters long.
ftp - Specify the FTP connection details.
<string 128> - Enter the FTP connection details here. For example, john:123456@172.18.211.41:21/image/cfg.txt.
dest_file - (Optional) Specify the destination file name and path.
<path_filename 64> - Enter the destination file name and path here. This can be up to 64 characters long.
boot_up - (Optional) Specify that the firmware will be used as the boot-up firmware after the download was completed successfully.

Restrictions

Only Administrators can issue this command.

Examples

This example shows how to download a firmware file from an FTP server.

```
DGS-3000-26TC:admin# download firmware_fromFTP 10.54.71.1 tcp_port 21 px.had
Command: download firmware_fromFTP 10.54.71.1 tcp_port 21 px.had

Connecting to server..... Done.
User(Anonymous): john
Pass:*****
Download firmware..... Done. Do not power off!
Please wait, programming flash..... Done.

DGS-3000-26TC:admin#
```

This example shows how to download a firmware form an FTP server using a string.

```
DGS-3000-26TC:admin# download firmware_fromFTP ftp: john:123456@10.54.71.1:21/image/px.had
Command: download firmware_fromFTP ftp: john:123456@10.54.71.1:21/image/px.had

Connecting to server..... Done.
Download firmware..... Done. Do not power off!
Please wait, programming flash..... Done.

DGS-3000-26TC:admin#
```

36-2 upload firmware_toFTP

Description

This command is used to upload a firmware from the Switch to an FTP server.

Format

```
upload firmware_toFTP [[<ipaddr> | <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file
<path_filename 64> | ftp: <string 128>] {src_file <pathname 64>}
```

Parameters

<ipaddr> - Enter the IPv4 address of the FTP server here.
<ipv6addr> - Enter the IPv6 address of the FTP server here.
tcp_port - (Optional) Specify the TCP port number used for the FTP connection.
<tcp_port_number 1-65535> - Enter the TCP port number here. This value must be between 1 and 65535.
dest_file - Specify the destination file name and path.
<path_filename 64> - Enter the destination file name and path here. This can be up to 64 characters long.
ftp - Specify the FTP connection details.
<string 128> - Enter the FTP connection details here. For example, john:123456@172.18.211.41:21/image/cfg.txt.
src_file - (Optional) Specify the source file's name and path.
<pathname 64> - Enter the source file's name and path here. This can be up to 64 characters long.

Restrictions

Only Administrators and Operators can issue this command.

Example

This example shows how to upload a firmware file from the Switch to an FTP server.

```
DGS-3000-26TC:admin# upload firmware_toFTP ftp: john:123456@10.54.71.1:21/image/image.had
runtime.had
Command: upload firmware_toFTP ftp: john:123456@10.54.71.1:21/image/image.had runtime.had

Connecting to server..... Done.
Upload firmware..... Done.

DGS-3000-26TC:admin#
```

36-3 download cfg_fromFTP

Description

This command is used to download a configuration file from an FTP server.

Format

```
download cfg_fromFTP [[<ipaddr> | <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} src_file
<path_filename 64> | ftp: <string 128>] {dest_file <path_filename 64>}
```

Parameters

<ipaddr> - Enter the IPv4 address of the FTP server here.
<ipv6addr> - Enter the IPv6 address of the FTP server here.
tcp_port - (Optional) Specify the TCP port number used for the FTP connection.
<tcp_port_number 1-65535> - Enter the TCP port number here. This value must be between 1 and 65535.
src_file - Specify the source file's name and path.
<path_filename 64> - Enter the source file's name and path here. This can be up to 64 characters long.
ftp: - Specify the FTP connection details.
<string 128> - Enter the FTP connection details here. For example, john:123456@172.18.211.41:21/image/cfg.txt.
dest_file - (Optional) Specify the destination file name and path.
<path_filename 64> - Enter the destination file name and path here. This can be up to 64 characters long.

Restrictions

Only Administrators can issue this command.

Examples

This example shows how to download the configuration file from an FTP server.

```
DGS-3000-26TC:admin# download cfg_fromFTP 10.54.71.1 cfg01.txt 1
Command: download cfg_fromFTP 10.54.71.1 cfg01.txt 1

Connecting to server..... Done.
User(Anonymous): john
Pass:*****
Download configuration..... Done.

DGS-3000-26TC:admin#
```

This example shows how to download the configuration file from an FTP server using a string.

```
DGS-3000-26TC:admin# download cfg_fromFTP ftp: john:123456@10.90.90.15:21/cfg.txt 2
Command: download cfg_fromFTP ftp: john:123456@10.90.90.15:21/cfg.txt 2

Connecting to server..... Done.
Download configuration..... Done.

DGS-3000-26TC:admin#
```

36-4 upload cfg_toFTP

Description

This command is used to upload a configuration file from the Switch to an FTP server.

Format

```
upload cfg_toFTP [[<ipaddr> | <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file <path_filename 64> | ftp: <string 128>] {src_file <path_filename 64>} {[include | exclude | begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include | exclude | begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}}}]
```

Parameters

<ipaddr> - Enter the IPv4 address of the FTP server here.

<ipv6addr> - Enter the IPv6 address of the FTP server here.

tcp_port - (Optional) Specify the TCP port number used for the FTP connection.

<tcp_port_number 1-65535> - Enter the TCP port number here. This value must be between 1 and 65535.

dest_file - Specify the destination file name and path.

<path_filename 64> - Enter the destination file name and path here. This can be up to 64 characters long.

ftp: - Specify the FTP connection details.

<string 128> - Enter the FTP connection details here. For example, john:123456@172.18.211.41:21/image/cfg.txt.

src_file - (Optional) Specify the source file's name and path.

<path_filename 64> - Enter the source file's name and path here. This can be up to 64 characters long.

include - (Optional) Specify to include a filter string.

exclude - (Optional) Specify to exclude a filter string.

begin - (Optional) Specify to use a filter string that begins with the string specified.

<filter_string 80> - Enter a filter string enclosed by the quotation mark symbol. Thus, the filter string itself cannot contain the quotation mark character. The filter string is case sensitive.

<filter_string 80> - Enter a filter string enclosed by the quotation mark symbol.

<filter_string 80> - Enter a filter string enclosed by the quotation mark symbol.

Restrictions

Only Administrators and Operators can issue this command.

Examples

This example shows how to upload the configuration file to an FTP server in the interactive mode.

```
DGS-3000-26TC:admin# upload cfg_toFTP 10.90.90.15 cfg.txt
Command: upload cfg_toFTP 10.90.90.15 cfg.txt

Connecting to server..... Done.
User(Anonymous): john
Password:*****
Upload configuration..... Done.

DGS-3000-26TC:admin#
```

This example shows how to upload the configuration file to an FTP server using a string.

```
DGS-3000-26TC:admin# download cfg_fromFTP ftp: john:123456@10.90.90.15:21/cfg/ cfg.txt
config_id 2
Command: download cfg_fromFTP ftp: john:123456@10.90.90.15:21/cfg/cfg.txt config_id 2

Connecting to server..... Done.
Download configuration..... Done.

DGS-3000-26TC:admin#
```

This example shows how to upload the configuration file to an FTP server using a string and the filter expression.

```
DGS-3000-26TC:admin# download cfg_fromFTP ftp: john:123456@10.90.90.15:21/cfg/cfg.txt
config_id 2 include "VLAN" "ipif" exclude "fdb"
Command: download cfg_fromFTP ftp: john:123456@10.90.90.15:21/cfg/cfg.txt config_id 2 include
"VLAN" "ipif" exclude "fdb"

Connecting to server..... Done.
Download configuration..... Done.

DGS-3000-26TC:admin#
```

36-5 upload log_toFTP

Description

This command is used to upload a log file from the Switch to an FTP server.

Format

```
upload log_toFTP [[<ipaddr> | <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file <path_filename 64> | ftp: <string 128>]
```

Parameters

<ipaddr> - Enter the IPv4 address of the FTP server here.

<ipv6addr> - Enter the IPv6 address of the FTP server here.

tcp_port - (Optional) Specify the TCP port number used for the FTP connection.
<tcp_port_number 1-65535> - Enter the TCP port number here. This value must be between 1 and 65535.

dest_file - Specify the destination file name and path.
<path_filename 64> - Enter the destination file name and path here. This can be up to 64 characters long.

ftp - Specify the FTP connection details.
<string 128> - Enter the FTP connection details here. For example,
john:123456@172.18.211.41:21/image/cfg.txt.

Restrictions

Only Administrators and Operators can issue this command.

Examples

This example shows how to upload the log file to an FTP server.

```
DGS-3000-26TC:admin# upload log_toFTP 10.90.90.15 d:/log.txt
Command: upload log_toFTP 10.90.90.15 d:/log.txt

Connecting to server..... Done.
User(Anonymous): john
Pass:*****
Upload log..... Done.

DGS-3000-26TC:admin#
```

This example shows how to upload the log file to an FTP server using a string.

```
DGS-3000-26TC:admin# upload log_toFTP ftp: john:123456@10.90.90.15:21/log/log.txt
Command: upload log_toFTP ftp: john:123456@10.90.90.15:21/log/log.txt

Connecting to server..... Done.
Upload log..... Done.

DGS-3000-26TC:admin#
```

36-6 upload attack_log_toFTP

Description

This command is used to upload the attack log from the Switch to an FTP server.

Format

upload attack_log_toFTP [[<ipaddr> | <ipv6addr>] {tcp_port <tcp_port_number 1-65535>} dest_file <path_filename 64> | ftp: <string 128>]

Parameters

<ipaddr> - Enter the IPv4 address of the FTP server here.

<ipv6addr> - Enter the IPv6 address of the FTP server here.

tcp_port - (Optional) Specify the TCP port number used for the FTP connection.

<tcp_port_number 1-65535> - Enter the TCP port number here. This value must be between 1 and 65535.

dest_file - Specify the destination file name and path.

<path_filename 64> - Enter the destination file name and path here. This can be up to 64 characters long.

ftp - Specify the FTP connection details.

<string 128> - Enter the FTP connection details here. For example, john:123456@172.18.211.41:21/image/cfg.txt.

Restrictions

Only Administrators and Operators can issue this command.

Examples

This example shows how to upload the attack log to an FTP server.

```
DGS-3000-26TC:admin# upload attack_log_toFTP 10.90.90.15 log.txt
Command: upload attack_log_toFTP 10.90.90.15 log.txt

Connecting to server..... Done.
User(Anonymous): john
Pass:*****
Upload Log..... Done.

DGS-3000-26TC:admin#
```

This example shows how to upload the attack log to an FTP server using a string.

```
DGS-3000-26TC:admin# upload attack_log_toFTP ftp: john:123456@10.90.90.15:21/log.txt
Command: upload attack_log_toFTP ftp: john:123456@10.90.90.15:21/log.txt

Connecting to server..... Done.
Upload log..... Done.

DGS-3000-26TC:admin#
```


Chapter 37 Gratuitous ARP Command List

```

config gratuitous_arp send ipif_status_up [enable | disable]
config gratuitous_arp send dup_ip_detected [enable | disable]
config gratuitous_arp learning [enable | disable]
config gratuitous_arp send periodically ipif <ipif_name 12> interval <value 0-65535>
enable gratuitous_arp {ipif <ipif_name 12>} {trap | log}(1)
disable gratuitous_arp {ipif <ipif_name 12>} {trap | log}(1)
show gratuitous_arp {ipif <ipif_name 12>}

```

37-1 config gratuitous_arp send ipif_status_up

Description

This command is used to enable or disable the sending of gratuitous ARP packets when the IP interface's status is up. This is used to automatically announce the interface's IP address to other nodes. Only one gratuitous ARP packet will be broadcasted.

Format

```
config gratuitous_arp send ipif_status_up [enable | disable]
```

Parameters

enable - Enables the sending of gratuitous ARP packets when the IP interface's status is up. This is the default value.

disable - Disables the sending of gratuitous ARP packets when the IP interface's status is up.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable send gratuitous ARP request in normal situation:

```

DGS-3000-26TC:admin#config gratuitous_arp send ipif_status_up enable
Command: config gratuitous_arp send ipif_status_up enable

Success.

DGS-3000-26TC:admin#

```

37-2 config gratuitous_arp send dup_ip_detected

Description

This command is used to enable or disable the sending of gratuitous ARP request packets while the duplicate IP is detected. The duplicate IP detection means that the system received an ARP request packet that is sent by an IP address that matches the system's own IP address. In this case, the system knows that somebody out there uses an IP address that is conflict with the system. In order to reclaim the correct host of this IP address, the system can send out the gratuitous ARP request packet for this duplicate IP address.

Format**config gratuitous_arp send dup_ip_detected [enable | disable]****Parameters**

enable - Enables the sending of gratuitous ARP request packet when duplicate IP is detected. This is the default value.

disable - Disables the sending of gratuitous ARP request packet when duplicate IP is detected.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable send gratuitous ARP request when duplicate IP is detected:

```
DGS-3000-26TC:admin#config gratuitous_arp send dup_ip_detected enable
Command: config gratuitous_arp send dup_ip_detected enable

Success.

DGS-3000-26TC:admin#
```

37-3 config gratuitous_arp learning

Description

This command is used to configure gratuitous ARP learning. Normally, the system only learns the ARP reply packet or a normal ARP request packet that asks for the MAC address that corresponds to the system's IP address. This command is used to enable or disable the learning of ARP entry in the ARP cache based on the received gratuitous ARP packet. The gratuitous ARP packet is sent by a source IP address that is identical to the IP that the packet is queried for. Note that, with the gratuitous ARP learning, the system will not learn new entry but only do the update on the ARP table based on the received gratuitous ARP packet.

Format**config gratuitous_arp learning [enable | disable]****Parameters**

enable - Enables the learning of ARP entry based on the received gratuitous ARP packet. This is the default value.

disable - Disables the learning of ARP entry based on the received gratuitous ARP packet.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To show the global GratuitousARP state:

```
DGS-3000-26TC:admin#config gratuitous_arp learning enable
Command: config gratuitous_arp learning enable

Success.

DGS-3000-26TC:admin#
```

37-4 config gratuitous_arp send periodically

Description

This command is used to configure the interval for the periodical sending of gratuitous ARP request packet. By default, the interval is 0.

Format

config gratuitous_arp send periodically ipif <ipif_name 12> interval <value 0-65535>

Parameters

ipif - Specify the interface name of L3 interface.

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

interval - Specify the periodically sending gratuitous ARP interval time in seconds. 0 means not to send gratuitous ARP periodically.

<value 0-65535> - Enter the gratuitous ARP interval time here. This value must be between 0 and 65535 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure gratuitous ARP interval to 5 for IPIF System:

```
DGS-3000-26TC:admin#config gratuitous_arp send periodically ipif System interval 5
Command: config gratuitous_arp send periodically ipif System interval 5

Success.

DGS-3000-26TC:admin#
```

37-5 enable gratuitous_arp

Description

This command is used to enable gratuitous ARP trap and log state. The switch can trap and log the IP conflict event to inform the administrator. By default, trap is disabled and event log is enabled.

Format

enable gratuitous_arp {ipif <ipif_name 12>} {trap | log}(1)

Parameters

ipif - (Optional) Specify the interface name of L3 interface

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

trap - Specify to enable the trap function.

log - Specify to enable the log function.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable system interface's gratuitous ARP log and trap:

```
DGS-3000-26TC:admin#enable gratuitous_arp ipif System trap log
Command: enable gratuitous_arp ipif System trap log

Success.

DGS-3000-26TC:admin#
```

37-6 disable gratuitous_arp

Description

This command is used to disable gratuitous ARP trap and log state. The switch can trap and log the IP conflict event to inform the administrator. By default, trap is disabled and event log is enabled.

Format

disable gratuitous_arp {ipif <ipif_name 12>} {trap | log}(1)

Parameters

ipif - (Optional) Specify the interface name of L3 interface

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

trap - Specify to disable the trap function.

log - Specify to disable the log function.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable system interface's gratuitous ARP log and trap:

```
DGS-3000-26TC:admin#disable gratuitous_arp ipif System trap log
Command: disable gratuitous_arp ipif System trap log

Success.

DGS-3000-26TC:admin#
```

37-7 show gratuitous_arp

Description

This command is used to display gratuitous ARP configuration.

Format

show gratuitous_arp {ipif <ipif_name 12>}

Parameters

ipif - (Optional) Specify the interface name of L3 interface.
<ipif_name> - Enter the IP interface name here.

Restrictions

None.

Example

To display gratuitous ARP log and trap state:

```
DGS-3000-26TC:admin#show gratuitous_arp
Command: show gratuitous_arp

Send on IPIF Status Up          : Enabled
Send on Duplicate IP Detected   : Enabled
Gratuitous ARP Learning         : Enabled

IP Interface Name : System
    Gratuitous ARP Trap                : Enabled
    Gratuitous ARP Log                  : Enabled
    Gratuitous ARP Periodical Send Interval : 5

Total Entries: 1

DGS-3000-26TC:admin#
```

Chapter 38 Historical Counter Command List

```
show historical_counter [packet | error] [ports <portlist>] [15_minute {slot <index 1-5>} | 1_day {slot <index 1-2>}]
show historical_utilization [cpu | memory] [15_minute {slot <index 1-5>} | 1_day {slot <index 1-2>}]
clear historical_counters ports [<portlist> | all]
```

38-1 show historical_counter

Description

This command is used to display the historical statistics count for the packets sent and received by the Switch. There are two kinds of statistics offered, 15-minute based and 1-day based. For statistics based on 15 minutes, there are five counting slots for the historical statistic count. Suppose that the system has been up for more than 75 mins, then slot 1 refers to the time since 15 minutes ago until now, and slot 2 refers to the time since 30 minutes ago until 15 minutes ago. For statistics based on a day, there are two counting slots for the historical statistic count. The counter for a slot represents statistics count of occurrence in that time slot.

Format

```
show historical_counter [packet | error] [ports <portlist>] [15_minute {slot <index 1-5>} | 1_day {slot <index 1-2>}]
```

Parameters

packet - Specify to display valid packets.

error - Specify to display error packets.

ports - Specify the port number.
<portlist> - Enter a port or range of ports to be displayed.

15_minute - Specify to display the 15-minute based statistics count. If there is no option specified, all 15-minutes time slots will be displayed.
slot - (Optional) Specify the slot number to display from 1 to 5.
<index 1-5> - Enter the slot number to display from 1 to 5.

1_day - Specify to display the daily based statistics count. If there is no option specified, all 1-day time slots will be displayed.
slot - (Optional) Specify the slot number to display from 1 to 2.
<index 1-2> - Enter the slot number to display from 1 to 2.

Restrictions

None.

Example

To display the statistics count of packets for the slot of the last 15 minutes:

```
DGS-3000-26TC:admin#show historical_counter packet ports 1 15_minute slot 1
```

```
Command: show historical_counter packet ports 1 15_minute slot 1
```

```
Port 1 15-Minute Slot 1
```

```
Starttime : 27 Jan 2000 22:32:51
```

```
Endtime   : 27 Jan 2000 22:18:11
```

Frame Size/Type	Frame Count
-----	-----
Pkts TX	0
Bytes TX	0
Pkts RX	43
Bytes RX	3437
64 RX	37
65-127 RX	3
128-255 RX	0
256-511 RX	3
512-1023 RX	0
1024-1518 RX	0
Unicast RX	0
Multicast RX	0
Broadcast RX	43

```
CTRL+C ESC q Quit SPACE n Next Page p Previous Page r Refresh
```

To display the statistics count of error packets for slot 2:

```
DGS-3000-26TC:admin#show historical_counter error ports 1 15_minute slot 2
```

```
Command: show historical_counter error ports 1 15_minute slot 2
```

```
Port 1 15-Minute Slot 2
```

```
Starttime : 27 Jan 2000 22:32:51
```

```
Endtime   : 27 Jan 2000 22:18:11
```

Frame Size/Type	Frame Count
-----	-----
Fragment RX	0
JabberPktsRX	0
Oversize Pkts RX	0
Undersize Pkts RX	0
Unknown Ctrl Pkts RX	0
Collision TX	0
Dropped Pkts	0

```
CTRL+C ESC q Quit SPACE n Next Page p Previous Page r Refresh
```

38-2 show historical_utilization

Description

This command is used to display the historical utilization of CPU and memory. There are two kinds of statistics offered, 15-minute based and 1-day based. For statistics based on 15 minutes, there are five counting slots for the historical statistic count. Suppose that the system has been up for more than 75 mins, then slot 1 refers to the time since 15 minutes ago until now, and slot 2 refers to the time since 30 minutes ago until 15 minutes ago. For

statistics based on a day, there are two counting slots for the historical statistic count. The statistics for the utilization count the average of CPU utilization and average of memory usage rate in that time slot.

Format

show historical_utilization [cpu | memory] [15_minute {slot <index 1-5>} | 1_day {slot <index 1-2>}]

Parameters

cpu	- Specify to display the utilization of CPU.
memory	- Specify to display the utilization of memory.
15_minute	- Specify to display the 15-minute based statistics count. If there is no option specified, all 15-minutes time slots will be displayed.
slot	- (Optional) Specify the slot number to display from 1 to 5.
<index 1-5>	- Enter the slot number to display from 1 to 5.
1_day	- Specify to display the daily based statistics count. If there is no option specified, all 1-day time slots will be displayed.
slot	- (Optional) Specify the slot number to display from 1 to 2.
<index 1-2>	- Enter the slot number to display from 1 to 2.

Restrictions

None.

Example

To display the CPU utilization of the 15-minutes based slot:

```
DGS-3000-26TC:admin#show historical_utilization cpu 15_minute
Command: show historical_utilization cpu 15_minute

CPU Utilization
-----
15-Minute Slot 1 (27 Jan 2000 23:00:51 - 27 Jan 2000 22:45:51) : 1 %
15-Minute Slot 2 (27 Jan 2000 22:45:51 - 27 Jan 2000 22:30:51) : 1 %
15-Minute Slot 3 (27 Jan 2000 22:30:51 - 27 Jan 2000 22:15:51) : 0 %
15-Minute Slot 4 (27 Jan 2000 22:15:51 - 27 Jan 2000 22:00:51) : 48 %
15-Minute Slot 5 (27 Jan 2000 22:00:51 - 27 Jan 2000 21:45:51) : 0 %

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

To display the CPU utilization of the recent daily-based slot:

```
DGS-3000-26TC:admin#show historical_utilization cpu 1_day
Command: show historical_utilization cpu 1_day

CPU Utilization
-----
1-Day Slot 1 (27 Jan 2000 23:06:16 - 27 Jan 2000 23:06:16) : 1 %
1-Day Slot 2 (26 Jan 2000 23:06:16 - 25 Jan 2000 23:06:16) : 0 %

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

To display the memory utilization of the 15-minutes based slot:


```
DGS-3000-26TC:admin#show historical_utilization memory 15_minute
Command: show historical_utilization memory 15_minute

Memory Utilization
-----
15-Minute Slot 1 (27 Jan 2000 23:00:51 - 27 Jan 2000 22:45:51) : 49 %
15-Minute Slot 2 (27 Jan 2000 22:45:51 - 27 Jan 2000 22:30:51) : 49 %
15-Minute Slot 3 (27 Jan 2000 22:30:51 - 27 Jan 2000 22:15:51) : 49 %
15-Minute Slot 4 (27 Jan 2000 22:15:51 - 27 Jan 2000 22:00:51) : 49 %
15-Minute Slot 5 (27 Jan 2000 22:00:51 - 27 Jan 2000 21:45:51) : 48 %

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

To display the memory utilization of the daily-based slot:

```
DGS-3000-26TC:admin#show historical_utilization memory 1_day
Command: show historical_utilization memory 1_day

Memory Utilization
-----
1-Day Slot 1 (27 Jan 2000 23:06:16 - 27 Jan 2000 23:06:16) : 48 %
1-Day Slot 2 (26 Jan 2000 23:06:16 - 25 Jan 2000 23:06:16) : 0 %

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

38-3 clear historical_counters ports

Description

This command is used to clear port historical counter statistics.

Format

clear historical_counters ports [<portlist> | all]

Parameters

<portlist> - Enter a port or range of ports to be selected.
all - Specify that all ports will be selected.

Restrictions

Only Administrators and Operators can issue this command.

Example

To clear the historical counter for all ports:

```
DGS-3000-26TC:admin#clear historical_counters all
```

```
Command: clear historical_counters all
```

```
Success.
```

```
DGS-3000-26TC:admin
```

Chapter 39 IGMP Snooping Command List

The Internet Group Management Protocol (IGMP) is a L3 protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. IGMP snooping is the process of listening to IGMP network traffic. IGMP snooping, as implied by the name, is a feature that allows a layer 2 switch to "listen in" on the IGMP conversation between hosts and routers by processing the layer 3 IGMP packets sent in a multicast network.

When IGMP snooping is enabled in a switch it analyzes all IGMP packets between hosts connected to the Switch and multicast routers in the network. When a switch hears an IGMP report from a host for a given multicast group, the Switch adds the host's port number to the multicast list for that group. And, when the Switch hears an IGMP Leave, it removes the host's port from the table entry.

```

config igmp_snooping [vlan_name <vlan_name 32> | vlanid <vlanid_list> | all ] {state [enable | disable] |
  fast_leave [enable | disable] | report_suppression [enable | disable] | proxy_reporting {state [enable | disable] |
  source_ip <ipaddr>}(1)}(1)
config igmp_snooping rate_limit [ports <portlist> | vlanid <vlanid_list>] [<value 1-1000> | no_limit]
config igmp_snooping querier [vlan_name <vlan_name 32> | vlanid <vlanid_list> | all] {query_interval <sec 1-
  65535> | max_response_time <sec 1-25> | robustness_variable <value 1-7> | last_member_query_interval
  <sec 1-25> | state [enable | disable] | version <value 1-3>}(1)
config igmp_access_authentication ports [all | <portlist>] state [enable | disable]
config router_ports [<vlan_name 32> | vlanid <vlanid_list> ] [add | delete] <portlist>
config router_ports forbidden [ <vlan_name 32> | vlanid <vlanid_list> ] [add | delete] <portlist>
enable igmp_snooping
disable igmp_snooping
create igmp_snooping static_group [vlan<vlan_name 32> | vlanid <vlanid_list>] <ipaddr>
delete igmp_snooping static_group [vlan<vlan_name 32> | vlanid <vlanid_list>] <ipaddr>
config igmp_snooping static_group [vlan <vlan_name 32> | vlanid <vlanid_list>] <ipaddr> [add | delete]
  <portlist>
show igmp_snooping static_group {[vlan <vlan_name 32> | vlanid <vlanid_list>] <ipaddr>}
config igmp_snooping data_driven_learning [all | vlan_name <vlan_name> | vlanid <vlanid_list>] {state
  [enable | disable] | aged_out [enable | disable] | expiry_time <sec 1-65535>}
config igmp_snooping data_driven_learning max_learned_entry <value 1-1024>
clear igmp_snooping data_driven_group [all | [vlan_name <vlan_name> | vlanid <vlanid_list>] [<ipaddr> | all]]
show igmp_snooping {[vlan <vlan_name 32> | vlanid <vlanid_list>]}
show igmp_snooping rate_limit [ports <portlist> | vlanid <vlanid_list>]
show igmp_snooping group {[vlan <vlan_name 32> | vlanid <vlanid_list> | ports <portlist>] {<ipaddr>}}
  {data_driven}
show igmp_snooping forwarding {[vlan <vlan_name 32> | vlanid <vlanid_list>]}
show router_ports [vlan <vlan_name 32> | vlanid <vlanid_list> | all ] {[static | dynamic | forbidden]}
show igmp_snooping statistic counter [vlan <vlan_name> | vlanid <vlanid_list> | ports <portlist>]
show igmp_access_authentication ports [all | <portlist>]
clear igmp_snooping statistics counter
show igmp_snooping host {[vlan <vlan_name 32> | vlanid <vlanid_list> | ports <portlist> | group <ipaddr>]}

```

39-1 config igmp_snooping

Description

This command is used to configure IGMP snooping on the Switch.

Format

```
config igmp_snooping [vlan_name <vlan_name 32> | vlanid <vlanid_list> | all ] {state [enable | disable] |
fast_leave [enable | disable] | report_suppression [enable | disable] | proxy_reporting {state [enable |
disable] | source_ip <ipaddr>}(1)}(1)
```

Parameters

vlan_name	- Specify the name of the VLAN for which IGMP snooping is to be configured. <vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.
vlanid	- Specify the VLAN ID for which IGMP snooping is to be configured. <vlanid_list> - Enter the VLAN ID here.
all	- Specify to use all configured VLANs.
state	- (Optional) Specify to enable or disable IGMP snooping for the chosen VLAN. enable - Specify to enable IGMP snooping for the chosen VLAN. disable - Specify to disable IGMP snooping for the chosen VLAN.
fast_leave	- Specify to enable or disable the IGMP snooping fast leave function. enable - Specify to enable the IGMP snooping fast leave function. If enabled, the membership is immediately removed when the system receives the IGMP leave message. disable - Specify to disable the IGMP snooping fast leave function.
report_suppression	- Specify whether to use IGMP report suppression to forward only one IGMP report per multicast router query to multicast devices. enable - Specify to use IGMP report suppression to forward only one IGMP report per multicast router query to multicast devices. disable - Disables IGMP report suppression to forward only one IGMP report per multicast router query to multicast devices.
proxy reporting	- Specify IGMP proxy reporting. If enabled, multiple IGMP reports or leave for a specific (S, G) will be integrated into one report only before sending to the router port. state - Specify to enable or disable the proxy reporting. enable - Specify to enable the proxy reporting. disable - Specify to disable the proxy reporting. source_ip - Specify the source IP of proxy reporting integrated report. Default value is zero IP. <ipaddr> - Enter the IP address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure IGMP snooping:

```
DGS-3000-26TC:admin#config igmp_snooping vlan_name default state enable
Command: config igmp_snooping vlan_name default state enable

Success.

DGS-3000-26TC:admin#
```

39-2 config igmp_snooping rate_limit

Description

This command is used to configure the rate of IGMP control packet that is allowed per port or per VLAN.

Format

```
config igmp_snooping rate_limit [ports <portlist> | vlanid <vlanid_list>] [<value 1-1000> | no_limit]
```

Parameters

ports - Specify a range of ports to be configured.

<portlist> - Enter the range of ports to be configured here.

vlanid - Specify a range of VLANs to be configured.

<vlanid_list> - Enter the VLAN ID list here.

<value 1-1000> - Enter the rate of the IGMP control packet that the Switch can process on a specific port/VLAN. The rate is specified in packets per second. The packets that exceed the limit will be dropped.

no_limit - Specify the rate of the IGMP control packet to be unlimited that the Switch can process on a specific port/VLAN. The rate is specified in packets per second. The packets that exceed the limit will be dropped. The default setting is **no_limit**.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the IGMP snooping per port rate_limit:

```
DGS-3000-26TC:admin#config igmp_snooping rate_limit ports 1 100
Command: config igmp_snooping rate_limit ports 1 100

Success.

DGS-3000-26TC:admin#
```

39-3 config igmp_snooping querier

Description

This command is used to configure the time in seconds between general query transmissions, the maximum time in seconds to wait for reports from members, and the permitted packet loss that guarantees IGMP snooping.

Format

config igmp_snooping querier [**vlan_name** <vlan_name 32> | **vlanid** <vlanid_list> | **all**] {**query_interval** <sec 1-65535> | **max_response_time** <sec 1-25> | **robustness_variable** <value 1-7> | **last_member_query_interval** <sec 1-25> | **state** [enable | disable] | **version** <value 1-3>}(1)

Parameters

vlan_name - Specify the name of the VLAN for which IGMP snooping querier is to be configured.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the VLAN ID for which IGMP snooping querier is to be configured.

<vlanid_list> - Enter the VLAN ID list here.

all - Specify all VLANs for which IGMP snooping querier is to be configured.

query_interval - (Optional) Specify the amount of time in seconds between general query transmissions

<sec 1-65535> - Enter the query interval value here. This value is from 1 to 65535 seconds. . The default setting is 125 seconds.

max_reponse_time - (Optional) Specify the maximum time in seconds to wait for reports from members. The default setting is 10 seconds.

<sec 1-25> - Enter the maximum response time value here. This value is from 1 to 25 seconds.

robustness_variable - (Optional) Provides fine-tuning to allow for expected packet loss on a subnet. The value of the robustness variable is used in calculating the following IGMP message intervals:

<value 1-7> - Enter the robustness variable value here. This value is from 1 to 7. By default, the robustness variable is set to 2. You might want to increase this value if you expect a subnet to be more loose.

- Group member interval—Amount of time that must pass before a multicast router decides there are no more members of a group on a network. This interval is calculated as follows: (robustness variable x query interval) + (1 x query response interval).

- Other querier present interval—Amount of time that must pass before a multicast router decides that there is no longer another multicast router that is the querier. This interval is calculated as follows: (robustness variable x query interval) + (0.5 x query response interval).
- Last member query count—Number of group-specific queries sent before the router assumes there are no local members of a group. The default number is the value of the robustness variable.

last_member_query_interval - (Optional) Specify the maximum amount of time between group-specific query messages, including those sent in response to leave-group messages. You might lower this interval to reduce the amount of time it takes a router to detect the loss of the last member of a group. On receiving a leave message, the router will assume there are no local members on the interface if there are no reports received after the response time (which is last member query interval * robustness variable)

<sec 1-25> - Enter the last member query interval value here. This value is from 1 to 25 seconds.

state - (Optional) If the state is enabled, it allows the Switch to be selected as an IGMP Querier (sends IGMP query packets). If the state is disabled, then the Switch cannot play the role as a querier. Note that if the Layer 3 router connected to the Switch provide only the IGMP proxy function but does not provide the multicast routing function, then this state must be configured as disabled. Otherwise, if the Layer 3 router is not selected as the querier, it will not send the IGMP query packet. Since it will not send the multicast-routing protocol packet, the port will be timed out as a router port.

enable - Specify to enable this state.

disable - Specify to disable this state.

version - (Optional) Specify the version of IGMP packet that will be sent by this device. If an IGMP packet received by the interface has a version higher than the specified version, this packet will be dropped.

<value 1-3> - Enter the version number here. This value is from 1 to 3.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the IGMP snooping querier:

```
DGS-3000-26TC:admin#config igmp_snooping querier vlan_name default query_interval 125 state
enable
Command: config igmp_snooping querier vlan_name default query_interval 125 state enable

Success.

DGS-3000-26TC:admin#
```

39-4 config igmp access_authentication ports

Description

This command is used to enable or disable the IGMP Access Control function for the specified ports. If the IGMP Access Control function is enabled and the Switch receives an IGMP JOIN message, the Switch will send the access request to the RADIUS server for authentication.

Format

config igmp access_authentication ports [all | <portlist>] state [enable | disable]

Parameters

all - Specify all ports to be configured.

<portlist> - Enter a range of ports to be configured.

state - Specify the state of the RADIUS authentication function on the specified ports.

enable - Enables the RADIUS authentication function on the specified ports.

disable - Disables the RADIUS authentication function on the specified ports.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable IGMP Access Control for all ports:

```
DGS-3000-26TC:admin#config igmp access_authentication ports all state enable
Command: config igmp access_authentication ports all state enable

Success.

DGS-3000-26TC:admin#
```

39-5 config router_ports

Description

This command is used to designate a range of ports as being connected to multicast-enabled routers. This will ensure that all packets with such a router as its destination will reach the multicast-enabled router, regardless of protocol, etc.

Format

config router_ports [<vlan_name 32>** | **vlanid <vlanid_list>**] [**add | delete**] **<portlist>****

Parameters

<vlan_name 32> - Enter the name of the VLAN on which the router port resides.
vlanid - Specify the ID of the VLAN on which the router port resides.
<vlanid_list> - Enter the VLAN ID here.

add - Specify to add the router ports.
delete - Specify to delete the router ports.

<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set up static router ports:

```
DGS-3000-26TC:admin#config router_ports default add 1-10
Command: config router_ports default add 1-10

Success.

DGS-3000-26TC:admin#
```

39-6 config router_ports_forbidden

Description

This command is used to designate a range of ports as being not connected to multicast-enabled routers. This ensures that the forbidden router port will not propagate routing packets out.

Format

config router_ports_forbidden [<vlan_name 32> | vlanid <vlanid_list>] [add | delete] <portlist>

Parameters

<vlan_name 32> - Enter the name of the VLAN on which the router port resides.

vlanid - Specify the ID of the VLAN on which the router port resides.

<vlanid_list> - Enter the VLAN ID list here.

add - Specify to add the router ports.

delete - Specify to delete the router ports.

<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set up port range 1-10 to forbidden router ports of default VLAN:

```
DGS-3000-26TC:admin#config router_ports_forbidden default add 11-12
Command: config router_ports_forbidden default add 11-12

Success.

DGS-3000-26TC:admin#
```

39-7 enable igmp_snooping

Description

This command is used to enable IGMP snooping on the Switch.

Format

enable igmp_snooping

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable IGMP snooping on the Switch:


```
DGS-3000-26TC:admin#enable igmp_snooping
Command: enable igmp_snooping

Success.

DGS-3000-26TC:admin#
```

39-8 disable igmp_snooping

Description

This command is used to disable IGMP snooping on the Switch. Disabling IGMP snooping allows all IGMP and IP multicast traffic to flood within a given IP interface.

Format

disable igmp_snooping

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable IGMP snooping on the Switch:

```
DGS-3000-26TC:admin#disable igmp_snooping
Command: disable igmp_snooping

Success.

DGS-3000-26TC:admin#
```

39-9 create igmp_snooping static_group

Description

This command is used to create an IGMP snooping static group. Member ports can be added to the static group. The static member and the dynamic member port form the member ports of a group.

The static group will only take effect when IGMP snooping is enabled on the VLAN. For those static member ports, the device needs to emulate the IGMP protocol operation to the querier, and forward the traffic destined to the multicast group to the member ports.

For a layer 3 device, the device is also responsible to route the packet destined for this specific group to static member ports.

The static member port will only affect V2 IGMP operation.

The Reserved IP multicast address 224.0.0.X must be excluded from the configured group.

The VLAN must be created first before a static group can be created.

Format

create igmp_snooping static_group [vlan<vlan_name 32> | vlanid <vlanid_list>] <ipaddr>

Parameters

vlan - Specify the name of the VLAN on which the router port resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the router port resides.
<vlanid_list> - Enter the VLAN ID here.

<ipaddr> - Enter the multicast group IP address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an IGMP snooping static group for VLAN 1, group 239.1.1.1:

```
DGS-3000-26TC:admin#create igmp_snooping static_group vlan default 239.1.1.1
Command: create igmp_snooping static_group vlan default 239.1.1.1

Success.

DGS-3000-26TC:admin#
```

39-10 delete igmp_snooping static_group**Description**

This command is used to delete an IGMP snooping multicast static group. The deletion of an IGMP snooping static group will not affect the IGMP snooping dynamic member ports for a group.

Format

delete igmp_snooping static_group [vlan<vlan_name 32> | vlanid <vlanid_list>] <ipaddr>

Parameters

vlan - Specify the name of the VLAN on which the router port resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the router port resides.
<vlanid_list> - Enter the VLAN ID list here.

<ipaddr> - Enter the multicast group IP address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an IGMP snooping static group for VLAN 1, group 239.1.1.1:

```
DGS-3000-26TC:admin#delete igmp_snooping static_group vlan default 239.1.1.1
Command: delete igmp_snooping static_group vlan default 239.1.1.1

Success.

DGS-3000-26TC:admin#
```

39-11 config igmp_snooping static_group

Description

This command is used to configure IGMP snooping static group. When a port is configured as a static member port, the IGMP protocol will not operate on this port. For example, suppose that a port is a dynamic member port learned by IGMP. If this port is configured as a static member later, then the IGMP protocol will stop operating on this port. The IGMP protocol will resume once this port is removed from static member ports.

The static member port will only affect V2 IGMP operation.

Format

```
config igmp_snooping static_group [vlan <vlan_name 32> | vlanid <vlanid_list>] <ipaddr> [add | delete]
<portlist>
```

Parameters

vlan - Specify the name of the VLAN on which the static group resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.
vlanid - Specify the ID of the VLAN on which the static group resides.
<vlanid_list> - Enter the VLAN ID here.
<ipaddr> - Enter the multicast group IP address (for Layer 3 switch).
add - Specify to add the member ports.
delete - Specify to delete the member ports.
<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To unset port range 9-10 from IGMP snooping static member ports for group 239.1.1.1 on default VLAN:

```
DGS-3000-26TC:admin#config igmp_snooping static_group vlan default 239.1.1.1 delete 9-10
Command: create igmp_snooping static_group vlan default 239.1.1.1 delete 9-10

Success.

DGS-3000-26TC:admin#
```

39-12 show igmp_snooping static_group

Description

This command is used to display the IGMP snooping multicast group static members.

Format

```
show igmp_snooping static_group {[vlan <vlan_name 32> | vlanid <vlanid_list>] <ipaddr>}
```

Parameters

vlan - Specify the name of the VLAN on which the static group resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the static group resides.
<vlanid_list> - Enter the VLAN ID here.

<ipaddr> - Enter the multicast group IP address.

Restrictions

None.

Example

To display all the IGMP snooping static groups:

```
DGS-3000-26TC:admin#show igmp_snooping static_group
VLAN ID/Name          IP Address          Static Member Ports
-----
1 / Default           239.1.1.1           9-10

Total Entries : 1

DGS-3000-26TC:admin#
```

39-13 config igmp_snooping data_driven_learning**Description**

This command is used to enable or disable the data driven learning of an IGMP snooping group.

When data-driven learning is enabled for the VLAN, when the Switch receives the IP multicast traffic on this VLAN, an IGMP snooping group will be created. That is, the learning of an entry is not activated by IGMP membership registration, but activated by the traffic. For an ordinary IGMP snooping entry, the IGMP protocol will take care of the aging out of the entry. For a data-driven entry, the entry can be specified not to be aged out or to be aged out by the aged timer.

When data driven learning is enabled, and the data driven table is not full, the multicast filtering mode for all ports is ignored. That is, the multicast packets will be forwarded to router ports. If the data driven learning table is full, the multicast packets will be forwarded according to the multicast filtering mode.

Note that if a data-driven group is created and IGMP member ports are learned later, the entry will become an ordinary IGMP snooping entry. That is, the aging out mechanism will follow the ordinary IGMP snooping entry.

Format

```
config igmp_snooping data_driven_learning [all | vlan_name <vlan_name> | vlanid <vlanid_list>] (state
[enable | disable] | aged_out [enable | disable] | expiry_time <sec 1-65535>)(1)
```

Parameters

all - Specify all VLANs to be configured.

vlan_name - Specify the VLAN name to be configured.
<vlan_name> - Enter the VLAN name here.

vlanid - Specify the VLAN ID to be configured.

<vlanid_list> - Enter the VLAN ID here.

state - (Optional) Specify to enable or disable the data driven learning of an IGMP snooping group.

enable - Specify to enable the data driven learning option. By default, the state is enabled.

disable - Specify to disable the data driven learning option.

aged_out - (Optional) Specify to enable or disable the aging out of the entry.

enable - Specify to enable the aging out of the entry.

disable - Specify to disable the aging out of the entry. By default, the state is disabled state.

expiry_time - (Optional) Specify the data driven group lifetime in seconds. This parameter is valid only when aged_out is enabled.

<sec 1-65535> - Enter the expiry time here. This value must be between 1 and 65535 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the data driven learning of an IGMP snooping group on the default VLAN:

```
DGS-3000-26TC:admin#config igmp_snooping data_driven_learning vlan_name default state enable
Command: config igmp_snooping data_driven_learning vlan_name default state enable

Success.

DGS-3000-26TC:admin#
```

39-14 config igmp_snooping data_driven_learning max_learned_entry

Description

This command is used to configure the maximum number of groups that can be learned by data driven. When the table is full, the system will stop the learning of the new data-driven groups. Traffic for the new groups will be dropped.

Format

config igmp_snooping data_driven_learning max_learned_entry <value 1-1024>

Parameters

<value 1-1024> - Enter the maximum number of groups that can be learned by data driven. This value must be between 1 and 1024. The default setting is 128.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the maximum number of groups that can be learned by data driven:

```
DGS-3000-26TC:admin#config igmp_snooping data_driven_learning max_learned_entry 50
Command: config igmp_snooping data_driven_learning max_learned_entry 50

Success.

DGS-3000-26TC:admin#
```

39-15 clear igmp_snooping data_driven_group

Description

This command is used to delete the IGMP snooping group(s) learned by data driven.

Format

```
clear igmp_snooping data_driven_group [all | [vlan_name <vlan_name> | vlanid <vlanid_list>] [<ipaddr> | all]]
```

Parameters

all - Specify all VLANs to which IGMP snooping groups will be deleted.

vlan_name - Specify the VLAN name.

<vlan_name> - Enter the VLAN name here.

vlanid - Specify the VLAN ID.

<vlanid_list> - Enter the VLAN ID here.

<ipaddr> - Enter the group's IP address learned by data driven.

all - Deletes all IGMP snooping groups of specified VLANs.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete all the groups learned by data-driven:

```
DGS-3000-26TC:admin#clear igmp_snooping data_driven_group all
Command: clear igmp_snooping data_driven_group all

Success.

DGS-3000-26TC:admin#
```

39-16 show igmp_snooping

Description

This command is used to display the current IGMP snooping configuration on the Switch.

Format

```
show igmp_snooping {[vlan <vlan_name 32> | vlanid <vlanid_list>]}
```

Parameters

vlan - (Optional) Specify the name of the VLAN for which you want to view the IGMP snooping configuration.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN for which you want to view the IGMP snooping configuration.

<vlanid_list> - Enter the VLAN ID list here.

If the VLAN is not specified, the system will display all current IGMP snooping configurations.

Restrictions

None.

Example

To show IGMP snooping:

```
DGS-3000-26TC:admin#show igmp_snooping
Command: show igmp_snooping

IGMP Snooping Global State           : Enabled
Data Driven Learning Max Entries     : 128

VLAN Name                            : default
Query Interval                       : 125
Max Response Time                    : 10
Robustness Value                     : 2
Last Member Query Interval           : 1
Querier State                        : Disabled
Querier Role                         : Non-Querier
Querier IP                           : 0.0.0.0
Querier Expiry Time                  : 0 secs
State                                : Disabled
Fast Leave                           : Disabled
Rate Limit                           : No Limitation
Report Suppression                   : Enabled
Version                              : 3
Data Driven Learning State           : Enabled
Data Driven Learning Aged Out        : Disabled
Data Driven Group Expiry Time        : 260

Total Entries: 1

DGS-3000-26TC:admin#
```

39-17 show igmp_snooping rate_limit

Description

This command is used to display the IGMP snooping rate limit setting.

Format

show igmp_snooping rate_limit [ports <portlist> | vlanid <vlanid_list>]

Parameters

ports - Specify the port range.

<portlist> - Enter the range of ports here.

vlanid - Specify the VLAN range..

<vlanid_list> - Enter the VLAN ID list here.

Restrictions

None.

Example

To display the IGMP snooping rate limit for ports 1 to 15:

```
DGS-3000-26TC:admin#show igmp_snooping rate_limit ports 1-15
Command: show igmp_snooping rate_limit ports 1-15

Port          Rate Limit
-----
1             No Limit
2             100
3             No Limit
4             No Limit
5             No Limit

Total Entries: 5
```

39-18 show igmp_snooping group

Description

This command is used to display the current IGMP snooping group configuration on the Switch.

Format

show igmp_snooping group {[vlan <vlan_name 32> | vlanid <vlanid_list> | ports <portlist>] {<ipaddr>}}
{data_driven}

Parameters

vlan - (Optional) Specify the name of the VLAN for which you want to view IGMP snooping group information. If VLAN, ports and IP address are not specified, the system will display all current IGMP snooping group information.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN for which you want to view IGMP snooping group information.

<vlanid_list> - Enter the VLAN ID list here.

ports - (Optional) Specify a list of ports for which you want to view IGMP snooping group information.

<portlist> - Enter the list of ports here.

<ipaddr> - (Optional) Enter the group IP address for which you want to view IGMP snooping group information.

data_driven - (Optional) If data_driven is specified, only data driven groups will be displayed.

Restrictions

None.

Example

To show IGMP snooping groups when IGMP v3 is supported:


```
DGS-3000-26TC:admin#show igmp_snooping group
Command: show igmp_snooping group

Source/Group           : 10.0.0.1/225.0.0.1
VLAN Name/VID          : default/1
Member Ports           : 5
UP Time                : 6
Expiry Time            : 254
Filter Mode            : INCLUDE

Source/Group           : 10.0.0.10/225.0.0.1
VLAN Name/VID          : default/1
Member Ports           : 5
UP Time                : 6
Expiry Time            : 254
Filter Mode            : INCLUDE

Source/Group           : NULL/239.255.255.250
VLAN Name/VID          : default/1
Member Ports           : 5
UP Time                : 2
Expiry Time            : 258
Filter Mode            : EXCLUDE

Total Entries: 3

DGS-3000-26TC:admin#
```

```
DGS-3000-26TC:admin#show igmp_snooping group data_driven
Command: show igmp_snooping group data_driven
Source/Group           : NULL/225.0.0.5
VLAN Name/VID          : default/1
Reports                : 0
Member Ports           :
Router Ports           : 24
UP Time                : 3 days 50 mins
Expiry Time            : 120 secs
Filter Mode            : EXCLUDE

Total Entries : 1

DGS-3000-26TC:admin#
```

To show IGMP snooping groups when only IGMP v2 is supported: The third item is a data-driven learned entry. If the member port list is empty, the multicast packets will be forwarded to the router ports. If the router port list is empty, the packets will be dropped.

```

DGS-3000-26TC:admin#show igmp_snooping group
Command: show igmp_snooping group

Source/Group           : NULL/226.0.0.1
VLAN Name/VID          : default/1
Member Ports           : 5
UP Time                : 10
Expiry Time            : 258
Filter Mode            : EXCLUDE

Source/Group           : NULL/226.0.0.2
VLAN Name/VID          : default/1
Member Ports           : 5
UP Time                : 9
Expiry Time            : 259
Filter Mode            : EXCLUDE

Source/Group           : NULL/226.0.0.3
VLAN Name/VID          : default/1
Member Ports           :
Router Ports           :
UP Time                : 1
Expiry Time            : 259
Filter Mode            : EXCLUDE

Source/Group           : NULL/239.255.255.250
VLAN Name/VID          : default/1
Member Ports           : 5
UP Time                : 1
Expiry Time            : 259
Filter Mode            : EXCLUDE

Total Entries: 4

DGS-3000-26TC:admin#

```

39-19 show igmp_snooping forwarding

Description

This command is used to display the Switch's current IGMP snooping forwarding table. It provides an easy way for users to check the list of ports that the multicast group that comes from a specific sources will be forwarded to. The packet comes from the source VLAN. They will be forwarded to the forwarding VLAN. The IGMP snooping further restricts the forwarding ports.

Format

show igmp_snooping forwarding {[vlan <vlan_name 32> | vlanid <vlanid_list>]}

Parameters

vlan - (Optional) Specify the name of the VLAN for which you want to view IGMP snooping forwarding table information.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN for which you want to view IGMP snooping forwarding table information.

<vlanid_list> - Enter the VLAN ID list here.

If no parameter is specified, the system will display all current IGMP snooping forwarding table entries of the Switch.

Restrictions

None.

Example

To show all IGMP snooping forwarding entries located on the Switch:

```
DGS-3000-26TC:admin#show igmp_snooping forwarding
Command: show igmp_snooping forwarding

VLAN Name      : default
Source IP      : *
Multicast Group: 225.0.0.0
Port Member    : 2,7

VLAN Name      : default
Source IP      : *
Multicast Group: 225.0.0.1
Port Member    : 2,5

VLAN Name      : default
Source IP      : *
Multicast Group: 225.0.0.2
Port Member    : 2,8

Total Entries : 3

DGS-3000-26TC:admin#
```

39-20 show router_ports

Description

This command is used to display the currently configured router ports on the Switch.

Format

show router_ports [vlan <vlan_name 32> | vlanid <vlanid_list> | all] {[static | dynamic | forbidden]}

Parameters

vlan - Specify the name of the VLAN on which the router port resides.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the router port resides.

<vlanid_list> - Enter the VLAN ID list here.

all - Specify all VLANs on which the router port resides.

static - (Optional) Displays router ports that have been statically configured.

dynamic - (Optional) Displays router ports that have been dynamically configured.

forbidden - (Optional) Displays forbidden router ports that have been statically configured.

If no parameter is specified, the system will display all currently configured router ports on the Switch.

Restrictions

None.

Example

To display router ports:

```

DGS-3000-26TC:admin#show router_ports all
Command: show router_ports all

VLAN Name           : default
Static Router Port  : 1-10
Dynamic Router Port :
    Router IP       : 10.0.0.1, 10.0.0.2, 10.0.0.3
Forbidden router port :

VLAN Name           : vlan2
Static router port   :
Dynamic router port  : 13
    Router IP       : 10.0.0.4, 10.0.0.5, 10.0.0.6
Forbidden router port :

Total Entries : 2

DGS-3000-26TC:admin#

```

39-21 show igmp_snooping statistics counter

Description

This command is used to display the statistics counter for IGMP protocol packets that are received by the Switch since IGMP snooping was enabled.

Format

show igmp_snooping statistic counter [vlan <vlan_name> | vlanid <vlanid_list> | ports <portlist>]

Parameters

-
- vlan** - Specify a VLAN to be displayed.
 <vlan_name> - Enter the VLAN name here.

 - vlanid** - Specify a list of VLANs to be displayed.
 <vlanid_list> - Enter the VLAN ID list here.

 - ports** - Specify a list of ports to be displayed.
 <portlist> - Enter the list of port to be displayed here.

Restrictions

None.

Example

To display the IGMP snooping statistics counter:

```
DGS-3000-26TC:admin#show igmp_snooping statistic counter vlanid 67
Command: show igmp_snooping statistic counter vlanid 67

VLAN Name          : VLAN67
-----
Group Number       : 0

Receive Statistics
  Query
    IGMP v1 Query           : 0
    IGMP v2 Query           : 0
    IGMP v3 Query           : 0
    Total                    : 0
    Dropped By Rate Limitation : 0
    Dropped By Multicast VLAN : 0

  Report & Leave
    IGMP v1 Report          : 0
    IGMP v2 Report          : 0
    IGMP v3 Report          : 0
    IGMP v2 Leave           : 0
    Total                    : 0
    Dropped By Rate Limitation : 0
    Dropped By Max Group Limitation : 0
    Dropped By Group Filter  : 0
    Dropped By Multicast VLAN : 0

Transmit Statistics
  Query
    IGMP v1 Query           : 0
    IGMP v2 Query           : 44
    IGMP v3 Query           : 0
    Total                    : 44

  Report & Leave
    IGMP v1 Report          : 0
    IGMP v2 Report          : 0
    IGMP v3 Report          : 0
    IGMP v2 Leave           : 0
    Total                    : 0

Total Entries : 1

DGS-3000-26TC:admin#
```

To display the IGMP snooping statistics counter for a port:

```

DGS-3000-26TC:admin#show igmp_snooping statistic counter ports 1
Command: show igmp_snooping statistic counter ports 1

Port #           : 1
-----
Group Number     : 0

Receive Statistics
  Query
    IGMP v1 Query           : 0
    IGMP v2 Query           : 0
    IGMP v3 Query           : 0
    Total                    : 0
    Dropped By Rate Limitation : 0
    Dropped By Multicast VLAN : 0

  Report & Leave
    IGMP v1 Report          : 0
    IGMP v2 Report          : 0
    IGMP v3 Report          : 0
    IGMP v2 Leave           : 0
    Total                   : 0
    Dropped By Rate Limitation : 0
    Dropped By Max Group Limitation : 0
    Dropped By Group Filter  : 0
    Dropped By Multicast VLAN : 0

Transmit Statistics
  Query
    IGMP v1 Query           : 0
    IGMP v2 Query           : 0
    IGMP v3 Query           : 0
    Total                    : 0

  Report & Leave
    IGMP v1 Report          : 0
    IGMP v2 Report          : 0
    IGMP v3 Report          : 0
    IGMP v2 Leave           : 0
    Total                   : 0

Total Entries : 1

DGS-3000-26TC:admin#

```

39-22 show igmp access_authentication ports

Description

This command is used to display the current IGMP Access Control configuration.

Format

show igmp access_authentication ports [all | <portlist>]

Parameters

all - Specify all ports to be displayed.

<portlist> - Enter a range of ports to be displayed.

Restrictions

None.

Example

To display the IGMP Access Control status for ports 1-4:

```
DGS-3000-26TC:admin#show igmp access_authentication ports 1-4
```

```
Command: show igmp access_authentication ports 1-4
```

Port	State
-----	-----
1	Enabled
2	Disabled
3	Disabled
4	Disabled

```
DGS-3000-26TC:admin#
```

To display the IGMP Access Control status for all ports:

```
DGS-3000-26TC:admin#show igmp access_authentication ports all
```

```
Command: show igmp access_authentication ports all
```

Port	State
-----	-----
1	Enabled
2	Disabled
3	Disabled
4	Disabled
5	Disabled
6	Disabled
7	Disabled
8	Disabled
9	Disabled
10	Disabled
11	Disabled
12	Disabled
13	Disabled
14	Disabled
15	Disabled
16	Disabled
17	Disabled
18	Disabled
19	Disabled
20	Disabled

```
CTRL+C ESC q Quit SPACE n Next Page ENTER Next Entry a All
```

39-23 clear igmp_snooping statistics counter

Description

This command is used to clear the IGMP snooping statistics counter.

Format

clear igmp_snooping statistics counter

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear the IGMP snooping statistics counter:

```
DGS-3000-26TC:admin#clear igmp_snooping statistic counter
Command: clear igmp_snooping statistic counter

Success.

DGS-3000-26TC:admin#
```

39-24 show igmp_snooping host

Description

This command is used to display the IGMP hosts that have joined groups on specific ports or specific VLANs.

Format

show igmp_snooping host {[vlan <vlan_name 32> | vlanid <vlanid_list> | ports <portlist> | group <ipaddr>]}

Parameters

-
- vlan** - (Optional) Specify the VLAN name.
<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

 - vlanid** - (Optional) Specify the VLAN ID.
<vlanid_list> - Enter the VLAN ID here.

 - ports** - (Optional) Specify that list of port that will be displayed.
<portlist> - Enter the list of ports here.

 - group** - (Optional) Specify the group.
<ipaddr> - Enter the group IP address here.

 - If no parameter is specified, all joining hosts will be displayed.
-

Restrictions

None.

Example

To display the host IP information:

```
DGS-3000-26TC:admin#show igmp_snooping host vlan default
Command: show igmp_snooping host vlan default
```

VLAN ID	Group	Port No	IGMP Host
1	225.0.1.0	2	198.19.1.2
1	225.0.1.0	2	198.19.1.3
1	225.0.1.0	3	198.19.1.4
1	225.0.1.2	2	198.19.1.3
1	225.0.2.3	3	198.19.1.4
1	225.0.3.4	3	198.19.1.5
1	225.0.4.5	5	198.19.1.6
1	225.0.5.6	5	198.19.1.7
1	225.0.6.7	4	198.19.1.8
1	225.0.7.8	4	198.19.1.9
1	239.255.255.250	7	10.90.90.90

Total Entries : 11

```
DGS-3000-26TC:admin#
```

To display the host IP information for the group 225.0.1.0:

```
DGS-3000-26TC:admin#show igmp_snooping host group 225.0.1.0
Command: show igmp_snooping host group 225.0.1.0
```

VLAN ID	Group	Port No	IGMP Host
1	225.0.1.0	2	198.19.1.2
1	225.0.1.0	2	198.19.1.3
1	225.0.1.0	3	198.19.1.4

Total Entries : 3

```
DGS-3000-26TC:admin#
```

Chapter 40 IP-MAC-Port Binding (IMPB)

Command List

create address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> {ports [<portlist> all]}
config address_binding ip_mac ports [<portlist> all] {arp_inspection [strict loose disable] ip_inspection [enable disable] protocol [ipv4 ipv6 all] allow_zeroip [enable disable] forward_dhcppkt [enable disable] stop_learning_threshold <int 0-500>}
create address_binding ip_mac ipv6address <ipv6addr> mac_address <macaddr> {ports [<portlist> all]}
config address_binding ip_mac ipv6address <ipv6addr> mac_address <macaddr> {ports [<portlist> all]}
delete address_binding blocked [all vlan_name <vlan_name> mac_address <macaddr>]
delete address_binding ip_mac [all ipaddress <ipaddr> mac_address <macaddr> ipv6address <ipv6addr> mac_address <macaddr>]
config address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> {ports [<portlist> all]}
show address_binding {ports [<portlist>]}
show address_binding blocked [all vlan_name <vlan_name> mac_address <macaddr>]
show address_binding ip_mac [all [[ipaddress <ipaddr> ipv6address <ipv6addr>] {mac_address <macaddr>} mac_address <macaddr>]]
enable address_binding dhcp_snoop {[ipv6 all]}
disable address_binding dhcp_snoop {[ipv6 all]}
clear address_binding dhcp_snoop binding_entry ports [<portlist> all] {[ipv6 all]}
show address_binding dhcp_snoop {max_entry {ports <portlist>}}
show address_binding dhcp_snoop binding_entry {port <port>}
config address_binding dhcp_snoop max_entry ports [<portlist> all] limit [<value 1-50> no_limit] {ipv6}
enable address_binding nd_snoop
disable address_binding nd_snoop
config address_binding nd_snoop ports [<portlist> all] max_entry [<value 1-50> no_limit]
show address_binding nd_snoop {ports <portlist>}
show address_binding nd_snoop binding_entry {port <port>}
clear address_binding nd_snoop binding_entry ports [<portlist> all]
enable address_binding trap_log
disable address_binding trap_log
config address_binding recover_learning ports [<portlist> all]
debug address_binding [event dhcp all] state [enable disable]
no debug address_binding
enable address_binding roaming
disable address_binding roaming

40-1 create address_binding ip_mac

Description

This command is used to create an IMPB entry.

Format

```
create address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> {ports [<portlist> | all]}
```

Parameters

ipaddress - Specify the IP address used for the IMPB entry.

<ipaddr> - Enter the IP address used here.

mac_address - Specify the MAC address used for the IMPB entry.

<macaddr> - Enter the MAC address used here.

ports - (Optional) Specify the portlist the entry will apply to. If not ports are specified, the settings will be applied to all ports.

<portlist> - Enter a list of ports used for this configuration here.

all - Specify that all the ports will be included.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an IMPB entry:

```
DGS-3000-26TC:admin#create address_binding ip_mac ipaddress 10.1.1.1 mac_address 00-00-00-00-00-11
Command: create address_binding ip_mac ipaddress 10.1.1.1 mac_address 00-00-00-00-00-11

Success.

DGS-3000-26TC:admin#
```

40-2 config address_binding ip_mac ports

Description

This command is used to configure the state of IMPB on the Switch for each port.

Format

```
config address_binding ip_mac ports [<portlist> | all] {arp_inspection [strict | loose | disable] |
ip_inspection [enable | disable] | protocol [ipv4 | ipv6 | all] | allow_zeroip [enable | disable] |
forward_dhcppt [enable | disable] | stop_learning_threshold <int 0-500>}
```

Parameters

ports - Specify the ports used for this configuration.

<portlist> - Enter the list of ports used for this configuration here.

all - Specify that all the ports will be used.

arp_inspection - (Optional) Specify that the ARP inspection option will be configured.

strict - In this mode, all packets are dropped by default until a legal ARP or IP packets are detected.

loose - In this mode, all packets are forwarded by default until an illegal ARP or broadcast IP packets are detected. If not specified strict or loose, default is strict.

disable - Disable ARP inspection function. The default value is disabled.

ip_inspection - (Optional) Specify that the IP inspection option will be configured.

enable - Enables the IP inspection function. The legal IP packets will be forwarded, while the illegal IP packets will be dropped.

disable - Disables the IP inspection function. The default value is disabled.

protocol - (Optional) Specify the version used.

ipv4 - Specify that only IPv4 packets will be checked.

ipv6 - Specify that only IPv6 packets will be checked.

all - Specify that all packets will be checked.

allow_zeroip - (Optional) Specify whether to allow ARP packets with a source IP address of 0.0.0.0. If the IP address 0.0.0.0 is not configured in the binding list and this setting is enabled, ARP packets with the source IP address of 0.0.0.0 will be allowed; If the IP address 0.0.0.0 is not configured in the binding list and this setting is disabled, ARP packets with the source IP address of 0.0.0.0 will not be allowed. This option does not affect the IMPB ACL Mode.

enable - Specify to enable the allow zero IP option.

disable - Specify to disable the allow zero IP option.

forward_dhcppt - (Optional) By default, DHCP packets with a broadcast DA will be flooded. When set to

disabled, the broadcast DHCP packet received by the specified port will not be forwarded. This setting is effective when DHCP Snooping is enabled, in this case DHCP packets trapped by the CPU must be forwarded by the software. This setting controls the forwarding behavior in this situation.

enable - Specify to enable the forward DHCP packets option.

disable - Specify to disable the forward DHCP packets option.

stop_learning_threshold - (Optional) When the number of blocked entries exceeds the threshold, the port will stop learning new addresses. Packets with a new address will be dropped.

<int 0-500> - Enter the stop learning threshold value here. This value must be between 0 and 500.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable IMPB on port 1:

```
DGS-3000-26TC:admin#config address_binding ip_mac ports 1 arp_inspection strict
Command: config address_binding ip_mac ports 1 arp_inspection strict
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

40-3 create address_binding ip_mac ipv6address

Description

This command is used to create an IP-MAC-Port binding entry using IPv6.

Format

create address_binding ip_mac ipv6address <ipv6addr> mac_address <macaddr> {ports [<portlist>| all]}

Parameters

<ipv6addr> - Enter the IPv6 address.

mac_address - Specify the MAC address.

<macaddr> - Enter the MAC address here.

ports - (Optional) Specify a range of ports or all ports.

<portlist> - Enter a range of ports to be configured.

all - Specify to apply to all the ports.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a static IPv6 IMPB entry that binds the IPv6 address fe80::240:5ff:fe00:28 to the MAC address 00-00-00-00-00-11:

```
DGS-3000-26TC:admin#create address_binding ip_mac ipv6address fe80::240:5ff:fe00:28
mac_address 00-00-00-00-00-11
Command: create address_binding ip_mac ipv6address FE80::240:5FF:FE00:28 mac_address 00-00-
00-00-00-11

Success.

DGS-3000-26TC:admin#
```

40-4 config address_binding ip_mac ipv6address

Description

This command is used to update an address binding entry using IPv6.

Format

config address_binding ip_mac ipv6address <ipv6addr> mac_address <macaddr> {ports [<portlist>| all]}

Parameters

<ipv6addr> - Enter the IPv6 address used here.

mac_address - Specify the MAC address.

<macaddr> - Enter the MAC address here.

ports - (Optional) Specify a range of ports to be configured. If the ports are not specified, it will apply to all ports.

<portlist> - Enter a range of ports to be applied to.

all - Specify all ports to be applied to.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a static IPv6 IMPB entry so that that IPv6 address fe80::240:5ff:fe00:28 is bound to the MAC address 00-00-00-00-00-11:

```
DGS-3000-26TC:admin#config address_binding ip_mac ipv6address fe80::240:5ff:fe00:28
mac_address 00-00-00-00-00-11
Command: config address_binding ip_mac ipv6address FE80::240:5FF:FE00:28 mac_address 00-00-
00-00-00-11

Success.

DGS-3000-26TC:admin#
```

40-5 delete address_binding blocked

Description

This command is used to delete a blocked entry.

Format

delete address_binding blocked [all | vlan_name <vlan_name> mac_address <macaddr>]

Parameters

all - Specify that all the entries the address database that the system has automatically blocked to be deleted.

vlan_name - Specify the name of the VLAN to which the blocked MAC address belongs.
<vlan_name> - Enter the VLAN name.

mac_address - Specify the MAC address of the entry or the blocked MAC address.
<macaddr> - Enter the MAC address used.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a blocked address:

```
DGS-3000-26TC:admin#delete address_binding blocked vlan_name v31 mac_address 00-00-00-00-00-11
11
Command: delete address_binding blocked vlan_name v31 mac_address 00-00-00-00-00-11

Success.

DGS-3000-26TC:admin#
```

40-6 delete address_binding ip_mac

Description

This command is used to delete an IMPB entry.

Format

delete address_binding ip_mac [all | ipaddress <ipaddr> mac_address <macaddr> | ipv6address <ipv6addr> mac_address <macaddr>]

Parameters

all - Specify that all the MAC address will be used.

ipaddress - Specify the learned IP address of the entry in the database.
<ipaddr> - Enter the IP address used.
mac_address - Specify the MAC address used for this configuration.
<macaddr> - Enter the MAC address used.

ipv6address - Specify the learned IPv6 address of the entry in the database.
<ipv6addr> - Enter the IPv6 address used.
mac_address - Specify the MAC address used for this configuration.
<macaddr> - Enter the MAC address used.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a specified IMPB entry:

```
DGS-3000-26TC:admin#delete address_binding ip_mac ipaddress 10.1.1.1 mac_address 00-00-00-00-00-11
Command: delete address_binding ip_mac ipaddress 10.1.1.1 mac_address 00-00-00-00-00-11

Success.

DGS-3000-26TC:admin#
```

40-7 config address_binding ip_mac ipaddress

Description

This command is used to update an IMPB entry.

Format

config address_binding ip_mac ipaddress <ipaddr> mac_address <macaddr> {ports [<portlist> | all]}

Parameters

ipaddress - Specify the IP address of the entry being updated.

<ipaddr> - Enter the IP address used here.

mac_address - Specify the MAC address of the entry being updated

<macaddr> - Enter the MAC address used here.

ports - (Optional) Specify which ports are used for the IMPB entry being updated. If not specified, then it is applied to all ports.

<portlist> - Enter the list of port used here.

all - Specify that all the ports will be used.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure an IMPB entry:

```
DGS-3000-26TC:admin#config address_binding ip_mac ipaddress 10.1.1.1 mac_address 00-00-00-00-00-11
Command: config address_binding ip_mac ipaddress 10.1.1.1 mac_address 00-00-00-00-00-11

Success.

DGS-3000-26TC:admin#
```

40-8 show address_binding

Description

This command is used to display the IMPB global settings or IMPB settings on specified ports.

Format

show address_binding {ports {<portlist>}}

Parameters

ports - (Optional) Specify the ports for which the information is displayed. If not specified, all ports are displayed.
<portlist> - (Optional) Enter the list of ports used here.

Restrictions

None.

Example

To show the IMPB global configuration:

```
DGS-3000-26TC:admin#show address_binding
Command: show address_binding

Roaming state      : Enabled
Trap/Log           : Disabled
DHCP Snoop(IPv4)   : Disabled
DHCP Snoop(IPv6)   : Disabled
ND Snoop           : Disabled
Function Version    : 3.93

DGS-3000-26TC:admin#
```

To show the IMPB ports:

```
DGS-3000-26TC:admin#show address_binding ports
Command: show address_binding ports

ARP: ARP Inspection   IP: IP Inspection

Port  ARP      IP      Protocol Zero IP  DHCP Packet  Stop Learning
-----
1     Disabled Disabled All   Not Allow Forward      500/Normal
2     Disabled Disabled All   Not Allow Forward      500/Normal
3     Disabled Disabled All   Not Allow Forward      500/Normal
4     Disabled Disabled All   Not Allow Forward      500/Normal
5     Disabled Disabled All   Not Allow Forward      500/Normal
6     Disabled Disabled All   Not Allow Forward      500/Normal
7     Disabled Disabled All   Not Allow Forward      500/Normal
8     Disabled Disabled All   Not Allow Forward      500/Normal
9     Disabled Disabled All   Not Allow Forward      500/Normal
10    Disabled Disabled All   Not Allow Forward      500/Normal
11    Disabled Disabled All   Not Allow Forward      500/Normal
12    Disabled Disabled All   Not Allow Forward      500/Normal
13    Disabled Disabled All   Not Allow Forward      500/Normal
14    Disabled Disabled All   Not Allow Forward      500/Normal
15    Disabled Disabled All   Not Allow Forward      500/Normal
16    Disabled Disabled All   Not Allow Forward      500/Normal

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  ENTER  Next Entry  a  All
```


40-9 show address_binding blocked

Description

This command is used to display the blocked MAC entries.

Format

show address_binding blocked [all | vlan_name <vlan_name> mac_address <macaddr>]

Parameters

all - Specify that all the addresses in the database that the system has auto learned and blocked to be displayed.
vlan_name - Specify the name of the VLAN to which the blocked MAC address belongs.
 <vlan_name> - Enter the VLAN name used.
mac_address - Specify the MAC address of the entry or the blocked MAC address.
 <macaddr> - Enter the MAC address of the entry or the blocked MAC address.

Restrictions

None.

Example

To show the IMPB entries that are blocked:

```
DGS-3000-26TC:admin#show address_binding blocked all
Command: show address_binding blocked all

VID  VLAN Name                MAC Address                Port
----  -
1    default                    00-0C-6E-AA-B9-C0        1

Total Entries : 1

DGS-3000-26TC:admin#
```

40-10 show address_binding ip_mac

Description

This command is used to display the IMPB entries.

Format

show address_binding ip_mac [all | [[ipaddress <ipaddr> | ipv6address <ipv6addr>] {mac_address <macaddr>} | mac_address <macaddr>]]

Parameters

all - Specify that all the IP addresses to be displayed.
ipaddress - Specify the learned IP address of the entry in the database.
 <ipaddr> - Enter the learned IP address.
ipv6address - Specify the learned IPv6 address of the entry in the database.
 <ipv6addr> - Enter the learned IPv6 address.
mac_address - (Optional) Specify the MAC address of the entry in the database.
 <macaddr> - Enter the MAC address here.

mac_address - Specify the MAC address in the database.

<macaddr> - Enter the binding IP MAC address.

Restrictions

None.

Example

To show IMPB entries:

```

GS-3000-26TC:admin#show address_binding ip_mac all
Command: show address_binding ip_mac all

M(Mode) - D:DHCP, N:ND S:Static ACL - A:Active I:Inactive

IP Address                MAC Address              M  ACL Ports
-----
10.1.1.1                  00-00-00-00-00-11 S  I   1-26
FE80::240:5FF:FE00:28    00-00-00-00-00-11 S  I   1-26

Total Entries : 2

DGS-3000-26TC:admin#

```

40-11 enable address_binding dhcp_snoop

Description

This command is used to enable DHCP snooping mode.

By default, DHCP snooping is disabled.

If a user enables DHCP Snooping mode, all ports which have IMPB disabled will become server ports. The switch will learn the IP addresses through server ports (by using DHCP Offer and DHCP ACK packets).

Note that the DHCP discover packet cannot be passed thru the user ports if the allow_zeroip function is disabled on the port.

The auto-learned IMPB entry will be mapped to a specific source port based on the MAC address learning function. This entry will be created as an IP-Inspection mode binding entry for this specific port. Each entry is associated with a lease time. When the lease time has expires, the expired entry will be removed from the port. The auto-learned binding entry can be moved from one port to another port if the DHCP snooping function has learned that the MAC address has moved to a different port.

If a situation occurs where a binding entry learned by DHCP snooping conflicts with a statically configured entry. The binding relation has conflicted. For example, if IP A is bound to MAC X with a static configuration and suppose that the binding entry learned by DHCP snooping is that IP A is bound to MAC Y, and then it is conflict. When the DHCP snooping learned entry binds with the static configured entry, and the DHCP snooping learned entry will not be created.

In a situation where the same IMPB pair has been statically configured, the auto-learned entry will not be created. In a situation where the learned information is consistent with the statically configured entry the auto-learned entry will not be created. In a situation where the entry is statically configured in ARP mode the auto learned entry will not be created. In a situation where the entry is statically configured on one port and the entry is auto-learned on another port, the auto-learned entry will not be created.

Format

enable address_binding dhcp_snoop {[ipv6 | all]}

Parameters

ipv6 - (Optional) Specify to enable the IPv6 entries.

all - (Optional) Specify to enable all DHCP snooping mode.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable DHCP IPv4 snooping mode:

```
DGS-3000-26TC:admin#enable address_binding dhcp_snoop
Command: enable address_binding dhcp_snoop

Success.

DGS-3000-26TC:admin#
```

40-12 disable address_binding dhcp_snoop

Description

This command is used to disable DHCP snooping mode. When the DHCP snooping function is disabled, all of the auto-learned binding entries will be removed.

Format

disable address_binding dhcp_snoop {[ipv6 | all]}

Parameters

ipv6 - (Optional) Specify to disable the IPv6 entries.

all - (Optional) Specify to disable all DHCP snooping mode.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable DHCP IPv4 snooping mode:

```
DGS-3000-26TC:admin#disable address_binding dhcp_snoop
Command: disable address_binding dhcp_snoop

Success.

DGS-3000-26TC:admin#
```

40-13 clear address_binding dhcp_snoop binding_entry ports

Description

This command is used to clear the DHCP snooping entries learned for the specified ports.

Format

clear address_binding dhcp_snoop binding_entry ports [<portlist> | all] {[ipv6 | all]}

Parameters

<portlist> - Enter the list of ports used.
all - Specify that all the ports will be used.
ipv6 - (Optional) Specify to clear the IPv6 entries.
all - (Optional) Specify to clear all entries.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear DHCP IPv4 snooping entries on ports 1-3:

```
DGS-3000-26TC:admin#clear address_binding dhcp_snoop binding_entry ports 1-3
Command: clear address_binding dhcp_snoop binding_entry ports 1-3

Success.
s
DGS-3000-26TC:admin#
```

40-14 show address_binding dhcp_snoop

Description

This command is used to display the DHCP snooping configuration and learning database.

Format

show address_binding dhcp_snoop {max_entry {ports <portlist>}}

Parameters

max_entry - (Optional) Displays the maximum number of entries per port.
ports - (Optional) Specify the ports used for this configuration.
<portlist> - Enter a list of ports used here.

If no parameters are specified, show DHCP snooping displays the enable/disable state.

Restrictions

None.

Example

To show the DHCP snooping state:

```
DGS-3000-26TC:admin#show address_binding dhcp_snoop
Command: show address_binding dhcp_snoop

DHCP Snoop(IPv4) : Disabled
DHCP Snoop(IPv6) : Disabled

DGS-3000-26TC:admin#
```

To display DHCP snooping maximum entry configuration:

```
DGS-3000-26TC:admin#show address_binding dhcp_snoop max_entry
Command: show address_binding dhcp_snoop max_entry

Port  Max Entry  Max IPv6 Entry
----  -
1     No Limit   No Limit
2     No Limit   No Limit
3     No Limit   No Limit
4     No Limit   No Limit
5     No Limit   No Limit
6     No Limit   No Limit
7     No Limit   No Limit
8     No Limit   No Limit
9     No Limit   No Limit
10    No Limit   No Limit
11    No Limit   No Limit
12    No Limit   No Limit
13    No Limit   No Limit
14    No Limit   No Limit
15    No Limit   No Limit
16    No Limit   No Limit
17    No Limit   No Limit
18    No Limit   No Limit
19    No Limit   No Limit
20    No Limit   No Limit

CTRL+C  ESC  q Quit  SPACE  n Next Page  ENTER  Next Entry  a All
```

40-15 show address_binding dhcp_snoop binding_entry

Description

This command is used to display the DHCP snooping binding entries.

Format

```
show address_binding dhcp_snoop binding_entry {port <port>}
```

Parameters

port - (Optional) Specify the port used for this configuration.
<port> - Enter the port number used here.

Restrictions

None.

Example

To display the DHCP snooping binding entries:

```
DGS-3000-26TC:admin#show address_binding dhcp_snoop binding_entry
Command: show address_binding dhcp_snoop binding_entry

S (Status) - A: Active, I: Inactive
Time - Left Time (sec)

IP Address                               MAC Address                               S Time Port
-----
10.62.58.35                               00-0B-5D-05-34-0B                       A 35964 1
10.33.53.82                               00-20-c3-56-b2-ef                       I 2590 2

Total entries : 2

DGS-3000-26TC:admin#
```

40-16 config address_binding dhcp_snoop max_entry

Description

This command is used to specify the maximum number of entries that can be learned by a specified port.

Format

config address_binding dhcp_snoop max_entry ports [<portlist> | all] limit [<value 1-50> | no_limit] {ipv6}

Parameters

- ports** - Specify the list of ports you would like to set the maximum number of entries that can be learned.
 - <portlist>** - Enter the list of ports used here.
 - all** - Specify that all the ports will be used.
- limit** - Specify the maximum number. The default value is no_limit.
 - <value 1-50>** - Enter the limit value here. This value must be between 1 and 50.
 - no_limit** - Specify that the maximum number of learned entries is unlimited.
- ipv6** - (Optional) Specify the IPv6 address used for this configuration.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the maximum number of DHCP IPv4 snooping entries that ports 1–3 can learned to 10:

```
DGS-3000-26TC:admin#config address_binding dhcp_snoop max_entry ports 1-3 limit 10.
Command: config address_binding dhcp_snoop max_entry ports 1-3 limit 10.

Success.

DGS-3000-26TC:admin#
```

40-17 enable address_binding nd_snoop

Description

This command is used to enable ND snooping on the Switch.

Format

enable address_binding nd_snoop

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the ND snooping function on the switch:

```
DGS-3000-26TC:admin#enable address_binding nd_snoop
Command: enable address_binding nd_snoop

Success.

DGS-3000-26TC:admin#
```

40-18 disable address_binding nd_snoop

Description

This command is used to disable ND snooping on the Switch.

Format

disable address_binding nd_snoop

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the ND snooping function on the switch:

```
DGS-3000-26TC:admin#disable address_binding nd_snoop
Command: disable address_binding nd_snoop

Success.

DGS-3000-26TC:admin#
```

40-19 config address_binding nd_snoop ports

Description

This command is used to specify the maximum number of entries that can be learned with ND snooping. By default, there is no limit on the maximum number of entries that can be learned on a port with ND snooping.

Format

config address_binding nd_snoop ports [<portlist> | all] max_entry [<value 1-50> | no_limit]

Parameters

<portlist> - Enter the list of ports used for this configuration.

all - Specify that all the ports will be used for this configuration.

max_entry - Specify the maximum number of entries.

<value 1-50> - Enter the maximum number of entries used here. This value must be between 1 and 50.

no_limit - Specify that the maximum number of learned entries is unlimited.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To have a maximum of 10 entries can be learned by ND snooping on ports 1 to 3:

```
DGS-3000-26TC:admin#config address_binding nd_snoop ports 1-3 max_entry 10
Command: config address_binding nd_snoop ports 1-3 max_entry 10

Success.

DGS-3000-26TC:admin#
```

40-20 show address_binding nd_snoop

Description

This command is used to display the status of ND snooping on the Switch.

Format

show address_binding nd_snoop {ports <portlist>}

Parameters

ports - (Optional) Specify the list of ports used for this display.

<portlist> - Enter the list of ports used for this display here.

Restrictions

None.

Example

To show the ND snooping state:

```
DGS-3000-26TC:admin#show address_binding nd_snoop
Command: show address_binding nd_snoop

ND Snoop           : Enabled

DGS-3000-26TC:admin#
```

To show the ND snooping maximum entry information for ports 1-5:

```
DGS-3000-26TC:admin#show address_binding nd_snoop ports 1-5
Command: show address_binding nd_snoop ports 1-5

Port  Max Entry
----  -
1     10
2     10
3     10
4     No Limit
5     No Limit

DGS-3000-26TC:admin#
```

40-21 show address_binding nd_snoop binding_entry

Description

This command is used to show the ND snooping binding entries on the Switch.

Format

show address_binding nd_snoop binding_entry {port <port>}

Parameters

port - (Optional) Specify a port used for this display.
<port> - Enter the port number used for this display here.

Restrictions

None.

Example

To show the ND snooping binding entry:

```
DGS-3000-26TC:admin#show address_binding nd_snoop binding_entry
Command: show address_binding nd_snoop binding_entry

S (Status) - A: Active, I: Inactive
Time - Left Time (sec)

IP Address                               MAC Address      S  LT(sec)  Port
-----
2001:2222:1111:7777:5555:6666:7777:8888 00-00-00-00-00-02 I  50       5
2001::1                                   00-00-00-00-03-02 A  100      6

Total Entries : 2

DGS-3000-26TC:admin#
```

40-22 clear address_binding nd_snoop binding_entry ports

Description

This command is used to clear the ND snooping entries on specified ports.

Format

clear address_binding nd_snoop binding_entry ports [<portlist> | all]

Parameters

<portlist> - Enter the list of ports that you would like to clear the ND snoop learned entry.
all - Specify to clear all ND snooping learned entries.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear ND snooping entry on ports 1-3:

```
DGS-3000-26TC:admin#clear address_binding nd_snoop binding_entry ports 1-3
Command: clear address_binding nd_snoop binding_entry ports 1-3

Success.

DGS-3000-26TC:admin#
```

40-23 enable address_binding trap_log

Description

This command is used to send traps and logs when the IMPB module detects an illegal IP and MAC address.

Format

enable address_binding trap_log

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the IMPB traps and logs:

```
DGS-3000-26TC:admin#enable address_binding trap_log
Command: enable address_binding trap_log

Success.

DGS-3000-26TC:admin#
```

40-24 disable address_binding trap_log

Description

This command is used to disable the IMPB traps and logs.

Format

disable address_binding trap_log

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable IMPB traps and logs:

```
DGS-3000-26TC:admin#disable address_binding trap_log
Command: disable address_binding trap_log

Success.

DGS-3000-26TC:admin#
```

40-25 config address_binding recover_learning ports

Description

This command is used to recover IMPB checking.

Format

config address_binding recover_learning ports [<portlist> | all]

Parameters

<portlist> - Enter the list of port to recover the IMPB check.
all - Specify all the ports to recover the IMPB check.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To recover IMPB checking for ports 6 to 7:

```
DGS-3000-26TC:admin#config address_binding recover_learning ports 6-7
Command: config address_binding recover_learning ports 6-7

Success.

DGS-3000-26TC:admin#
```

40-26 debug address_binding

Description

This command is used to start the IMPB debug when the IMPB module receives an ARP/IP packet or a DHCP packet.

Format

debug address_binding [event | dhcp | all] state [enable | disable]

Parameters

event - Prints out the debug messages when IMPB module receives ARP/IP packets.
dhcp - Prints out the debug messages when the IMPB module receives the DHCP packets.
all - Prints out all debug messages.
state - Specify the IMPB debug state to be enabled or disabled.
 enable - Specify to enable the state.
 disable - Specify to disable the state.

Restrictions

Only Administrator users can issue this command.

Example

To print out all debug IMPB messages:

```
DGS-3000-26TC:admin#debug address_binding all state enable
Command: debug address_binding all state enable

Success.

DGS-3000-26TC:admin#
```

40-27 no debug address_binding

Description

This command is used to stop the IMPB debug starting when the IMPB module receives an ARP/IP packet or a DHCP packet.

Format

no debug address_binding

Parameters

None.

Restrictions

Only Administrator users can issue this command.

Example

To stop IMPB debug: starting when the IMPB module receives an ARP/IP or DHCP packet:

```
DGS-3000-26TC:admin#no debug address_binding
Command: no debug address_binding

Success.

DGS-3000-26TC:admin#
```

40-28 enable address_binding roaming

Description

This command is used to enable the IMPB roaming.

Format

enable address_binding roaming

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the IMPB roaming:

```
DGS-3000-26TC:admin#enable address_binding roaming
Command: enable address_binding roaming

Success.

DGS-3000-26TC:admin#
```

40-29 disable address_binding roaming

Description

This command is used to disable the IMPB roaming.

Format

disable address_binding roaming

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the IMPB roaming:

```
DGS-3000-26TC:admin#disable address_binding roaming
Command: disable address_binding roaming

Success.

DGS-3000-26TC:admin#
```

Chapter 41 IPv6 Neighbor Discover Command List

```

create ipv6 neighbor_cache ipif <ipif_name 12> <ipv6addr> <macaddr>
delete ipv6 neighbor_cache ipif [<ipif_name 12> | all] [<ipv6addr> | static | dynamic | all]
show ipv6 neighbor_cache ipif [<ipif_name 12> | all] [ipv6address <ipv6addr> | static | dynamic | all]
config ipv6 nd ns ipif <ipif_name 12> retrans_time <millisecond 0-4294967295>
show ipv6 nd {ipif <ipif_name 12>}

```

41-1 create ipv6 neighbor_cache

Description

This command is used to add a static neighbor on an IPv6 interface.

Format

```
create ipv6 neighbor_cache ipif <ipif_name 12> <ipv6addr> <macaddr>
```

Parameters

ipif - Specify the interface's name.

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

<ipv6addr> - Enter the IPv6 address of the neighbor.

<macaddr> - Enter the MAC address of the neighbor.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Create a static neighbor cache entry:

```

DGS-3000-26TC:admin#create ipv6 neighbor_cache ipif System 3ffc::1 00-01-02-03-04-05
Command: create ipv6 neighbor_cache ipif System 3ffc::1 00-01-02-03-04-05

Success.

DGS-3000-26TC:admin#

```

41-2 delete ipv6 neighbor_cache

Description

This command is used to delete a neighbor cache entry or static neighbor cache entries from the address cache or all address cache entries on this IP interface. Both static and dynamic entries can be deleted.

Format

```
delete ipv6 neighbor_cache ipif [<ipif_name 12> | all] [<ipv6addr> | static | dynamic | all]
```

Parameters

ipif - Specify the IPv6 interface name.

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

all - Specify that all the interfaces will be used in this configuration.

<ipv6addr> - Enter the neighbor's IPv6 address.

static - Deletes the static entry.

dynamic - Deletes those dynamic entries.

all - Deletes all entries include static and dynamic entries.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Delete a neighbor cache entry on IP interface "System":

```
DGS-3000-26TC:admin#delete ipv6 neighbor_cache ipif System 3ffc::1
Command: delete ipv6 neighbor_cache ipif System 3FFC::1

Success.

DGS-3000-26TC:admin#
```

41-3 show ipv6 neighbor_cache

Description

This command is used to display the neighbor cache entry for the specified interface. You can display a specific entry, all entries, or all static entries.

Format

show ipv6 neighbor_cache ipif [<ipif_name 12> | all] [ipv6address <ipv6addr> | static | dynamic | all]

Parameters

ipif - Specify the IPv6 interface name.

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

all - Specify that all the interface will be displayed.

ipv6address - Specify the neighbor's address.

<ipv6addr> - Enter the IPv6 address here.

static - Static neighbor cache entry.

dynamic - Dynamic entries.

all - All entries include static and dynamic entries.

Restrictions

None

Example

Show all neighbor cache entries of IP interface "System":


```

DGS-3000-26TC:admin#show ipv6 neighbor_cache ipif System all
Command: show ipv6 neighbor_cache ipif System all

3FFC::1                               State: Static
MAC Address : 00-01-02-03-04-05       Port : NA
Interface   : System                  VID   : 1

Total Entries: 1

DGS-3000-26TC:admin#

```

41-4 config ipv6 nd ns retrans_time

Description

This command is used to configure the IPv6 ND neighbor solicitation retransmit time, which is between retransmissions of neighbor solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor.

Format

```
config ipv6 nd ns ipif <ipif_name 12> retrans_time <millisecond 0-4294967295>
```

Parameters

ipif - The IPv6 interface name.

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

retrans_time - Neighbor solicitation's re-transmit timer in millisecond.

<millisecond 0-4294967295> - Enter the re-transmit timer value here. This value must be between 0 and 4294967295 milliseconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the retrans_time of IPv6 ND neighbor solicitation:

```

DGS-3000-26TC:admin#config ipv6 nd ns ipif Zira retrans_time 1000000
Command: config ipv6 nd ns ipif Zira retrans_time 1000000

Success.

DGS-3000-26TC:admin#

```

41-5 show ipv6 nd

Description

This command is used to display information regarding neighbor detection on the Switch.

Format

show ipv6 nd {ipif <ipif_name 12>}

Parameters

ipif - (Optional) The name of the interface.

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

If no IP interface is specified, it will show the IPv6 ND related configuration of all interfaces.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To show IPv6 ND related configuration:

```
DGS-3000-26TC:admin#show ipv6 nd ipif System
Command: show ipv6 nd ipif System

Interface Name           : System
NS Retransmit Time      : 0 (ms)

DGS-3000-26TC:admin#
```

Chapter 42 IPv6 Route Command List

```

create ipv6route [default | <ipv6networkaddr>] [<ipif_name 12> <ipv6addr> | <ipv6addr>] {<metric 1-65535>}
  {[primary | backup]}
delete ipv6route [[default | <ipv6networkaddr>] [<ipif_name 12> <ipv6addr> | <ipv6addr>] | all]
show ipv6route {[<ipv6networkaddr> | <ipv6addr>]} {static}

```

42-1 create ipv6route

Description

This command is used to create an IPv6 static route. The next hop can be an IPv6 router or an IP tunnel. These two types of next hop are mutually exclusive. The primary route has higher priority than backup. When primary route is inactive, the backup route will be used. One static route will be primary route by default if there is no primary route to this destination yet

Format

```

create ipv6route [default | <ipv6networkaddr>] [<ipif_name 12> <ipv6addr> | <ipv6addr>] {<metric 1-65535>}
  {[primary | backup]}

```

Parameters

```

default - Specify an IPv6 default route.
<ipv6networkaddr> - Enter the IPv6 address and prefix of the destination of the route.
<ipif_name 12> - Enter the interface name to specify the IP interface for this route from an existing interface.
  Enter the IPv6 route name using a maximum of 12 characters.
<ipv6addr> - Enter the next hop address of the route.
<ipv6addr> - Specify the next ipv6 address hop of the route.
<metric 1-65535> - (Optional) Enter the metric value here. The default value is 1.
primary - (Optional) Specify the route as the primary route to the destination.
backup - (Optional) Specify the route as the backup route to the destination

```

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an IPv6 static route with outgoing interface System:

```

DGS-3000-26TC:admin# create ipv6route 5000::/64 System FE80::1
Command: create ipv6route 5000::/64 System FE80::1

Success.

DGS-3000-26TC:admin#

```

42-2 delete ipv6route

Description

This command is used to delete an IPv6 static route. If the next hop is a global address, it is not needed to indicate the interface name. If the next hop is a link local address, then the interface name must be specified.

Format

delete ipv6route [[**default** | **<ipv6networkaddr>**] [**<ipif_name 12>** **<ipv6addr>** | **<ipv6addr>**] | **all**]

Parameters

default - Specify the default route.

<ipv6networkaddr> - Enter the destination network route.

<ipif_name 12> - Enter the IP interface name used here. This name can be up to 12 characters long.

<ipv6addr> - Enter the next hop address for the route.

<ipv6addr> - Enter the next hop address for the route.

all - Specify to delete all created static routes.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Delete an IPv6 static route:

```
DGS-3000-26TC:admin#delete ipv6route default System 3FFC::1
Command: delete ipv6route default System 3FFC::1

Success.

DGS-3000-26TC:admin#
```

42-3 show ipv6route

Description

This command is used to display IPv6 routes.

Format

show ipv6route {[**<ipv6networkaddr>** | **<ipv6addr>**]} {**static**}

Parameters

<ipv6networkaddr> - (Optional) Enter the destination network address of the route to be displayed.

<ipv6addr> - (Optional) Enter the destination IPv6 address of the route to be displayed. The longest prefix matched route will be displayed

static - (Optional) Specify to display only static routes. One static route may be active or inactive.

Restrictions

None.

Example

Show all the IPv6 routes:

```
DGS-3000-26TC:admin#show ipv6route
```

```
Command: show ipv6route
```

```
IPv6 Prefix: 2002::/16          Protocol: Static  Metric: 1  
Next Hop   : ::                IPIF   : tn2
```

```
IPv6 Prefix: 2002:404:104:1::/64 Protocol: Local   Metric: 1  
Next Hop   : ::                IPIF   : tn2
```

```
Total Entries: 2
```

```
DGS-3000-26TC:admin#show ipv6route static
```

```
Command: show ipv6route static
```

```
IPv6 Prefix: 3000:62:1::/64    Protocol: Static  Metric: 1  
Next Hop   : ::                IPIF   : tn1  
Backup     : Primary           Status  : Active
```

```
Total Entries: 1
```

```
DGS-3000-26TC:admin#
```

Chapter 43 Japanese Web-Based Access Control (JWAC) Command List

enable jwac
disable jwac
config jwac [quarantine_server_url [<string 128> ipv6 <string 128>] clear_quarantine_server_url {ipv6}]
show jwac
enable jwac redirect
disable jwac redirect
config jwac redirect {destination [quarantine_server jwac_login_page] delay_time <sec 0-10>}(1)
enable jwac forcible_logout
disable jwac forcible_logout
enable jwac udp_filtering
disable jwac udp_filtering
enable jwac quarantine_server_monitor
disable jwac quarantine_server_monitor
config jwac quarantine_server_error_timeout <sec 5-300>
config jwac virtual_ip [<ipaddr> <ipv6addr>] {url [<string 128> clear]}
config jwac update_server [add delete] [ipaddress <network_address> ipv6address <ipv6networkaddr>] {tcp_port <port_number 1-65535> udp_port <port_number 1-65535>}
config jwac switch_http_port <tcp_port_number 1-65535> {[http https]}
config jwac ports [<portlist> all] {state [enable disable] max_authenticating_host <value 0-50> aging_time [infinite <min 1-1440>] idle_time [infinite <min 1-1440>] block_time [<sec 0-300>] auth_mode [host_based port_based]}(1)
show jwac ports {<portlist>}
config jwac radius_protocol [local eap_md5 pap chap ms_chap ms_chapv2]
create jwac user <username 15> {vlan <vlanid 1-4094>}
config jwac user <username 15> {vlan <vlanid 1-4094>}
delete jwac [user <username 15> all_users]
show jwac user
clear jwac auth_state [ports [all <portlist>] {authenticated authenticating blocked} mac_addr <macaddr>]
show jwac auth_state ports {<portlist>}
config jwac authorization attributes {radius [enable disable] local [enable disable]}(1)
show jwac update_server
config jwac authentication_page element [japanese english] [default page_title <desc 128> login_window_title <desc 32> user_name_title <desc 16> password_title <desc 16> logout_window_title <desc 32> notification_line <value 1-5> <desc 128>]
config jwac authenticate_page [japanese english]
show jwac authenticate_page

43-1 enable jwac

Description

This command is used to enable the Japanese Web-based access control (JWAC) function.

Using the JWAC function, PC users need to pass two stages of authentication. The first stage is to do the authentication with the quarantine server and the second stage is the authentication with the Switch.

Format

enable jwac

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable JWAC:

```
DGS-3000-26TC:admin#enable jwac
Command: enable jwac

Success.

DGS-3000-26TC:admin#
```

43-2 disable jwac

Description

This command is used to disable JWAC.

Format

disable jwac

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable JWAC:

```
DGS-3000-26TC:admin#disable jwac
Command: disable jwac

Success.

DGS-3000-26TC:admin#
```

43-3 config jwac

Description

This command is used to configure the quarantine server URL. If the redirection is enabled and the redirection destination is a quarantine server, when a HTTP request from an unauthenticated host which is not headed to a quarantine server reaches the Switch, the Switch will handle this HTTP packet and send back a message to the host to make it access the quarantine server with the configured URL. When the PC connected to the specified URL, the quarantine server will request the PC user to input the user name and password to authenticate.

NOTE: If the quarantine server is linked to the JWAC enabled port on the switch, it must be added to the static FDB correctly before it can work properly.

Format

```
config jwac [quarantine_server_url [<string 128> | ipv6 <string 128>] | clear_quarantine_server_url {ipv6}]
```

Parameters

quarantine_server_url - Specify the entire URL of the authentication page on the quarantine server.

<string 128> - Enter the entire URL of the authentication page on the quarantine server. The quarantine server URL can be up to 128 characters long.

ipv6 - Specify the entire URL of authentication page on Quarantine Server of IPv6.

<string 128> - Enter up to 128 characters for the quarantine server URL.

clear_quarantine_server_url - Specify to clear the current quarantine server URL.

ipv6 - (Optional) Clear the Quarantine Server URL of IPv6.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the Quarantine Server URL:

```
DGS-3000-26TC:admin# config jwac quarantine_server_url http://10.90.90.88/authpage.html
Command: config jwac quarantine_server_url http://10.90.90.88/authpage.html

Success.

DGS-3000-26TC:admin#
```

To configure IPv6 Quarantine Server URL:

```
DGS-3000-26TC:admin# config jwac quarantine_server_url ipv6 http://[3000::2]/authpage.html
Command: config jwac quarantine_server_url ipv6 http://[3000::2]/authpage.html

Success.

DGS-3000-26TC:admin#
```

43-4 show jwac

Description

This command is used to display the JWAC configuration settings..

Format

```
show jwac
```

Parameters

None.

Restrictions

None.

Example

To display the current JWAC configuration:

```

DGS-3000-26TC:admin#show jwac
Command: show jwac

State                : Disabled
Enabled Ports        :
Virtual IP/URL        : 1.1.1.1/-
Virtual IPv6/URL      : ::/-
Switch HTTP Port     : 80 (HTTP)
UDP Filtering         : Enabled
Forcible Logout      : Enabled
Redirect State        : Enabled
Redirect Delay Time   : 1 Seconds
Redirect Destination  : Quarantine Server
Quarantine Server    :
Quarantine Server IPv6 :
Q-Server Monitor     : Disabled
Q-Server Error Timeout : 60 Seconds
RADIUS Auth-Protocol : PAP
RADIUS Authorization : Enabled
Local Authorization  : Enabled
Function Version      : 2.11

DGS-3000-26TC:admin#

```

43-5 enable jwac redirect

Description

This command is used to enable JWAC redirect. When **redirect quarantine_server** is enabled, the unauthenticated host will be redirected to a quarantine server when it tries to access a random URL. When **redirect jwac_login_page** is enabled, the unauthenticated host will be redirected to the **jwac_login_page** on the Switch to finish authentication.

When enable redirect to quarantine server is in effect, a quarantine server must be configured first.

Format

enable jwac redirect

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable JWAC redirect:

```
DGS-3000-26TC:admin#enable jwac redirect
Command: enable jwac redirect

Success.

DGS-3000-26TC:admin#
```

43-6 disable jwac redirect

Description

This command is used to disable JWAC redirect. When redirect is disabled, only access to **quarantine_server** and the **jwac_login_page** from an unauthenticated host is allowed, all other Web access will be denied.

Format

disable jwac redirect

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable JWAC redirect:

```
DGS-3000-26TC:admin#disable jwac redirect
Command: disable jwac redirect

Success.

DGS-3000-26TC:admin#
```

43-7 config jwac redirect

Description

This command is used to configure redirect destination and delay time before an unauthenticated host is redirected to the quarantine server or the JWAC login web page. The unit of delay time is seconds. 0 means no delaying the redirect.

Format

config jwac redirect {destination [quarantine_server | jwac_login_page] | delay_time <sec 0-10>}(1)

Parameters

destination - Specify the destination which the unauthenticated host will be redirected to.
quarantine_server - Specify the unauthenticated host will be redirected to the quarantine_server.
jwac_login_page - Specify the unauthenticated host will be redirected to the jwac_login_page.
delay_time - Specify the time interval after which the unauthenticated host will be redirected.
<sec 0-10> - Enter the time interval after which the unauthenticated host will be redirected. The delay time

must be between 0 and 10 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure JWAC redirect destination to JWAC login web page and a delay time of 5 seconds:

```
DGS-3000-26TC:admin#config jwac redirect destination jwac_login_page delay_time 5
Command: config jwac redirect destination jwac_login_page delay_time 5

Success.

DGS-3000-26TC:admin#
```

43-8 enable jwac forcible_logout

Description

This command is used to enable JWAC forcible logout. When enabled, a Ping packet from an authenticated host to the JWAC Switch with TTL=1 will be regarded as a logout request, and the host will be moved back to unauthenticated state.

Format

enable jwac forcible_logout

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable JWAC forcible logout:

```
DGS-3000-26TC:admin#enable jwac forcible_logout
Command: enable jwac forcible_logout

Success.

DGS-3000-26TC:admin#
```

43-9 disable jwac forcible_logout

Description

This command is used to disable JWAC forcible logout.

Format

disable jwac forcible_logout

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable JWAC forcible logout:

```
DGS-3000-26TC:admin#disable jwac forcible_logout
Command: disable jwac forcible_logout

Success.

DGS-3000-26TC:admin#
```

43-10 enable jwac udp_filtering

Description

This command is used to enable the JWAC UDP filtering function. When UDP filtering is enabled, all UDP and ICMP packets except DHCP and DNS packets from unauthenticated hosts will be dropped.

Note: ICMPv6 packets will not be dropped because they utilize the Neighbor Discovery Protocol (NDP).

Format

enable jwac udp_filtering

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable JWAC UDP filtering:

```
DGS-3000-26TC:admin#enable jwac udp_filtering
Command: enable jwac udp_filtering

Success.

DGS-3000-26TC:admin#
```

43-11 disable jwac udp_filtering

Description

This command is used to disable JWAC UDP filtering.

Format

disable jwac udp_filtering

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable JWAC UDP filtering:

```
DGS-3000-26TC:admin#disable jwac udp_filtering
Command: disable jwac udp_filtering

Success.

DGS-3000-26TC:admin#
```

43-12 enable jwac quarantine_server_monitor

Description

This command is used to enable the JWAC quarantine server monitor. When enabled, the JWAC switch will monitor the quarantine server to ensure the server is okay. If the Switch detects no quarantine server, it will redirect all unauthenticated HTTP accesses to the JWAC Login Page forcibly if the redirect is enabled and the redirect destination is configured to be quarantine server.

Format

enable jwac quarantine_server_monitor

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable JWAC quarantine server monitoring:

```
DGS-3000-26TC:admin#enable jwac quarantine_server_monitor
Command: enable jwac quarantine_server_monitor

Success.

DGS-3000-26TC:admin#
```

43-13 disable jwac quarantine_server_monitor

Description

This command is used to disable JWAC quarantine server monitoring.

Format

disable jwac quarantine_server_monitor

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable JWAC quarantine server monitoring:

```
DGS-3000-26TC:admin#disable jwac quarantine_server_monitor
Command: disable jwac quarantine_server_monitor

Success.

DGS-3000-26TC:admin#
```

43-14 config jwac quarantine_server_error_timeout

Description

This command is used to set the quarantine server error timeout. When the quarantine server monitor is enabled, the JWAC switch will periodically check if the quarantine works okay. If the Switch does not receive any response from quarantine server during the configured error timeout, the Switch then regards it as not working properly.

Format

config jwac quarantine_server_error_timeout <sec 5-300>

Parameters

<sec 5-300> - Enter the error timeout interval.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the quarantine server error timeout:

```
DGS-3000-26TC:admin#config jwac quarantine_server_error_timeout 60
Command: config jwac quarantine_server_error_timeout 60

Success.

DGS-3000-26TC:admin#
```

43-15 config jwac virtual_ip

Description

This command is used to accept authentication request from unauthenticated host. Only requests sent to this IP will get response correctly. This IP does not respond to ARP request or ICMP packet!

Format

config jwac virtual_ip [<ipaddr> | <ipv6addr>] {url [<string 128> | clear]}

Parameters

<ipaddr> - Enter the IP address of the virtual IP.
<ipv6addr> - Enter the IPv6 address of the virtual IP.
url - (Optional) Specify the URL of the virtual IP.
<string 128> - Enter the URL of the virtual IP.
clear - Clear the URL of the virtual IP.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a JWAC virtual IP address of 1.1.1.1 to accept authentication requests from an unauthenticated host:

```
DGS-3000-26TC:admin# config jwac virtual_ip 1.1.1.1 url www.kyoto.ac.jp
Command: config jwac virtual_ip 1.1.1.1 url www.kyoto.ac.jp

Success.

DGS-3000-26TC:admin#
```

To set the virtual IPv6 as “2000::2” and URL as www.kyotov6.ac.jp:

```
DGS-3000-26TC:admin# config jwac virtual_ip 2000::2 url www.kyotov6.ac.jp Command: config
jwac virtual_ip 2000::2 url www.kyotov6.ac.jp

Success.

DGS-3000-26TC:admin#
```

43-16 config jwac update_server

Description

This command is used to add or delete a server network address to which the traffic from an unauthenticated client host will not be blocked by the JWAC Switch. Any servers running ActiveX need to be able to have access to accomplish authentication. Before the client passes authentication, it should be added to the Switch with its IP address. For example, the client may need to access update.microsoft.com or some sites of the Anti-Virus software companies to check whether the OS or Anti-Virus software of the client are the latest; and so IP addresses of update.microsoft.com and of Anti-Virus software companies need to be added in the Switch.

NOTE: If the update server is linked to the JWAC enabled port on the switch, it must be added to the static FDB before it can work properly.

Format

```
config jwac update_server [add | delete] [ipaddress <network_address> | ipv6address <ipv6networkaddr>]
{[tcp_port <port_number 1-65535> | udp_port <port_number 1-65535>]}
```

Parameters

add - Specify to add a network address to which the traffic will not be blocked. Up to 100 network addresses can be added.
delete - Specify to delete a network address to which the traffic will not be blocked.
ipaddress - Specify the network address for the update server. <network address> - Enter the network IP address here.
ipv6address - Specify the IPv6 network address for the update server network. To set a specific IPv6 network address, please use "/" to separate the IPv6 address and the number of network mask bits. If TCP port or UDP port number is not specified, all TCP/UDP ports are accessible <ipv6networkaddr> - Enter the IPv6 network address here.
tcp_port - (Optional) Specify a TCP port number between 1 and 65535. <port number 1-65535> - Enter a TCP port value between 1 and 65535.
udp_port - (Optional) Specify a UDP port number between 1 and 65535. <port number 1-65535> - Enter a UDP port value between 1 and 65535.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the update servers:

```
DGS-3000-26TC:admin#config jwac update_server add ipaddress 10.1.1.1/8
Command: config jwac update_server add ipaddress 10.1.1.1/8

Update Server 10.0.0.0/8 is added.

Success.

DGS-3000-26TC:admin#
```

43-17 config jwac switch_http_port

Description

This command is used to configure the TCP port which the JWAC switch listens to. This port number is used in the second stage of the authentication. PC users will connect to the page on the Switch to input the user name and password. If not specified, the default port number is 80. If no protocol is specified, the protocol is HTTP.

HTTP cannot run on TCP port 443, and HTTPS cannot run on TCP port 80.

Format

```
config jwac switch_http_port <tcp_port_number 1-65535> {[http | https]}
```

Parameters

<tcp_port_number 1-65535> - Enter a TCP port which the JWAC switch listens to and uses to finish the authenticating process.

http - (Optional) Specify the JWAC run HTTP protocol on this TCP port.

https - (Optional) Specify the JWAC run HTTPS protocol on this TCP port.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the TCP port which the JWAC switch listens to:

```
DGS-3000-26TC:admin#config jwac switch_http_port 8888 http
Command: config jwac switch_http_port 8888 http

Success.

DGS-3000-26TC:admin#
```

43-18 config jwac ports

Description

This command is used to configure port state of JWAC.

Format

```
config jwac ports [<portlist> | all] {state [enable | disable] | max_authenticating_host <value 0-50> |
aging_time [infinite | <min 1-1440>] | idle_time [infinite | <min 1-1440>] | block_time [<sec 0-300>] |
auth_mode [host_based | port_based]}(1)
```

Parameters

<portlist> - Enter a port range for setting the JWAC state.

all - Specify to configure all switch ports' JWAC state.

state - Specify the port state of JWAC.

enable - Specify to enable the JWAC port state.

disable - Specify to disable the JWAC port state.

max_authenticating_host - Specify the maximum number of hosts that can process authentication on each port at the same time. The default value is 50.

<value 0-50> - Enter the maximum number of authenticating hosts, between 0 and 50.

aging_time - Specify a time period during which an authenticated host will keep in authenticated state.

infinite - Specify to indicate the authenticated host on the port will never ageout.

<min 1-1440> - Enter an aging time between 1 and 1440 minutes. The default value is 1440 minutes.

idle_time - If there is no traffic during idle time, the host will be moved back to unauthenticated state.

infinite - Specify to indicate the idle state of the authenticated host on the port will never be checked. The default value is infinite.

<min 1-1440> - Enter an idle time between 1 and 1440 minutes.

block_time - If a host fails to pass the authentication, it will be blocked for a period specified by the blocking time. The default value is 60 seconds.

<sec 0-300> - Enter a blocking time value between 0 and 300.

auth_mode - Specify the port authentication mode.

host_based - Specify the port authentication mode as host-based.

port_based - Specify the port authentication mode as port-based.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the JWAC port state:

```
DGS-3000-26TC:admin#config jwac ports 1-9 state enable
Command: config jwac ports 1-9 state enable
```

Success.

```
DGS-3000-26TC:admin#
```

43-19 show jwac ports

Description

This command is used to display the port configuration of JWAC.

Format

show jwac ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a port range to show the configuration of JWAC.

Restrictions

None.

Example

To display JWAC ports 1 to 4:

```
DGS-3000-26TC:admin#show jwac ports 1-4
Command: show jwac ports 1-4
```

Port	State	Aging Time (min)	Idle Time (min)	Block Time (sec)	Auth Mode	Max Hosts
1	Enabled	1440	Infinite	60	Host-based	50
2	Enabled	1440	Infinite	60	Host-based	50
3	Enabled	1440	Infinite	60	Host-based	50
4	Enabled	1440	Infinite	60	Host-based	50

```
DGS-3000-26TC:admin#
```

43-20 config jwac radius_protocol

Description

This command is used to specify the RADIUS protocol used by JWAC to complete RADIUS authentication.

JWAC shares other RADIUS configurations with 802.1X. When using this command to set the RADIUS protocol, make sure the RADIUS server added by the **config radius** command supports the protocol.

Format

config jwac radius_protocol [local | eap_md5 | pap | chap | ms_chap | ms_chapv2]

Parameters

local - Specify the JWAC switch uses the local user DB to complete the authentication.
eap_md5 - Specify the JWAC switch uses EAP MD5 to communicate with the RADIUS server.
pap - Specify the JWAC switch uses PAP to communicate with the RADIUS server.
chap - Specify the JWAC switch uses CHAP to communicate with the RADIUS server.
ms_chap - Specify the JWAC switch uses MS-CHAP to communicate with the RADIUS server.
ms_chapv2 - Specify the JWAC switch uses MS-CHAPv2 to communicate with the RADIUS server.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the RADIUS protocol used by JWAC:

```
DGS-3000-26TC:admin#config jwac radius_protocol ms_chapv2
Command: config jwac radius_protocol ms_chapv2

Success.

DGS-3000-26TC:admin#
```

43-21 create jwac user

Description

This command is used to create JWAC users in the local database. When "local" is chosen while configuring the JWAC RADIUS protocol, the local database will be used.

Format

create jwac user <username 15> {vlan <vlanid 1-4094>}

Parameters

<username 15> - Enter the user name to be created.
vlan - (Optional) Specify the target VLAN ID for the authenticated host which uses this user account to pass authentication.
<vlanid 1-4094> - Enter the target VLAN ID for the authenticated host which uses this user account to pass authentication. The VLAN ID value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a JWAC user in the local database:

```

DGS-3000-26TC:admin#create jwac user 112233
Command: create jwac user 112233

Enter a case-sensitive new password:*****
Enter the new password again for confirmation:*****
Success.

DGS-3000-26TC:admin#

```

43-22 config jwac user

Description

This command is used to configure a JWAC user.

Format

config jwac user <username 15> {vlan <vlanid 1-4094>}

Parameters

<username 15> - Enter the user name to be configured.

vlan - (Optional) Specify the target VLAN ID for the authenticated host which uses this user account to pass authentication.

<vlanid 1-4094> - Enter the target VLAN ID for the authenticated host which uses this user account to pass authentication. The VLAN ID value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a JWAC user:

```

DGS-3000-26TC:admin#config jwac user 112233
Command: config jwac user 112233

Enter a old password:****
Enter a case-sensitive new password: ****
Enter the new password again for confirmation: ****
Success.

DGS-3000-26TC:admin

```

43-23 delete jwac

Description

This command is used to delete JWAC users from the local database.

Format

delete jwac [user <username 15> | all_users]

Parameters

user - Specify the user name to be deleted.
<username 15> - Enter the user name to be deleted. The user name can be up to 15 characters long.
all_users - Specify all user accounts in the local database will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a JWAC user from the local database:

```
DGS-3000-26TC:admin#delete jwac user 112233
Command: delete jwac user 112233

Success.

DGS-3000-26TC:admin#
```

43-24 show jwac user

Description

This command is used to display JWAC users in the local database.

Format

show jwac user

Parameters

None.

Restrictions

None.

Example

To display the current JWAC local users:

```
DGS-3000-26TC:admin#show jwac user
```

```
Command: show jwac user
```

User Name	Password	VID
112233	112233	-
123	123	1

```
Total Entries:2
```

```
DGS-3000-26TC:admin#
```

43-25 clear jwac auth_state

Description

This command is used to clear authentication entries.

Format

```
clear jwac auth_state [ports [all | <portlist>] {authenticated | authenticating | blocked} | mac_addr <macaddr>]
```

Parameters

ports - Specify the port range to delete hosts on.

all - Specify to delete all ports.

<portlist> - Enter range of ports to delete.

authenticated - (Optional) Specify the state of host to delete.

authenticating - (Optional) Specify the state of host to delete.

blocked - (Optional) Specify the state of host to delete.

mac_addr - Deletes a specified host with this MAC address.

<macaddr> - Enter the MAC address here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete authentication entries:

```
DGS-3000-26TC:admin#clear jwac auth_state ports all blocked
```

```
Command: clear jwac auth_state ports all blocked
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

43-26 show jwac auth_state ports

Description

This command is used to display information for JWAC client hosts.

Format

```
show jwac auth_state ports {<portlist>}
```

Parameters

<portlist> - (Optional) Enter a port range to show the JWAC authentication entries.
If no port is specified, the JWAC authentication state will be displayed for all ports.

Restrictions

None.

Example

To display JWAC authentication entries for ports 1 to 4:

```
DGS-3000-26TC:admin#show jwac auth_state ports 1-4
Command: show jwac auth_state ports 1-4
Pri - Priority. State - A:Authenticated, B:Blocked, -:Authenticating
Time - Aging Time/Idle Time for authenticated entries.
```

Port	MAC Address	State	VID	Pri	Time	IP	User Name
1	00-00-00-00-00-01	A	20	3	1440/30	192.168.101.239	jack
1	00-00-00-00-00-02	A	1234	-	1440/30	172.18.61.242	tom
1	00-00-00-00-00-03	B	-	-	-/40	172.18.61.243	user
1	00-00-00-00-00-04	-	-	-	10	-	-
2	00-00-00-00-00-10(P)	A	1234	-	1440/30	10.10.10.90	admin
3	00-00-00-00-00-20(P)	-	-	-	1440/30	10.10.10.131	-
3	00-00-00-00-00-21(P)	B	-	-	-/29	172.18.61.133	lina
4	00-00-00-00-00-21(P)	A	1234	5	1440/30	3000:2000:3000:aabb:bbcc:ccdd:d dee:eeff	name

```
Total Authenticating Hosts      : 2
Total Authenticated Hosts       : 4
Total Blocked Hosts             : 2

DGS-3000-26TC:admin#
```

43-27 config jwac authorization attributes

Description

This command is used to enable or disable acceptance of authorized configuration. When the authorization is enabled for JWAC's RADIUS, the authorized data assigned by the RADIUS server will be accepted if the global authorization network is enabled. When the authorization is enabled for JWAC's local, the authorized data assigned by the local database will be accepted.

Format

```
config jwac authorization attributes {radius [enable | disable] | local [enable | disable]}(1)
```

Parameters

radius - If Specify to enable, the authorized data assigned by the RADIUS server will be accepted if the global authorization network is enabled. The default state is enabled.
enable - Specify to enable authorized data assigned by the RADIUS server to be accepted.

disable - Specify to disable authorized data assigned by the RADIUS server from being accepted.

local - If Specify to enable, the authorized data assigned by the local database will be accepted if the global authorization network is enabled. The default state is enabled.

enable - Specify to enable authorized data assigned by the local database to be accepted.

disable - Specify to disable authorized data assigned by the local database from being accepted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the configuration authorized from the local database:

```
DGS-3000-26TC:admin#config jwac authorization attributes local disable
Command: config jwac authorization attributes local disable

Success.

DGS-3000-26TC:admin#
```

43-28 show jwac update_server

Description

This command is used to display the JWAC update server.

Format

show jwac update_server

Parameters

None.

Restrictions

None.

Example

To display the JWAC update server:

```
DGS-3000-26TC:admin#show jwac update_server
Command: show jwac update_server

Index  IP                               TCP/UDP  Port  State
-----  -----
1      10.0.0.0/8                       TCP      80    Inactive
2      10.1.1.1/32                       UDP      90    Inactive
3      3000::/8                          -        -     Inactive
4      3001::/16                         -        -     Inactive

DGS-3000-26TC:admin#
```


43-29 config jwac authentication_page element

Description

This command is used by administrators to customize the JWAC authenticate page.

Format

```
config jwac authentication_page element [japanese | english] [default | page_title <desc 128> |
login_window_title <desc 32> | user_name_title <desc 16> | password_title <desc 16> |
logout_window_title <desc 32> | notification_line <value 1-5> <desc 128>]
```

Parameters

japanese - Specify to change to the Japanese page.
english - Specify to change to the English page.
default - Specify to reset the page element to default.
page_title - Specify the title of the authenticate page. <desc 128> - Enter the title of the authenticate page. The page title description can be up to 128 characters long.
login_window_title - Specify the login window title of the authenticate page. <desc 32> - Enter the login window title of the authenticate page. The login window title description can be up to 32 characters long.
user_name_title - Specify the user name title of the authenticate page. <desc 16> - Enter the user name title of the authenticate page. The user name title description can be up to 16 characters long.
password_title - Specify the password title of the authenticate page. <desc 16> - Enter the password title of the authenticate page. The password title description can be up to 16 characters long.
logout_window_title - Specify the logout window title mapping of the authenticate page. <desc 32> - Enter the logout window title mapping of the authenticate page. The logout window title description can be up to 32 characters long.
notification_line - Specify this parameter to set the notification information by line in authentication Web pages. <value 1-5> - Enter a notification line value between 1 and 5. <desc 128> - Enter a notification line description up to 128 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To customize the authenticate page:

```
DGS-3000-26TC:admin# config jwac authentication_page element japanese page_title "ディーリンク
ジャパン株式会社" login_window_title "JWAC 认证" user_name_title "ユーザ名" password_title "パスワ
ード" logout_window_title "ログアウト"
Command: config jwac authentication_page element japanese page_title "ディーリンクジャパン株式会社
" login_window_title "JWAC 认证" user_name_title "ユーザ名" password_title "パスワード"
logout_window_title "ログアウト"

Success.

DGS-3000-26TC:admin#
```

43-30 config jwac authenticate_page

Description

This command is used by administrators to decide which authenticate page to use.

Format

config jwac authenticate_page [japanese | english]

Parameters

japanese - Specify to change to the Japanese page.

english - Specify to change to the English page. This is the default page.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To customize the authenticate page:

```
DGS-3000-26TC:admin#config jwac authenticate_page japanese
Command: config jwac authenticate_page japanese

Success.

DGS-3000-26TC:admin#
```

43-31 show jwac authenticate_page

Description

This command is used to display the element mapping of the customized authenticate page.

Format

show jwac authenticate_page

Parameters

None.

Restrictions

None.

Example

To display the element mapping of the customized authenticate page:

```
DGS-3000-26TC:admin#show jwac authenticate_page
```

```
Command: show jwac authenticate_page
```

```
Current Page : English Version
```

```
English Page Element
```

```
-----  
Page Title           :  
Login Window Title   : Authentication Login  
User Name Title      : User Name  
Password Title       : Password  
Logout Window Title  : Logout from the network  
Notification         :
```

```
Japanese Page Element
```

```
-----  
Page Title           :  
Login Window Title   : 社内 LAN 認証ログイン  
User Name Title      : ユーザ ID  
Password Title       : パスワード
```

```
CTRL+C ESC q Quit SPACE n Next Page ENTER Next Entry a All
```

Chapter 44 Jumbo Frame Command List

enable jumbo_frame

disable jumbo_frame

show jumbo_frame

44-1 enable jumbo_frame

Description

This command is used to configure the jumbo frame setting as enable.

Format

enable jumbo_frame

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable the Jumbo frame:

```
DGS-3000-26TC:admin#enable jumbo_frame
Command: enable jumbo_frame

The maximum size of jumbo frame is 12288 bytes.
Success.

DGS-3000-26TC:admin#
```

44-2 disable jumbo_frame

Description

This command is used to configure the jumbo frame setting as disable.

Format

disable jumbo_frame

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable the Jumbo frame:

```
DGS-3000-26TC:admin#disable jumbo_frame
Command: disable jumbo_frame

Success.

DGS-3000-26TC:admin#
```

44-3 show jumbo_frame

Description

This command is used to display the current configuration of jumbo frame.

Format

show jumbo_frame

Parameters

None.

Restrictions

None.

Example

To show the Jumbo frame:

```
DGS-3000-26TC:admin#show jumbo_frame
Command: show jumbo_frame

Jumbo Frame State : Disabled
Maximum Frame Size : 1536 Bytes

DGS-3000-26TC:admin#
```

Chapter 45 Layer 2 Protocol Tunneling (L2PT) Command List

enable l2protocol_tunnel

disable l2protocol_tunnel

config l2protocol_tunnel ports [<portlist> | all] type [uni tunneled_protocol [{stp | gvrp | protocol_mac [01-00-0C-CC-CC-CC | 01-00-0C-CC-CC-CD]}(1) | all] {threshold <value 0-65535>} | nni | none]

show l2protocol_tunnel {[uni | nni]}

45-1 enable l2protocol_tunnel

Description

This command is used to enable the Layer 2 protocol tunneling function.

Format

enable l2protocol_tunnel

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable the Layer 2 protocol tunneling function:

```
DGS-3000-26TC:admin#enable l2protocol_tunnel
Command: enable l2protocol_tunnel

Success.

DGS-3000-26TC:admin#
```

45-2 disable l2protocol_tunnel

Description

This command is used to disable the L2PT function globally on the Switch.

Format

disable l2protocol_tunnel

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable the Layer 2 protocol tunneling function:

```
DGS-3000-26TC:admin#disable l2protocol_tunnel
Command: disable l2protocol_tunnel

Success.

DGS-3000-26TC:admin#
```

45-3 config l2protocol_tunnel ports

Description

This command is used to configure Layer 2 protocol tunneling on ports. Layer 2 protocol tunneling is used to tunnel Layer 2 protocol packet. If a Layer 2 protocol is tunnel-enabled on an UNI, once received the PDU on this port, the multicast destination address of the PDU will be replaced by Layer 2 protocol tunneling multicast address. The Layer 2 protocol tunneling multicast address for STP is 01-05-5D-00-00-00, for GVRP is 01-05-5D-00-00-21, for Layer 2 protocols MAC 01-00-0C-CC-CC-CC is 01-05-5D-00-00-10 and for protocol MAC 01-00-0C-CC-CC-CD is 01-05-5D-00-00-11.

When QinQ is enabled, an S-TAG will be added to the Layer 2 PDU too. The S-TAG is assigned according QinQ VLAN configuration.

Format

config l2protocol_tunnel ports [<portlist> | all] type [uni tunneled_protocol [{stp | gvrp | protocol_mac [01-00-0C-CC-CC-CC | 01-00-0C-CC-CC-CD]}(1) | all] {threshold <value 0-65535>} | nni | none]

Parameters

<portlist> - Enter a list of ports on which the Layer 2 protocol tunneling to be configured.
all - Specify to have all ports to be configured
type - Specify the type of the ports.
uni - Specify the ports as UNI ports.
tunneled_protocol - Specify tunneled protocols on the UNI ports.
stp - Specify to use the STP protocol.
gvrp - Specify to use the GVRP protocol.
protocol_mac - Specify the destination MAC address of the L2 protocol packets that will tunneled on these UNI ports.
01-00-0C-CC-CC-CC - Specify the MAC address as 01-00-0C-CC-CC-CC.
01-00-0C-CC-CC-CD - Specify the MAC address as 01-00-0C-CC-CC-CD.
all - All tunnel-abled Layer 2 protocols will be tunneled on the ports.
threshold - (Optional) Specify the drop threshold for packets-per-second accepted on the UNI ports. The ports drop the PDU if the protocol's threshold is exceeded.
<value 0-65535> - Enter the threshold range value between 0 to 65535 (packet/second). 0 means no limit. By default, the value is 0.
nni - Specify the ports as NNI ports.
none - Disables tunnel on it.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the STP tunneling on ports 1-4:

```
DGS-3000-26TC:admin#config l2protocol_tunnel ports 1-4 type uni tunneled_protocol stp
Command: config l2protocol_tunnel ports 1-4 type uni tunneled_protocol stp

Success.

DGS-3000-26TC:admin#
```

45-4 show l2protocol_tunnel

Description

This command is used to display Layer 2 protocol tunneling information.

Format

show l2protocol_tunnel {[uni | nni]}

Parameters

uni - (Optional) Specify to show UNI detail information, include tunneled and dropped PDU statistic.

nni - (Optional) Specify to show NNI detail information, include de-capsulated Layer 2 PDU statistic.

Restrictions

None.

Example

To show Layer 2 protocol tunneling information summary:

```
DGS-3000-26TC:admin#show l2protocol_tunnel
Command: show l2protocol_tunnel

Global State : Enabled
UNI Ports    : 1-4
NNI Ports    :

DGS-3000-26TC:admin#
```

To show Layer 2 protocol tunneling information summary:


```
DGS-3000-26TC:admin#show l2protocol_tunnel uni
```

```
Command: show l2protocol_tunnel uni
```

UNI	Tunneled	Threshold
Port	Protocol	(packet/sec)
----	-----	-----
1	STP	0
2	STP	0
3	STP	0
4	STP	0

```
DGS-3000-26TC:admin#
```

Chapter 46 Link Aggregation Command List

```

create link_aggregation group_id <value> {type [lacp | static]}
delete link_aggregation group_id <value>
config link_aggregation group_id <value> {master_port <port> | ports <portlist> | state [enable | disable]}
config link_aggregation algorithm [mac_source | mac_destination|mac_source_dest | ip_source |
ip_destination | ip_source_dest]
show link_aggregation {group_id <value> | algorithm}
config lacp_port <portlist> mode [active | passive]
show lacp_port <portlist>

```

46-1 create link_aggregation group_id

Description

This command is used to create a link aggregation group on the Switch.

Format

```
create link_aggregation group_id <value> {type [lacp | static]}
```

Parameters

```

<value> - Enter the group ID value here. The value is from 1 to 13.
type - (Optional) Specify the group type is belong to static or LACP. If type is not specified, the default is static
type.
lacp - Specify to use LACP as the group type.
static - Specify to use static as the group type.

```

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create link aggregation group:

```

DGS-3000-26TC:admin#create link_aggregation group_id 1 type lacp
Command: create link_aggregation group_id 1 type lacp

Success.

DGS-3000-26TC:admin#

```

46-2 delete link_aggregation group_id

Description

This command is used to delete a previously configured link aggregation group.

Format

```
delete link_aggregation group_id <value>
```

Parameters

<value> - Enter the group ID value here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete link aggregation group:

```
DGS-3000-26TC:admin#delete link_aggregation group_id 3
Command: delete link_aggregation group_id 3

Success.

DGS-3000-26TC:admin#
```

46-3 config link_aggregation group_id

Description

This command is used to configure a previously created link aggregation group.

Format

config link_aggregation group_id <value> {master_port <port> | ports <portlist> | state [enable | disable]}

Parameters

group_id - Specify the group ID. The group number identifies each of the groups.

<value> - Enter the group ID value here. For the DGS-3000-10TC, this value must be between 1 and 5. For the DGS-3000-24TC, this value must be between 1 and 12. For the DGS-3000-26TC, this value must be between 1 and 13.

master_port - (Optional) Master port ID. Specify which port (by port number) of the link aggregation group will be the master port. All of the ports in a link aggregation group will share the port configuration with the master port.

<port> - Enter the master port number here.

ports - (Optional) Specify a range of ports that will belong to the link aggregation group.

<portlist> - Enter the list of port used for the configuration here.

state - (Optional) Specify to enable or disable the specified link aggregation group. If not specified, the group will keep the previous state, the default state is disabled. If configure LACP group, the ports' state machine will start.

enable - Enables the specified link aggregation group.

disable - Disables the specified link aggregation group.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To define a load-sharing group of ports:

```
DGS-3000-26TC:admin#config link_aggregation group_id 1 master_port 5 ports 5-7
Command: config link_aggregation group_id 1 master_port 5 ports 5-7

Success.

DGS-3000-26TC:admin#
```

46-4 config link_aggregation algorithm

Description

This command is used to configure the part of the packet examined by the Switch when selecting the egress port for transmitting load-sharing data. This feature is available using the address-based load-sharing algorithm, only.

Format

config link_aggregation algorithm [mac_source | mac_destination|mac_source_dest | ip_source | ip_destination | ip_source_dest]

Parameters

mac_source - Indicates that the Switch should examine the MAC source address.
mac_destination - Indicates that the Switch should examine the MAC destination address.
mac_source_dest - Indicates that the Switch should examine the MAC source and destination address.
ip_source - Indicates that the Switch should examine the IP source address.
ip_destination - Indicates that the Switch should examine the IP destination address.
ip_source_dest - Indicates that the Switch should examine the IP source address and destination address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure link aggregation algorithm for mac-source-dest:

```
DGS-3000-26TC:admin#config link_aggregation algorithm mac_source_dest
Command: config link_aggregation algorithm mac_source_dest

Success.

DGS-3000-26TC:admin#
```

46-5 show link_aggregation

Description

This command is used to display the current link aggregation configuration on the Switch.

Format

show link_aggregation {group_id <value> | algorithm}

Parameters

group_id - (Optional) Specify the group ID. The group number identifies each of the groups.
--

<value > - Enter the group ID value here.

algorithm - (Optional) Allows you to specify the display of link aggregation by the algorithm in use by that group. If no parameter specified, system will display all link aggregation information.

Restrictions

None.

Example

Link aggregation group enable:

```
DGS-3000-26TC:admin#show link_aggregation
Command: show link_aggregation

Link Aggregation Algorithm = MAC-Source-Dest

Group ID      : 1
Type          : LACP
Master Port   : 5
Member Port   : 5-7
Active Port   :
Status        : Enabled
Flooding Port : 7

Total Entries : 1

DGS-3000-26TC:admin#
```

Link aggregation group enable and no member linkup:

```
DGS-3000-26TC:admin#show link_aggregation
Command: show link_aggregation

Link Aggregation Algorithm = MAC-Source-Dest

Group ID      : 1
Type          : LACP
Master Port   : 5
Member Port   : 5-7
Active Port   :
Status        : Enabled
Flooding Port :

Total Entries : 1

DGS-3000-26TC:admin#
```

Link aggregation group disabled:

```
DGS-3000-26TC:admin#show link_aggregation
Command: show link_aggregation

Link Aggregation Algorithm = MAC-Source-Dest

Group ID      : 1
Type         : LACP
Master Port   : 5
Member Port   : 5-7
Active Port   :
Status       : Disabled
Flooding Port : 7

Total Entries : 1

DGS-3000-26TC:admin#
```

46-6 config lacp_port

Description

This command is used to configure per-port LACP mode.

Format

config lacp_port <portlist> mode [active | passive]

Parameters

<portlist> - Enter the list of port used for the configuration here.

mode - Specify the LACP mode used.

active - Specify to set the LACP mode as active.

passive - Specify to set the LACP mode as passive.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To config port LACP mode:

```
DGS-3000-26TC:admin#config lacp_port 1-12 mode active
command: config lacp_port 1-12 mode active

Success.

DGS-3000-26TC:admin#
```

46-7 show lacp_port

Description

This command is used to display the current mode of LACP of the ports.

Format

show lacp_port <portlist>

Parameters

<portlist> - Enter the list of ports used for this configuration here.
If no parameter specified, the system will display current LACP and all port status.

Restrictions

None.

Example

To show port lacp mode:

```
DGS-3000-26TC:admin#show lacp_port
Command: show lacp_port

Port      Activity
-----  -
1         Active
2         Active
3         Active
4         Active
5         Active
6         Active
7         Active
8         Active
9         Active
10        Active
11        Active
12        Active

DGS-3000-26TC:admin#
```

Chapter 47 Link Layer Discovery Protocol (LLDP) Command List

enable lldp
disable lldp
config lldp [message_tx_interval <sec 5-32768> message_tx_hold_multiplier <int 2-10> tx_delay <sec 1-8192> reinit_delay <sec 1-10>]
config lldp notification_interval <sec 5-3600>
config lldp ports [<portlist> all] [notification [enable disable] admin_status [tx_only rx_only tx_and_rx disable] mgt_addr [ipv4 <ipaddr> ipv6 <ipv6addr>] [enable disable] basic_tlvs [{all} {port_description system_name system_description system_capabilities}] [enable disable] dot1_tlv_pvid [enable disable] dot1_tlv_protocol_vid [vlan [all <vlan_name 32>] vlanid <vidlist>] [enable disable] dot1_tlv_vlan_name [vlan [all <vlan_name 32>] vlanid <vidlist>] [enable disable] dot1_tlv_protocol_identity [all {eapol lacp gvrp stp}] [enable disable] dot3_tlvs [{all} {mac_phy_configuration_status link_aggregation power_via_mdii maximum_frame_size}] [enable disable]]
config lldp forward_message [enable disable]
show lldp
show lldp mgt_addr {[ipv4 <ipaddr> ipv6 <ipv6addr>]}
show lldp ports {<portlist>}
show lldp local_ports {<portlist>} {mode [brief normal detailed]}
show lldp remote_ports {<portlist>} {mode [brief normal detailed]}
show lldp statistics
show lldp statistics ports {<portlist>}
config lldp_med fast_start_repeat_count <value 1 - 10>
config lldp_med log state [enable disable]
config lldp_med notification topo_change_ports [<portlist> all] state [enable disable]
config lldp_med ports [<portlist> all] med_transmit_capabilities [all {capabilities network_policy power_pse inventory}] state [enable disable]
show lldp_med ports {<portlist>}
show lldp_med
show lldp_med local_ports {<portlist>}
show lldp_med remote_ports {<portlist>}

47-1 enable lldp

Description

This command is used to globally enable the LLDP function.

When this function is enabled, the Switch can start to transmit LLDP packets and receive and process the LLDP packets. The specific function of each port will depend on the per-port LLDP setting.

For the advertisement of LLDP packets, the Switch announces the information to its neighbor through ports. For the receiving of LLDP packets, the Switch will learn the information from the LLDP packets advertised from the neighbor in the neighbor table. The default state for LLDP is disabled.

Format

```
enable lldp
```

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable LLDP:

```
DGS-3000-26TC:admin#enable lldp
Command: enable lldp

Success.

DGS-3000-26TC:admin#
```

47-2 disable lldp

Description

This command is used to stop sending and receiving of LLDP advertisement packet.

Format

disable lldp

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable LLDP:

```
DGS-3000-26TC:admin#disable lldp
Command: disable lldp

Success.

DGS-3000-26TC:admin#
```

47-3 config lldp

Description

This command is used to change the packet transmission interval.

Format

config lldp [message_tx_interval <sec 5-32768> | message_tx_hold_multiplier <int 2-10> | tx_delay <sec 1-8192> | reinit_delay <sec 1-10>]

Parameters

message_tx_interval - Changes the interval between consecutive transmissions of LLDP advertisements on any given port. The default setting 30 seconds.

<sec 5-32768> - Enter the message transmit interval value here. This value must be between 5 and 32768 seconds.

message_tx_hold_multiplier - Specify to configure the message hold multiplier. The default setting 4.

<2-10> - Enter the message transmit hold multiplier value here. This value must be between 2 and 10.

tx_delay - Specify the minimum interval between sending of LLDP messages due to constantly change of MIB content. The default setting 2 seconds.

<sec 1-8192> - Enter the transmit delay value here. This value must be between 1 and 8192 seconds.

reinit_delay - Specify the minimum time of reinitialization delay interval. The default setting 2 seconds.

<sec 1-10> - Enter the re-initiate delay value here. This value must be between 1 and 10 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To change the packet transmission interval:

```
DGS-3000-26TC:admin#config lldp message_tx_interval 30
Command: config lldp message_tx_interval 30

Success.

DGS-3000-26TC:admin#
```

47-4 config lldp notification_interval

Description

This command is used to configure the timer of notification interval for sending notification to configured SNMP trap receiver(s).

Format

config lldp notification_interval <sec 5-3600>

Parameters

notification_interval - Specify the timer of notification interval for sending notification to configured SNMP trap receiver(s). The default setting is 5 seconds.

<sec 5-3600> - Enter the notification interval value here. This value must be between 5 and 3600 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To changes the notification interval to 10 second:

```
DGS-3000-26TC:admin#config lldp notification_interval 10
Command: config lldp notification_interval 10

Success.

DGS-3000-26TC:admin#
```

47-5 config lldp ports

Description

This command is used to configure each port for sending a notification to configure the SNMP trap receiver(s).

Format

```
config lldp ports [<portlist> | all] [notification [enable | disable] | admin_status [tx_only | rx_only |
tx_and_rx | disable] | mgt_addr [ipv4 <ipaddr> | ipv6 <ipv6addr>] [enable | disable] | basic_tlvs [{all} |
{port_description | system_name | system_description | system_capabilities}] [enable | disable] |
dot1_tlv_pvid [enable| disable] | dot1_tlv_protocol_vid [vlan [all | <vlan_name 32> ] | vlanid <vidlist>]
[enable | disable] | dot1_tlv_vlan_name [vlan [all | <vlan_name 32>] | vlanid <vidlist>] [enable | disable] |
dot1_tlv_protocol_identity [all | {eapol | lacp | gvrp | stp}] [enable | disable] | dot3_tlvs [{all} |
{mac_phy_configuration_status | link_aggregation | power_via_mdi | maximum_frame_size}] [enable |
disable]]
```

Parameters

-
- <portlist>** - Enter a list of ports used for the configuration here.
 - all** - Specify that all the ports will be used for this configuration.
 - notification** - Enables or disables the SNMP trap notification of LLDP data changes detected on advertisements received from neighbor devices. The default notification state is disabled.
 - enable** - Specify that the SNMP trap notification of LLDP data changes detected will be enabled.
 - disable** - Specify that the SNMP trap notification of LLDP data changes detected will be disabled.
 - admin_status** - Specify the per-port transmit and receive modes.
 - tx_only** - Configure the specified port(s) to transmit LLDP packets.
 - rx_only** - Configures the specified port(s) to receive LLDP packets from neighbors.
 - tx_and_rx** - Configures the specified port(s) to both transmit and receive LLDP packets.
 - disable** - Disable LLDP packet transmit and receive on the specified port(s).
 - mgt_addr** - Specify the management address used.
 - ipv4** - Specify the IPv4 address used.
 - <ipaddr>** - Enter the IP address used for this configuration here.
 - ipv6** - Specify the IPv6 address used.
 - <ipv6addr>** - Enter the IPv6 address used for this configuration here.
 - enable** - Specify that the advertising indicated management address instance will be enabled.
 - disable** - Specify that the advertising indicated management address instance will be disabled.
 - basic_tlvs** - Specify the basic TLV data types used from outbound LLDP advertisements.
 - all** - (Optional) Specify that all the basic TLV data types will be used.
 - port_description** - (Optional) This TLV optional data type indicates that LLDP agent should transmit Port Description TLV on the port. The default state is disabled.
 - system_name** - (Optional) This TLV optional data type includes indicates that LLDP agent should transmit System Name TLV. The default state is disabled.
 - system_description** - (Optional) This TLV optional data type includes indicates that LLDP agent should transmit System Description TLV. The default state is disabled.
 - system_capabilities** - (Optional) This TLV optional data type includes indicates that LLDP agent should transmit System Capabilities TLV. The system capability will indicate whether the device provides repeater, bridge, or router function, and whether the provided functions are currently enabled. The default state is disabled.
 - enable** - Specify that the basic TLV data types used from outbound LLDP advertisements will be enabled.
 - disable** - Specify that the basic TLV data types used from outbound LLDP advertisements will be disabled.
 - dot1_tlv_pvid** - This TLV optional data type determines whether the IEEE 802.1 organizationally defined port VLAN ID TLV transmission is allowed on a given LLDP transmission capable port. The default state is disable.
 - enable** - Specify that the Dot1 TLV PVID option will be enabled.
-

disable - Specify that the Dot1 TLV PVID option will be disabled.

dot1_tlv_protocol_vid - This TLV optional data type determines whether the IEEE 802.1 organizationally defined port and protocol VLAN ID TLV transmission is allowed on a given LLDP transmission capable port. The default state is disable.

vlan - Specify the VLAN used for this configuration.

all - Specify that all the configured VLANs will be used for this configuration.

<vlan_name 32> - Enter the name of the VLAN here. This name can be up to 32 characters long.

vlanid - Specify the VLAN ID used for this configuration.

<vlanid_list> - Enter the ID of the VLAN here.

enable - Specify that the Dot1 TLV protocol VID will be enabled.

disable - Specify that the Dot1 TLV protocol VID will be disabled.

dot1_tlv_vlan_name - This TLV optional data type indicates whether the corresponding Local System's VLAN name instance will be transmitted on the port. If a port is associated with multiple VLANs, those enabled VLAN ID will be advertised. The default state is disable.

vlan - Specify the VLAN used for this configuration.

all - Specify that all the configured VLANs will be used for this configuration.

<vlan_name 32> - Enter the name of the VLAN here. This name can be up to 32 characters long.

vlanid - Specify the VLAN ID used for this configuration.

<vlanid_list> - Enter the ID of the VLAN here.

enable - Specify that the Dot1 TLV VLAN name will be enabled.

disable - Specify that the Dot1 TLV VLAN name will be disabled.

dot1_tlv_protocol_identity - This TLV optional data type indicates whether the corresponding Local System's Protocol Identity instance will be transmitted on the port. The Protocol Identity TLV provides a way for stations to advertise protocols that are important to the operation of the network. Such as Spanning Tree Protocol, the Link Aggregation Control Protocol, and numerous vendor proprietary variations are responsible for maintaining the topology and connectivity of the network. If EAPOL, GVRP, STP (including MSTP), and LACP protocol identity is enabled on this port and it is enabled to be advertised, then this protocol identity will be advertised. The default state is disabled.

all - Specify that all the vendor proprietary protocols will be advertised.

eapol - (Optional) Specify that the EAPOL protocol will be advertised.

lACP - (Optional) Specify that the LACP protocol will be advertised.

gvrp - (Optional) Specify that the GVRP protocol will be advertised.

stp - (Optional) Specify that the STP protocol will be advertised.

enable - Specify that the protocol identity TLV according to the protocol specified will be advertised.

disable - Specify that the protocol identity TLV according to the protocol specified will not be advertised.

dot3_tlvs - Specify that the IEEE 802.3 specific TLV data type will be configured.

all - (Optional) Specify that all the IEEE 802.3 specific TLV data type will be used.

mac_phy_configuration_status - (Optional) This TLV optional data type indicates that LLDP agent should transmit MAC/PHY configuration/status TLV. This type indicates it is possible for two ends of an IEEE 802.3 link to be configured with different duplex and/or speed settings and still establish some limited network connectivity. More precisely, the information includes whether the port supported the auto-negotiation function, whether the function is enabled, the auto-negotiated advertised capability, and the operational MAU type. The default state is disabled.

link_aggregation - (Optional) This TLV optional data type indicates that LLDP agent should transmit Link Aggregation TLV. This type indicates the current link aggregation status of IEEE 802.3 MACs. More precisely, the information should include whether the port is capable of doing link aggregation, whether the port is aggregated in a aggregated link, and the aggregated port ID. The default state is disabled.

power_via_mdi - (Optional) This TLV optional data type indicates that LLDP agent should transmit Power via MDI TLV. Three IEEE 802.3 PMD implementations (10BASE-T, 100BASE-TX, and 1000BASE-T) allow power to be supplied over the link for connected non-powered systems. The Power Via MDI TLV allows network management to advertise and discover the MDI power support capabilities of the sending IEEE 802.3 LAN station. The default state is disabled.

maximum_frame_size - (Optional) This TLV optional data type indicates that LLDP agent should transmit 'Maximum-frame-size TLV. The default state is disabled.

enable - Specify that the IEEE 802.3 specific TLV data type selected will be advertised.

disable - Specify that the IEEE 802.3 specific TLV data type selected will be not advertised.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable SNMP notifications from port 1-5:

```
DGS-3000-26TC:admin#config lldp ports 1-5 notification enable
Command: config lldp ports 1-5 notification enable

Success.

DGS-3000-26TC:admin#
```

To configure port 1-5 to transmit and receive:

```
DGS-3000-26TC:admin#config lldp ports 1-5 admin_status tx_and_rx
Command: config lldp ports 1-5 admin_status tx_and_rx

Success.

DGS-3000-26TC:admin#
```

To enable ports 1-2 for manage address entry:

```
DGS-3000-26TC:admin#config lldp ports 1-2 mgt_addr ipv4 10.90.90.90 enable
Command: config lldp ports 1-2 mgt_addr ipv4 10.90.90.90 enable

Success.

DGS-3000-26TC:admin#
```

To configure exclude the system name TLV from the outbound LLDP advertisements for all ports:

```
DGS-3000-26TC:admin#config lldp ports all basic_tlvs system_name enable
Command: config lldp ports all basic_tlvs system_name enable

Success.

DGS-3000-26TC:admin#
```

To configure exclude the VLAN ID TLV from the outbound LLDP advertisements for all ports:

```
DGS-3000-26TC:admin#config lldp ports all dot1_tlv_pvid enable
Command: config lldp ports all dot1_tlv_pvid enable

Success.

DGS-3000-26TC:admin#
```

To configure exclude the port and protocol VLAN ID 1-3 from the outbound LLDP advertisements for all ports:

```
DGS-3000-26TC:admin#config lldp ports all dot1_tlv_protocol_vid vlanid 1-3 enable
Command: config lldp ports all dot1_tlv_protocol_vid vlanid 1-3 enable

Success.

DGS-3000-26TC:admin#
```

To configure exclude the VLAN name TLV from the outbound LLDP advertisements for all ports:

```
DGS-3000-26TC:admin#config lldp ports all dot1_tlv_vlan_name vlanid 1-3 enable
Command: config lldp ports all dot1_tlv_vlan_name vlanid 1-3 enable

Success.

DGS-3000-26TC:admin#
```

To configure exclude the protocol identity TLV from the outbound LLDP advertisements for all ports:

```
DGS-3000-26TC:admin#config lldp ports all dot1_tlv_protocol_identity all enable
Command: config lldp ports all dot1_tlv_protocol_identity all enable

Success.

DGS-3000-26TC:admin#
```

To configure exclude the MAC/PHY configuration/status TLV from the outbound LLDP advertisements for all ports:

```
DGS-3000-26TC:admin#config lldp ports all dot3_tlvs mac_phy_configuration_status enable
Command: config lldp ports all dot3_tlvs mac_phy_configuration_status enable

Success.

DGS-3000-26TC:admin#
```

47-6 config lldp forward_message

Description

This command is used to configure forwarding of LLDP PDU packet when LLDP is disabled.

Format

config lldp forward_message [enable | disable]

Parameters

enable - Enable the forwarding of LLDP PDU configuration events.

disable - Disable the forwarding of LLDP-PDU events. By default it is disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure LLDP to forward LLDP PDUs:

```
DGS-3000-26TC:admin#config lldp forward_message enable
Command: config lldp forward_message enable

Success.

DGS-3000-26TC:admin#
```

47-7 show lldp

Description

This command is used to display the Switch's general LLDP configuration status.

Format

show lldp

Parameters

None.

Restrictions

None.

Example

To display the LLDP system level configuration status:

```
DGS-3000-26TC:admin#show lldp
Command: show lldp

LLDP System Information
  Chassis ID Subtype      : MAC Address
  Chassis ID              : 00-01-02-03-04-00
  System Name             :
  System Description      : Gigabit Ethernet Switch
  System Capabilities     : Repeater, Bridge

LLDP Configurations
  LLDP Status             : Enabled
  LLDP Forward Status     : Enabled
  Message TX Interval     : 30
  Message TX Hold Multiplier: 4
  ReInit Delay            : 2
  TX Delay                 : 2
  Notification Interval   : 5

DGS-3000-26TC:admin#
```

47-8 show lldp mgt_addr

Description

This command is used to display the LLDP management address information.

Format

show lldp mgt_addr {[ipv4 <ipaddr> | ipv6 <ipv6addr>]}

Parameters

ipv4 - (Optional) Specify the IPv4 address used for the display.
<ipaddr> - Enter the IPv4 address used for this configuration here.

ipv6 - (Optional) Specify the IPv6 address used for the display.
<ipv6addr> - Enter the IPv6 address used for this configuration here.

Restrictions

None.

Example

To display management address information:

```
DGS-3000-26TC:admin#show lldp mgt_addr ipv4 10.90.90.90
Command: show lldp mgt_addr ipv4 10.90.90.90

Address 1 :
-----
Subtype           : IPv4
Address           : 10.90.90.90
IF Type          : IfIndex
OID              : 1.3.6.1.4.1.171.10.133.2.1
Advertising Ports : 1-2,5

DGS-3000-26TC:admin#
```

47-9 show lldp ports

Description

This command is used to display the LLDP per port configuration for advertisement options.

Format

show lldp ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.
 If the port list is not specified, information for all the ports will be displayed.

Restrictions

None.

Example

To display the LLDP port 1 TLV option configuration:


```

DGS-3000-26TC:admin#show lldp ports 1
Command: show lldp ports 1

Port ID          : 1
-----
Admin Status     : TX_and_RX
Notification Status : Enabled
Advertised TLVs Option :
  Port Description           Disabled
  System Name                Enabled
  System Description         Disabled
  System Capabilities        Disabled
  Enabled Management Address
    10.90.90.90
  Port VLAN ID              Enabled
  Enabled Port_and_Protocol_VLAN_ID
    1, 2, 3
  Enabled VLAN Name         1-3
  Enabled Protocol_Identity
    (None)
  MAC/PHY Configuration/Status Disabled
  Power Via MDI              Disabled
  Link Aggregation          Disabled
  Maximum Frame Size        Disabled

DGS-3000-26TC:admin#

```

47-10 show lldp local_ports

Description

This command is used to display the per-port information currently available for populating outbound LLDP advertisements.

Format

show lldp local_ports {<portlist>} {mode [brief | normal | detailed]}

Parameters

<portlist> - (Optional) Enter a range of ports to be configured. When port list is not specified, information for all ports will be displayed.

mode - (Optional) Specify the display mode.

brief - Display the information in brief mode.

normal - Display the information in normal mode. This is the default display mode.

detailed - Display the information in detailed mode.

Restrictions

None.

Example

To display outbound LLDP advertisements for port 1 in detailed mode. Port description on the display should use the same value as ifDescr.

```

DGS-3000-26TC:admin#show lldp local_ports 1 mode detailed
Command: show lldp local_ports 1 mode detailed

Port ID : 1
-----
Port ID Subtype           : MAC Address
Port ID                   : 00-01-02-03-04-01
Port Description          : D-Link DGS-3000-26TC R2.00.004
                           Port 1
Port PVID                  : 1
Management Address Count  : 1
    Subtype                : IPv4
    Address                 : 10.90.90.90
    IF Type                 : IfIndex
    OID                     : 1.3.6.1.4.1.171.10.133.2.1

PPVID Entries Count       : 0
    (None)
VLAN Name Entries Count   : 1
    Entry 1 :
        VLAN ID            : 1
        VLAN Name          : default

Protocol Identity Entries Count : 0
CTRL+C  ESC  q  Quit  SPACE  n  Next Page  ENTER  Next Entry  a  All

```

To display outbound LLDP advertisements for port 1 in normal mode:

```

DGS-3000-26TC:admin#show lldp local_ports 1 mode normal
Command: show lldp local_ports 1 mode normal

Port ID : 1
-----
Port ID Subtype           : MAC Address
Port ID                   : 00-01-02-03-04-01
Port Description          : D-Link DGS-3000-26TC R2.00.004
                           Port 1
Port PVID                  : 1
Management Address Count  : 1
PPVID Entries Count       : 0
VLAN Name Entries Count   : 1
Protocol Identity Entries Count : 0
MAC/PHY Configuration/Status : (See Detail)
Link Aggregation          : (See Detail)
Maximum Frame Size        : 1536

DGS-3000-26TC:admin#

```

To display outbound LLDP advertisements for port 1 in brief mode:

```
DGS-3000-26TC:admin#show lldp local_ports 1 mode brief
Command: show lldp local_ports 1 mode brief

Port ID : 1
-----
Port ID Subtype           : MAC Address
Port ID                   : 00-01-02-03-04-01
Port Description          : D-Link DGS-3000-26TC R2.00.004
                           Port 1

DGS-3000-26TC:admin#
```

47-11 show lldp remote_ports

Description

This command is used to display the information learned from the neighbor parameters.

Format

show lldp remote_ports {<portlist>} {mode [brief | normal | detailed]}

Parameters

<portlist> - (Optional) Enter a range of ports to be configured. When port list is not specified, information for all ports will be displayed.

mode - (Optional) Specify to display the information in various modes.

brief - Display the information in brief mode.

normal - Display the information in normal mode. This is the default display mode.

detailed - Display the information in detailed mode.

Restrictions

None.

Example

To display remote table in brief mode:

```
DGS-3000-26TC:admin#show lldp remote_ports 3 mode brief
Command: show lldp remote_ports 3 mode brief

Port ID : 3
-----
Remote Entities Count : 1
Entity 1
  Chassis ID Subtype           : MAC Address
  Chassis ID                   : 00-12-13-04-05-00
  Port ID Subtype              : MAC Address
  Port ID                       : 00-12-13-04-05-03
  Port Description              : D-Link DGS-3000-26TC R2.00.004
                                Port 3

DGS-3000-26TC:admin#
```

To display remote table in normal mode:

```
DGS-3000-26TC:admin# show lldp remote_ports 3 mode normal
Command: show lldp remote_ports 3 mode normal

Port ID : 3
-----
Remote Entities Count : 1
Entity 1
  Chassis ID Subtype      : MAC Address
  Chassis ID              : 00-12-13-04-05-00
  Port ID Subtype        : MAC Address
  Port ID                 : 00-12-13-04-05-03
  Port Description       : D-Link DGS-3000-26TC R2.00.004
                        Port 3
  System Name            :
  System Description     : Fast Ethernet Switch
  System Capabilities    : Repeater, Bridge
  Management Address Count : 1
  Port PVID              : 1
  PPVID Entries Count    : 0
  VLAN Name Entries Count : 0
  Protocol ID Entries Count : 0
  MAC/PHY Configuration/Status : (See Detail)
  Power Via MDI          : (None)
  Link Aggregation       : (See Detail)
  Maximum Frame Size     : 1536
  Unknown TLVs Count     : 0

DGS-3000-26TC:admin#
```

To display remote table in detailed mode:

```
DGS-3000-26TC:admin# show lldp remote_ports 3 mode detailed
Command: show lldp remote_ports 3 mode detailed

Port ID : 3
-----
Remote Entities Count : 1
Entity 1
  Chassis ID Subtype      : MAC Address
  Chassis ID              : 00-12-13-04-05-00
  Port ID Subtype        : MAC Address
  Port ID                 : 00-12-13-04-05-03
  Port Description       : D-Link DGS-3000-26TC R2.00.004
                        Port 3
  System Name            :
  System Description     : Fast Ethernet Switch
  System Capabilities    : Repeater, Bridge
  Management Address Count : 1
    Entry 1 :
      Subtype          : IPv4
      Address          : 10.90.90.90
      IF Type          : IfIndex
      OID              : 1.3.6.1.4.1.171.10.113.9.1

  Port PVID              : 1

  PPVID Entries Count    : 0
    (None)

  VLAN Name Entries Count : 0
    (None)

  Protocol ID Entries Count : 0
    (None)

  MAC/PHY Configuration/Status :
    Auto-Negotiation Support : Supported
    Auto-Negotiation Status  : Enabled
    Auto-Negotiation Advertised Capability : 6c00(hex)
    Auto-Negotiation Operational MAU Type : 0010(hex)

  Power Via MDI          : (None)
  Link Aggregation      :
    Aggregation Capability : Aggregated
    Aggregation Status    : Not Currently in Aggregation
    Aggregation Port ID   : 0

  Maximum Frame Size    : 1536
  Unknown TLVs Count    : 0
    (None)

DGS-3000-26TC:admin#
```

47-12 show lldp statistics

Description

This command is used to display an overview of neighbor detection activity on the Switch.

Format

show lldp statistics

Parameters

None.

Restrictions

None.

Example

To display global statistics information:

```
DGS-3000-26TC:admin#show lldp statistics
Command: show lldp statistics

Last Change Time      : 1792
Number of Table Insert : 0
Number of Table Delete : 0
Number of Table Drop   : 0
Number of Table Ageout : 0

DGS-3000-26TC:admin#
```

47-13 show lldp statistics ports

Description

This command is used to display per-port LLDP statistics

Format

show lldp statistics ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be configured.
If the port list is not specified, information for all the ports will be displayed.

Restrictions

None.

Example

To display statistics information of port 1:

```

DGS-3000-26TC:admin#show lldp statistics ports 1
Command: show lldp statistics ports 1

Port ID : 1
-----
LLDPStatsTXPortFramesTotal      : 23
LLDPStatsRXPortFramesDiscardedTotal : 0
LLDPStatsRXPortFramesErrors     : 0
LLDPStatsRXPortFramesTotal      : 0
LLDPStatsRXPortTLVsDiscardedTotal : 0
LLDPStatsRXPortTLVsUnrecognizedTotal : 0
LLDPStatsRXPortAgeoutsTotal     : 0

DGS-3000-26TC:admin#

```

47-14 config lldp_med fast_start repeat_count

Description

This command is used to configure the fast start repeat count. When an LLDP-MED Capabilities TLV is detected for an MSAP identifier not associated with an existing LLDP remote system MIB, the application layer shall start the fast start mechanism and set the 'medFastStart' timer to 'medFastStartRepeatCount' times 1.

Format

config lldp_med fast_start repeat_count <value 1-10>

Parameters

<value 1-10> - Enter a fast start repeat count value between 1 and 10. The default value is 4.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure a LLDP-MED fast start repeat count of 5:

```

DGS-3000-26TC:admin#config lldp_med fast_start repeat_count 5
Command: config lldp_med fast_start repeat_count 5

Success.

DGS-3000-26TC:admin#

```

47-15 config lldp_med log state

Description

This command is used to configure the log state of LLDP-MED events.

Format

config lldp_med log state [enable | disable]

Parameters

enable - Enables the log state for LLDP-MED events.

disable - Disables the log state for LLDP-MED events. The default is disabled.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable the log state of LLDP-MED events:

```
DGS-3000-26TC:admin#config lldp_med log state enable
```

```
Command: config lldp_med log state enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

47-16 config lldp_med notification topo_change ports

Description

This command is used to enable or disable each port for sending topology change notification to configured SNMP trap receiver(s) if an endpoint device is removed or moved to another port.

Format

config lldp_med notification topo_change ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter a range of ports to be configured.

all - Specify to set all ports in the system.

state - Specify to enable or disable the SNMP trap notification of topology change detected state.

enable - Enables the SNMP trap notification of topology change detected.

disable - Disables the SNMP trap notification of topology change detected. The default notification state is disabled.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable topology change notification on ports 1-2:

```
DGS-3000-26TC:admin#config lldp_med notification topo_change ports 1-2 state enable
```

```
Command: config lldp_med notification topo_change ports 1-2 state enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```


47-17 config lldp_med ports

Description

This command is used to enable or disable transmitting LLDP-MED TLVs. It effectively disables LLDP-MED on a per-port basis by disabling transmission of TLV capabilities. In this case, the remote table's objects in the LLDP-MED MIB corresponding to the respective port will not be populated.

Format

config lldp_med ports [<portlist> | all] med_transmit_capabilities [all | {capabilities | network_policy | power_pse | inventory}{1)] state [enable | disable]

Parameters

<portlist>	- Enter a range of ports to be configured.
all	- Specify to set all ports in the system.
med_transmit_capabilities	- Specify to send the LLDP-MED TLV capabilities.
all	- Specify to send capabilities, network policy, and inventory.
capabilities	- Specify that the LLDP agent should transmit LLDP-MED capabilities TLV. If a user wants to transmit LLDP-MED PDU, this TLV type should be enabled. Otherwise, this port cannot transmit LLDP-MED PDU.
network_policy	- Specify that the LLDP agent should transmit LLDP-MED network policy TLV.
power_pse	- Specify that the LLDP agent should transmit LLDP-MED extended Power via MDI TLV, if the local device is a PSE device.
inventory	- Specify that the LLDP agent should transmit "LLDP-MED inventory TLV."
state	- Specify to enable or disable the transmitting of LLDP-MED TLVs.
enable	- Enables the transmitting of LLDP-MED TLVs.
disable	- Disables the transmitting of LLDP-MED TLVs.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable transmitting all capabilities on all ports:

```
DGS-3000-26TC:admin#config lldp_med ports all med_transmit_capabilities all state enable
Command: config lldp_med ports all med_transmit_capabilities all state enable

Success.

DGS-3000-26TC:admin#
```

47-18 show lldp_med ports

Description

This command is used to display LLDP-MED per port configuration for advertisement options.

Format

show lldp_med ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.

If a port list is not specified, information for all ports will be displayed.

Restrictions

None.

Example

To display LLDP-MED configuration information for port 1:

```
DGS-3000-26TC:admin#show lldp_med ports 1
Command: show lldp_med ports 1

Port ID                : 1
-----
Topology Change Notification Status      :Enabled
LLDP-MED Capabilities TLV                :Enabled
LLDP-MED Network Policy TLV             :Enabled
LLDP-MED Extended Power Via MDI PSE TLV  :Enabled
LLDP-MED Inventory TLV                  :Enabled

DGS-3000-26TC:admin#
```

47-19 show lldp_med

Description

This command is used to display the Switch's general LLDP-MED configuration status.

Format

show lldp_med

Parameters

None.

Restrictions

None.

Example

To display the Switch's general LLDP-MED configuration status:

```
DGS-3000-26TC:admin#show lldp_med
Command: show lldp_med

LLDP-MED System Information:
  Device Class           : Network Connectivity Device
  Hardware Revision      : A2
  Firmware Revision      : 2.00.001
  Software Revision      : 2.00.004
  Serial Number          :
  Manufacturer Name      : D-Link
  Model Name             : DGS-3000-26TC Gigabit Ethernet S
  Asset ID               :

LLDP-MED Configuration:
  Fast Start Repeat Count : 4

LLDP-MED Log State:Disabled

DGS-3000-26TC:admin#
```

47-20 show lldp_med local_ports

Description

This command is used to display the per-port LLDP-MED information currently available for populating outbound LLDP-MED advertisements.

Format

show lldp_med local_ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.

If the port list is not specified, information for all the ports will be displayed.

Restrictions

None.

Example

To display LLDP-MED information currently available for populating outbound LLDP-MED advertisements for port 1:

```
DGS-3000-26TC:admin#show lldp_med local_ports 1
```

```
Command: show lldp_med local_ports 1
```

```
Port ID          : 1
```

```
-----  
LLDP-MED Capabilities Support:
```

```
  Capabilities          :Support  
  Network Policy       :Support  
  Location Identification :Not Support  
  Extended Power Via MDI PSE :Not Support  
  Extended Power Via MDI PD :Not Support  
  Inventory            :Support
```

```
Network Policy:
```

```
  None
```

```
Extended Power Via MDI:
```

```
  None
```

```
DGS-3000-26TC:admin#
```

47-21 show lldp_med remote_ports

Description

This command is used to display LLDP-MED information learned from neighbors.

Format

```
show lldp_med remote_ports {<portlist>}
```

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.

If the port list is not specified, information for all the ports will be displayed.

Restrictions

None.

Example

To display remote entry information:

```
DGS-3000-26TC:admin#show lldp_med remote_ports 1
```

```
Command: show lldp_med remote_ports 1
```

```
Port ID : 1
```

```
-----  
Remote Entities Count : 1
```

```
Entity 1
```

```
  Chassis ID Subtype          : MAC Address  
  Chassis ID                  : 00-01-02-03-04-00  
  Port ID Subtype             : Net Address  
  Port ID                     : 172.18.10.11
```

LLDP-MED capabilities:

LLDP-MED Device Class: Endpoint Device Class III

LLDP-MED Capabilities Support:

Capabilities : Support
 Network Policy : Support
 Location Identification : Support
 Extended Power Via MDI : Support
 Inventory : Support

LLDP-MED Capabilities Enabled:

Capabilities : Enabled
 Network Policy : Enabled
 Location Identification : Enabled
 Extended Power Via MDI : Enabled
 Inventory : Enabled

Network Policy:

Application Type : Voice

VLAN ID :
 Priority :
 DSCP :
 Unknown : True
 Tagged :

Application Type : Softphone Voice

VLAN ID : 200
 Priority : 7
 DSCP : 5
 Unknown : False
 Tagged : True

Location Identification:

Location Subtype: CoordinateBased
 Location Information :
 Location Subtype: CivicAddress
 Location Information :

Extended Power Via MDI

Power Device Type: PD Device

Power Priority : High
 Power Source : From PSE
 Power Request : 8 Watts

Inventory Management:

Hardware Revision :
 Firmware Revision :
 Software Revision :
 Serial Number :
 Manufacturer Name :
 Model Name :
 Asset ID :

DGS-3000-26TC:admin#

Chapter 48 Loop Back Detection (LBD)

Command List

```

config loopdetect {recover_timer [<value 0> | <sec 60-1000000>] | interval <sec 1-32767> | mode [port-based |
vlan-based]}(1)
config loopdetect ports [<portlist> | all] state [enable | disable]
enable loopdetect
disable loopdetect
show loopdetect
show loopdetect ports {<portlist>}
config loopdetect trap [none | loop_detected | loop_cleared | both]
config loopdetect log state [enable | disable]

```

48-1 config loopdetect

Description

This command is used to setup the loop-back detection function (LBD) for the entire Switch.

Format

```

config loopdetect {recover_timer [<value 0> | <sec 60-1000000>] | interval <sec 1-32767> | mode [port-
based | vlan-based]}(1)

```

Parameters

recover_timer - The time interval (in seconds) used by the Auto-Recovery mechanism to decide how long to check before determining that the loop status has gone. The valid range is from 60 to 1000000. 0 is a special value that Specify that the auto-recovery mechanism should be disabled. When the auto-recovery mechanism is disabled, a user would need to manually recover a disabled port. The default value for the recover timer is 60 seconds.

<value 0> - Enter 0 to specify that the auto-recovery mechanism should be disabled. When the auto-recovery mechanism is disabled, a user would need to manually recover a disabled port.

<sec 60-1000000> - Enter the recovery timer value here. This value must be between 60 and 1000000 seconds.

interval - The time interval (in seconds) that the device will transmit all the CTP (Configuration Test Protocol) packets to detect a loop-back event. The default setting is 10 seconds. The valid range is from 1 to 32767 seconds.

<sec - 1-32767> - Enter the time interval value here. This value must be between 1 and 32767 seconds.

mode - Specify the loop-detection operation mode. In port-based mode, the port will be shut down (disabled) when loop has been detected In VLAN-based mode, the port cannot process the packets of the VLAN that has detected the loop.

port-based - Specify that the loop-detection operation mode will be set to port-based mode.

vlan-based - Specify that the loop-detection operation mode will be set to vlan-based mode.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the auto-recover time to 0, which disables the auto-recovery mechanism, the interval to 20 seconds and specify VLAN-based mode:

```
DGS-3000-26TC:admin#config loopdetect recover_timer 0 interval 20 mode vlan-based
Command: config loopdetect recover_timer 0 interval 20 mode vlan-based

Success.

DGS-3000-26TC:admin#
```

48-2 config loopdetect ports

Description

This command is used to setup the loop-back detection function for the interfaces on the Switch.

Format

config loopdetect ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter a list of ports to be configured.

all - Specify all ports to be configured.

state - Specify whether the LBD function should be enabled or disabled on the ports specified in the port list. The default state is disabled.

enable - Specify to enable the LBD function.

disable - Specify to disable the LBD function.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the LBD function on ports 1-5:

```
DGS-3000-26TC:admin#config loopdetect ports 1-5 state enable
Command: config loopdetect ports 1-5 state enable

Success.

DGS-3000-26TC:admin#
```

48-3 enable loopdetect

Description

This command is used to enable the LBD function globally on the Switch. The default state is disabled.

Format

enable loopdetect

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the LBD function globally:

```
DGS-3000-26TC:admin#enable loopdetect
Command: enable loopdetect

Success.

DGS-3000-26TC:admin#
```

48-4 disable loopdetect

Description

This command is used to disable the LBD function globally on the Switch.

Format

disable loopdetect

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the LBD function globally:

```
DGS-3000-26TC:admin#disable loopdetect
Command: disable loopdetect

Success.

DGS-3000-26TC:admin#
```

48-5 show loopdetect

Description

This command is used to display the LBD global configuration.

Format

show loopdetect

Parameters

None.

Restrictions

None.

Example

To show the LBD global settings:

```
DGS-3000-26TC:admin#show loopdetect
Command: show loopdetect

LBD Global Settings
-----
Status           : Disabled
Mode             : Port-based
Interval         : 10 sec
Recover Time     : 60 sec
Trap State       : None
Log State        : Enabled
Function Version : 4.04

DGS-3000-26TC:admin#
```

48-6 show loopdetect ports

Description

This command is used to display the LBD per-port configuration.

Format

show loopdetect ports {<portlist>}

Parameters

<portlist> - (Optional) Enter the list of port to be displayed.
If no port is specified, the configuration for all ports will be displayed.

Restrictions

None.

Example

To show the LBD settings on ports 1-9:

```
DGS-3000-26TC:admin#show loopdetect ports 1-9
```

```
Command: show loopdetect ports 1-9
```

Port	Loopdetect State	Loop Status
1	Enabled	Normal
2	Enabled	Normal
3	Enabled	Normal
4	Enabled	Normal
5	Enabled	Loop!
6	Enabled	Normal
7	Enabled	Loop!
8	Enabled	Normal
9	Enabled	Normal

```
DGS-3000-26TC:admin#
```

48-7 config loopdetect trap

Description

This command is used to configure the trap modes for LBD.

Format

```
config loopdetect trap [none | loop_detected | loop_cleared | both]
```

Parameters

none - There is no trap in the LBD function.

loop_detected - Trap will only be sent when the loop condition is detected.

loop_cleared - Trap will only be sent when the loop condition is cleared.

both - Trap will either be sent when the loop condition is detected or cleared.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To specify that traps will be sent when the loop condition is detected or cleared:

```
DGS-3000-26TC:admin#config loopdetect trap both
```

```
Command: config loopdetect trap both
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

48-8 config loopdetect log state

Description

This command is used to configure the log state for LBD. The default value is enabled.

Format

`config loopdetect log state [enable | disable]`

Parameters

enable - Enables the LBD log feature.

disable - Disables the LBD log feature. All LBD-related logs will not be recorded.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the log state for LBD:

```
DGS-3000-26TC:admin#config loopdetect log state enable
Command: config loopdetect log state enable

Success.

DGS-3000-26TC:admin#
```

Chapter 49 MAC Notification Command List

enable mac_notification

disable mac_notification

config mac_notification {interval <sec 1-2147483647> | historysize <int 1-500>}

config mac_notification ports [<portlist> | all] [enable | disable]

show mac_notification

show mac_notification ports {<portlist>}

49-1 enable mac_notification

Description

This command is used to enable global MAC address table notification on the Switch.

Format

enable mac_notification

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable mac_notification function:

```
DGS-3000-26TC:admin#enable mac_notification
Command: enable mac_notification

Success.

DGS-3000-26TC:admin#
```

49-2 disable mac_notification

Description

This command is used to disable global MAC address table notification on the Switch.

Format

disable mac_notification

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable mac_notification function:

```
DGS-3000-26TC:admin#disable mac_notification
Command: disable mac_notification

Success.

DGS-3000-26TC:admin#
```

49-3 config mac_notification

Description

This command is used to configure the Switch's MAC address table notification global settings.

Format

config mac_notification {interval <sec 1-2147483647> | historysize <int 1-500>}

Parameters

interval - (Optional) Specify the time in seconds between notifications.
<sec 1-2147483647> - Enter the interval time here. This value must be between 1 and 2147483647 seconds.

historysize - (Optional) Specify the maximum number of entries listed in the history log used for notification. Up to 500 entries can be specified.
<int 1-500> - Enter the history log size here. This value must be between 1 and 500.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To config the Switch's Mac address table notification global settings:

```
DGS-3000-26TC:admin#config mac_notification interval 1 historysize 500
Command: config mac_notification interval 1 historysize 500

Success.

DGS-3000-26TC:admin#
```

49-4 config mac_notification ports

Description

This command is used to configure the port's MAC address table notification status settings.

Format

config mac_notification ports [<portlist> | all] [enable | disable]

Parameters

<portlist> - Enter a list of ports used for the configuration here.

all - Specify that all the ports will be used for this configuration.

enable - Enables the port's MAC address table notification.

disable - Disables the port's MAC address table notification.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable 7th port's mac address table notification:

```
DGS-3000-26TC:admin#config mac_notification ports 7 enable
Command: config mac_notification ports 7 enable

Success.

DGS-3000-26TC:admin#
```

49-5 show mac_notification

Description

This command is used to display the Switch's Mac address table notification global settings.

Format

show mac_notification

Parameters

None.

Restrictions

None.

Example

To show the Switch's Mac address table notification global settings:

```
DGS-3000-26TC:admin#show mac_notification
Command: show mac_notification

Global MAC Notification Settings

State          : Disabled
Interval       : 1
History Size   : 1

DGS-3000-26TC:admin#
```

49-6 show mac_notification ports

Description

This command is used to display the port's Mac address table notification status settings.

Format

show mac_notification ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a list of ports used for the configuration here.

Restrictions

None.

Example

To display all port's Mac address table notification status settings:

```
DGS-3000-26TC:admin#show mac_notification ports
Command: show mac_notification ports

Port      MAC Address Table Notification State
-----
1          Disabled
2          Disabled
3          Disabled
4          Disabled
5          Disabled
6          Disabled
7          Disabled
8          Disabled
9          Disabled
10         Disabled
11         Disabled
12         Disabled
13         Disabled
14         Disabled
15         Disabled
16         Disabled
17         Disabled
18         Disabled
19         Disabled
20         Disabled

CTRL+C  ESC  c  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

Chapter 50 MAC-based Access Control

Command List

enable mac_based_access_control
disable mac_based_access_control
config mac_based_access_control password <passwd 16>
config mac_based_access_control password_type [manual_string client_mac_address]
config mac_based_access_control method [local radius]
config mac_based_access_control guest_vlan ports <portlist>
config mac_based_access_control ports [<portlist> all] {state [enable disable] mode [port_based host_based] aging_time [infinite <min 1-1440>] block_time <sec 0-300> max_users [<value 1-1000> no_limit]}(1)
create mac_based_access_control [guest_vlan <vlan_name 32> guest_vlanid <vlanid 1-4094>]
delete mac_based_access_control [guest_vlan <vlan_name 32> guest_vlanid <vlanid 1-4094>]
clear mac_based_access_control auth_state [ports [all <portlist>] mac_addr <macaddr>]
create mac_based_access_control_local mac <macaddr> {[vlan <vlan_name 32> vlanid <vlanid 1-4094>]}
config mac_based_access_control_local mac <macaddr> [vlan <vlan_name 32> vlanid <vlanid 1-4094> clear_vlan]
delete mac_based_access_control_local [mac <macaddr> vlan <vlan_name 32> vlanid <vlanid 1-4094>]
config mac_based_access_control authorization attributes {radius [enable disable] local [enable disable]}(1)
show mac_based_access_control {ports {<portlist>}}
show mac_based_access_control_local {[mac <macaddr> vlan <vlan_name 32> vlanid <vlanid 1-4094>]}
show mac_based_access_control auth_state ports {<portlist>}
config mac_based_access_control max_users [<value 1-1000> no_limit]
config mac_based_access_control trap state [enable disable]
config mac_based_access_control log state [enable disable]

50-1 enable mac_based_access_control

Description

This command is used to enable MAC-based Access Control.

Format

```
enable mac_based_access_control
```

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the MAC-based Access Control global state:


```
DGS-3000-26TC:admin#enable mac_based_access_control
Command: enable mac_based_access_control

Success.

DGS-3000-26TC:admin#
```

50-2 disable mac_based_access_control

Description

This command is used to disable MAC-based Access Control.

Format

disable mac_based_access_control

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the MAC-based Access Control global state:

```
DGS-3000-26TC:admin#disable mac_based_access_control
Command: disable mac_based_access_control

Success.

DGS-3000-26TC:admin#
```

50-3 config mac_based_access_control password

Description

This command is used to configure the RADIUS authentication password for MAC-based Access Control.

Format

config mac_based_access_control password <passwd 16>

Parameters

<passwd 16> - Enter the password used here. In RADIUS mode, the Switch will communicate with the RADIUS server using this password. The maximum length of the key is 16. The default password is "default".

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the MAC-based Access Control password:

```
DGS-3000-26TC:admin#config mac_based_access_control password switch
Command: config mac_based_access_control password switch

Success.

DGS-3000-26TC:admin#
```

50-4 config mac_based_access_control password_type

Description

This command is used to configure the password type used for authentication via the RADIUS server.

Format

config mac_based_access_control password_type [manual_string | client_mac_address]

Parameters

manual_string - Use the same password for all clients to communicate with the RADIUS server.

client_mac_address - Use the client's MAC address as the password to communicate with the RADIUS server.

Restrictions

Only Administrator, Operator and Power-User level users can issue this command.

Example

To configure the MAC-based Access Control using client's MAC address as authentication password:

```
DGS-3000-26TC:admin#config mac_based_access_control password_type client_mac_address
Command: config mac_based_access_control password_type client_mac_address

Success.

DGS-3000-26TC:admin#
```

50-5 config mac_based_access_control method

Description

This command is used to configure the MAC-based Access Control authentication method.

Format

config mac_based_access_control method [local | radius]

Parameters

local - Specify to authenticate via the local database.

radius - Specify to authenticate via a RADIUS server.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the MAC-based Access Control authentication method as local:

```
DGS-3000-26TC:admin#config mac_based_access_control method local
Command: config mac_based_access_control method local

Success.

DGS-3000-26TC:admin#
```

50-6 config mac_based_access_control guest_vlan ports

Description

This command is used to assign a specified port list to the MAC-based Access Control guest VLAN. Ports that are not contained in port list will be removed from the MAC-based Access Control guest VLAN.

For detailed information on the operation of MAC-based Access Control guest VLANs, please see the description for the “config mac_based_access_control ports” command.

Format

config mac_based_access_control guest_vlan ports <portlist>

Parameters

<portlist> - Enter the list of port as MAC-based Access Control guest VLAN membership.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the MAC-based Access Control guest VLAN membership:

```
DGS-3000-26TC:admin#config mac_based_access_control guest_vlan ports 1-8
Command: config mac_based_access_control guest_vlan ports 1-8

Success.

DGS-3000-26TC:admin#
```

50-7 config mac_based_access_control ports

Description

This command is used to configure MAC-based Access Control port's setting.

When the MAC-based Access Control function is enabled for a port and the port is not a MAC-based Access Control guest VLAN member, the user who is attached to this port will not be forwarded unless the user passes the authentication.

- A user that does not pass the authentication will not be serviced by the Switch.

- If the user passes the authentication, the user will be able to forward traffic operated under the assigned VLAN.

When the MAC-based Access Control function is enabled for a port, and the port is a MAC-based Access Control guest VLAN member, the port(s) will be removed from the original VLAN(s) member ports, and added to MAC-based Access Control guest VLAN member ports.

- Before the authentication process starts, the user is able to forward traffic under the guest VLAN.
- After the authentication process, the user will be able to access the assigned VLAN.

If the port authorize mode is port based mode, when the port has been moved to the authorized VLAN, the subsequent users will not be authenticated again. They will operate in the current authorized VLAN.

If the port authorize mode is host based mode, then each user will be authorized individually and be capable of getting its own assigned VLAN.

If port's block time is set to "infinite", it means that a failed authentication client will never be blocked. Block time will be set to "0".

Format

```
config mac_based_access_control ports [<portlist> | all] {state [enable | disable] | mode [port_based | host_based] | aging_time [infinite | <min 1-1440>] | block_time <sec 0-300> | max_users [<value 1-1000> | no_limit]}(1)
```

Parameters

<portlist>	- Enter the list of port used for this configuration here.
all	- Specify all existed ports of switch for configuring the MAC-based Access Control function parameters.
state	- Specify whether the port's MAC-based Access Control function is enabled or disabled.
enable	- Specify that the port's MAC-based Access Control states will be enabled.
disable	- Specify that the port's MAC-based Access Control states will be disabled.
mode	- Specify the MAC-based access control port mode used.
port_based	- Specify that the MAC-based access control port mode will be set to port-based.
host_based	- Specify that the MAC-based access control port mode will be set to host-based.
aging_time	- A time period during which an authenticated host will be kept in an authenticated state. When the aging time has timed-out, the host will be moved back to unauthenticated state.
infinite	- Specify that the authorized clients will not be aged out automatically.
<min 1-1440>	- Enter the aging time value here. This value must be between 1 and 1440 minutes.
block_time	- If a host fails to pass the authentication, the next authentication will not start within the block time unless the user clears the entry state manually. If the block time is set to 0, it means do not block the client that failed authentication.
<sec 0-300>	-Enter the block time value here. This value must be between 0 and 300 seconds.
max_users	- Specify maximum number of users per port.
<value 1-1000>	- Enter the maximum number of users per port here. This value must be between 1 and 1000.
no_limit	- Specify to not limit the maximum number of users on the port. The default value is 128.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure an unlimited number of maximum users for MAC-based Access Control on ports 1 to 8:

```
DGS-3000-26TC:admin#config mac_based_access_control ports 1-8 max_users no_limit
Command: config mac_based_access_control ports 1-8 max_users no_limit

Success.

DGS-3000-26TC:admin#
```

To configure the MAC-based Access Control timer parameters to have an infinite aging time and a block time of 120 seconds on ports 1 to 8:

```
DGS-3000-26TC:admin#config mac_based_access_control ports 1-8 aging_time infinite block_time
120
Command: config mac_based_access_control ports 1-8 aging_time infinite block_time 120

Success.

DGS-3000-26TC:admin#
```

50-8 create mac_based_access_control

Description

This command is used to assign a static 802.1Q VLAN as a MAC-based Access Control guest VLAN.

Format

create mac_based_access_control [guest_vlan <vlan_name 32> | guest_vlanid <vlanid 1-4094>]

Parameters

guest_vlan - Specify MAC-based Access Control guest VLAN by name, it must be a static 1Q VLAN.
<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

guest_vlanid - Specify MAC-based Access Control guest VLAN by VID, it must be a static 1Q VLAN.
<vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a MAC-based Access Control guest VLAN:

```
DGS-3000-26TC:admin#create mac_based_access_control guest_vlan VLAN8
Command: create mac_based_access_control guest_vlan VLAN8

Success.

DGS-3000-26TC:admin#
```

50-9 delete mac_based_access_control

Description

This command is used to remove a MAC-based Access Control guest VLAN.

Format

delete mac_based_access_control [guest_vlan <vlan_name 32> | guest_vlanid <vlanid 1-4094>]

Parameters

guest_vlan - Specify the name of the MAC-based Access Control's guest VLAN.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

guest_vlanid - Specify the VID of the MAC-based Access Control's guest VLAN.

<vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the MAC-based Access Control guest VLAN called default:

```
DGS-3000-26TC:admin#delete mac_based_access_control guest_vlan default
Command: delete mac_based_access_control guest_vlan default

Success.

DGS-3000-26TC:admin#
```

50-10 clear mac_based_access_control auth_state

Description

This command is used to clear the authentication state of a user (or port). The port (or the user) will return to an un-authenticated state. All the timers associated with the port (or the user) will be reset.

Format

clear mac_based_access_control auth_state [ports [all | <portlist>] | mac_addr <macaddr>]

Parameters

ports - Specify the port range to delete MAC addresses on them.

all - Specify to delete the MAC addresses of all MAC-based Access Control enabled ports.

<portlist> - Enter the list of port used for this configuration here.

mac_addr - Specify to delete a specified host with this MAC address.

<macaddr> - Enter the MAC address used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear MAC-based Access Control clients' authentication information for all ports:

```
DGS-3000-26TC:admin#clear mac_based_access_control auth_state ports all
Command: clear mac_based_access_control auth_state ports all

Success.

DGS-3000-26TC:admin#
```

To delete the MAC-based Access Control authentication information for the host that has a MAC address of 00-00-00-47-04-65:

```
DGS-3000-26TC:admin#clear mac_based_access_control auth_state mac_addr 00-00-00-47-04-65
Command: clear mac_based_access_control auth_state mac_addr 00-00-00-47-04-65

Success.

DGS-3000-26TC:admin#
```

50-11 create mac_based_access_control_local mac

Description

This command is used to create a MAC-based Access Control local database entry that will be used for authentication. This command can also specify the VLAN that an authorized host will be assigned to.

Format

create mac_based_access_control_local mac <macaddr> {[vlan <vlan_name 32> | vlanid <vlanid 1-4094>]}

Parameters

<macaddr> - Enter the MAC address that can pass local authentication here.

vlan - (Optional) Specify the target VLAN by using the VLAN name. When this host is authorized, it will be assigned to this VLAN.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the target VLAN by using the VID. When this host is authorized, it will be assigned to this VLAN if the target VLAN exists.

<vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.

If no vlanid or vlan parameter is specified, not specify the target VLAN for this host.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create one MAC-based Access Control local database entry for MAC address 00-00-00-00-00-01 and specify that the host will be assigned to the "default" VLAN after the host has been authorized:

```
DGS-3000-26TC:admin#create mac_based_access_control_local mac 00-00-00-00-00-01 vlan default
Command: create mac_based_access_control_local mac 00-00-00-00-00-01 vlan default

Success.

DGS-3000-26TC:admin#
```

50-12 config mac_based_access_control_local mac

Description

This command is used to configure a MAC-based Access Control local database entry.

Format

config mac_based_access_control_local mac <macaddr> [vlan <vlan_name 32> | vlanid <vlanid 1-4094> | clear_vlan]

Parameters

<macaddr> - Enter the MAC address of the authenticated host.
vlan - Specify the target VLAN by VLAN name. When this host is authorized, the host will be assigned to this VLAN. <vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.
vlanid - Specify the target VLAN by VID. When this host is authorized, the host will be assigned to this VLAN if the target VLAN exists. <vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.
clear_vlan - Not specify the target VLAN. When this host is authorized, will not assign target VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the target VLAN "default" for the MAC-based Access Control local database entry 00-00-00-00-00-01:

```
DGS-3000-26TC:admin#config mac_based_access_control_local mac 00-00-00-00-00-01 vlan default
Command: config mac_based_access_control_local mac 00-00-00-00-00-01 vlan default

Success.

DGS-3000-26TC:admin#
```

50-13 delete mac_based_access_control_local

Description

This command is used to delete a MAC-based Access Control local database entry.

Format

delete mac_based_access_control_local [mac <macaddr> | vlan <vlan_name 32> | vlanid <vlanid 1-4094>]

Parameters

mac - Deletes local database entry by specific MAC address. <macaddr> - Enter the MAC address used here.
vlan - Deletes local database entries by specific target VLAN name. <vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.
vlanid - Deletes local database entries by specific target VLAN ID. <vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the MAC-based Access Control local database entry for MAC address 00-00-00-00-00-01:

```
DGS-3000-26TC:admin#delete mac_based_access_control_local mac 00-00-00-00-00-01
Command: delete mac_based_access_control_local mac 00-00-00-00-00-01

Success.

DGS-3000-26TC:admin#
```

To delete the MAC-based Access Control local database entry for the VLAN name VLAN3:

```
DGS-3000-26TC:admin#delete mac_based_access_control_local vlan VLAN3
Command: delete mac_based_access_control_local vlan VLAN3

Success.

DGS-3000-26TC:admin#
```

50-14 config mac_based_access_control authorization attributes

Description

This command is used to enable or disable the acceptance of an authorized configuration.

When authorization is enabled for MAC-based Access Controls with RADIUS authentication, the authorized attributes (for example VLAN, 802.1p default priority, and ACL) assigned by the RADIUS server will be accepted if the global authorization status is enabled.

When authorization is enabled for MAC-based Access Controls with local authentication, the authorized attributes assigned by the local database will be accepted.

Format

config mac_based_access_control authorization attributes {radius [enable | disable] | local [enable | disable]}(1)

Parameters

radius - If specified to enable, the authorized attributes (for example VLAN, 802.1p default priority, and ACL) assigned by the RADIUS server will be accepted if the global authorization status is enabled. The default state is enabled.

enable - Specify that the RADIUS attributes will be enabled.

disable - Specify that the RADIUS attributes will be disabled.

local - If specified to enable, the authorized attributes assigned by the local database will be accepted if the global authorization status is enabled. The default state is enabled.

enable - Specify that the local attributes will be enabled.

disable - Specify that the local attributes will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

The following example will disable the configuration authorized from the local database:

```
DGS-3000-26TC:admin#config mac_based_access_control authorization attributes local disable
Command: config mac_based_access_control authorization attributes local disable

Success.

DGS-3000-26TC:admin#
```

50-15 show mac_based_access_control

Description

This command is used to display the MAC-based Access Control setting.

Format

show mac_based_access_control {ports {<portlist>}}

Parameters

ports - (Optional) Displays the MAC-based Access Control settings for a specific port or range of ports.
<portlist> - (Optional) Enter the list of port used for this configuration here.

If no parameter is specified, the global MAC-based Access Control settings will be displayed.

Restrictions

None.

Example

To show the MAC-based Access Control port configuration for ports 1 to 4:

```
DGS-3000-26TC:admin#show mac_based_access_control ports 1-4
Command: show mac_based_access_control ports 1-4

Port      State      Aging Time      Block Time      Auth Mode      Max User
-----  -
         (min)      (sec)
-----  -
1         Disabled   1440            300             Host-based     128
2         Disabled   1440            300             Host-based     128
3         Disabled   1440            300             Host-based     128
4         Disabled   1440            300             Host-based     128

DGS-3000-26TC:admin#
```

50-16 show mac_based_access_control_local

Description

This command is used to display the MAC-based Access Control local database entry(s).

Format

show mac_based_access_control_local {[mac <macaddr> | vlan <vlan_name 32> | vlanid <vlanid 1-4094>]}

Parameters

- mac** - (Optional) Displays MAC-based Access Control local database entries for a specific MAC address.
<macaddr> - Enter the MAC address used here.
 - vlan** - (Optional) Displays MAC-based Access Control local database entries for a specific target VLAN name.
<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.
 - vlanid** - (Optional) Displays MAC-based Access Control local database entries for a specific target VLAN ID.
<vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.
- If the parameter is no specified, displays all MAC-based Access Control local database entries.

Restrictions

None.

Example

To show MAC-based Access Control local database for the VLAN called 'default':

```
DGS-3000-26TC:admin#show mac_based_access_control_local vlan default
Command: show mac_based_access_control_local vlan default

MAC Address          VID
-----
00-00-00-00-00-01   1
00-00-00-00-00-04   1

Total Entries:2

DGS-3000-26TC:admin#
```

50-17 **show mac_based_access_control auth_state ports****Description**

This command is used to display the MAC-based Access Control authentication status.

Format

show mac_based_access_control auth_state ports {<portlist>}

Parameters

- <portlist>** - (Optional) Enter a range of ports to be displayed.
- If the portlist is not specified, all of MAC-based Access Control ports authentication status will be displayed.

Restrictions

None.

Example

To display the MAC-based Access Control authentication status on port 1-4

```

DGS-3000-26TC:admin#show mac_based_access_control auth_state ports 1-4
Command: show mac_based_access_control auth_state ports 1-4

(P): Port-based

Port MAC Address          State          VID  Priority Aging Time/
                               Block Time
-----
Total Authenticating Hosts : 0
Total Authenticated Hosts  : 0
Total Blocked Hosts       : 0

DGS-3000-26TC:admin#

```

50-18 config mac_based_access_control max_users

Description

This command is used to configure the maximum number of authorized clients.

Format

config mac_based_access_control max_users [<value 1-1000> | no_limit]

Parameters

max_users - Specify to set the maximum number of authorized clients on the whole device.
<value 1-1000> - Enter the maximum users here. This value must be between 1 and 1000.
no_limit - Specify to not limit the maximum number of users on the system. By default, there is no limit on the number of users.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the maximum number of users of the MAC-based Access Control system supports to 128:

```

DGS-3000-26TC:admin#config mac_based_access_control max_users 128
Command: config mac_based_access_control max_users 128

Success.

DGS-3000-26TC:admin#

```

50-19 config mac_based_access_control trap state

Description

This command is used to enable or disable sending of MAC-based Access Control traps.

Format

config mac_based_access_control trap state [enable | disable]

Parameters

enable - Enables trap for MAC-based Access Control. The trap of MAC-based Access Control will be sent out.
disable - Disables trap for MAC-based Access Control.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable trap state of MAC-based Access Control:

```
DGS-3000-26TC:admin#config mac_based_access_control trap state enable
Command: config mac_based_access_control trap state enable

Success.

DGS-3000-26TC:admin#
```

50-20 config mac_based_access_control log state

Description

This command is used to enable or disable generating of MAC-based Access Control logs.

Format

config mac_based_access_control log state [enable | disable]

Parameters

enable - Enables log for MAC-based Access Control. The log of MAC-based Access Control will be generated.
disable - Disables log for MAC-based Access Control.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable log state of MAC-based Access Control:

```
DGS-3000-26TC:admin#config mac_based_access_control log state disable
Command: config mac_based_access_control log state disable

Success.

DGS-3000-26TC:admin#
```

Chapter 51 MAC-based VLAN Command List

```
create mac_based_vlan mac_address <macaddr> [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]
```

```
delete mac_based_vlan {mac_address <macaddr> [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]}
```

```
show mac_based_vlan {mac_address <macaddr> | [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]}
```

51-1 create mac_based_vlan mac_address

Description

This command is used to create a static MAC-based VLAN entry.

This command only needs to be supported by the model which supports MAC-based VLAN.

There is a global limitation of the maximum entries supported for the static MAC-based entry.

Format

```
create mac_based_vlan mac_address <macaddr> [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]
```

Parameters

mac_address - Specify the MAC address used.

<macaddr> - Enter the MAC address here.

vlan - The VLAN to be associated with the MAC address.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - Specify the VLAN by VLAN ID.

<vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a static MAC-based VLAN entry:

```
DGS-3000-26TC:admin#create mac_based_vlan mac_address 00-11-22-33-44-55 vlanid 100
```

```
Command: create mac_based_vlan mac_address 00-11-22-33-44-55 vlanid 100
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

51-2 delete mac_based_vlan

Description

This command is used to delete the static MAC-based VLAN entry.

Format

```
delete mac_based_vlan {mac_address <macaddr> [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]}
```

Parameters

mac_address - (Optional) Specify the MAC address used.

<macaddr> - Enter the MAC address used here.

vlan - (Optional) The VLAN to be associated with the MAC address.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the VLAN by VLAN ID.

<vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.

If no parameter is specified, ALL static configured entries will be removed.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a static MAC-based VLAN entry:

```
DGS-3000-26TC:admin#delete mac_based_vlan mac_address 00-11-22-33-44-55 vlanid 100
Command: delete mac_based_vlan mac_address 00-11-22-33-44-55 vlanid 100

Success.

DGS-3000-26TC:admin#
```

51-3 show mac_based_vlan

Description

This command is used to display the static or dynamic MAC-Based VLAN entry. If the MAC address and VLAN is not specified, all static and dynamic entries will be displayed.

Format

show mac_based_vlan {mac_address <macaddr> | [vlan <vlan_name 32> | vlanid <vlanid 1-4094>]}

Parameters

mac_address - (Optional) Specify the entry that you would like to display.

<macaddr> - Enter the MAC address used here.

vlan - (Optional) Specify the VLAN that you would like to display.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the VLAN by VLAN ID.

<vlanid 1-4094> - Enter the VLAN ID here. This value must be between 1 and 4094.

Restrictions

None.

Example

In the following example, MAC address "00-80-c2-33-c3-45" is assigned to VLAN 300 by manual config. It is assigned to VLAN 400 by Voice VLAN. Since Voice VLAN has higher priority than manual configuration, the manual configured entry will become inactive. To display the MAC-based VLAN entry:

```
DGS-3000-26TC:admin#show mac_based_vlan
```

MAC Address	VLAN ID	Status	Type
00-80-e0-14-a7-57	200	Active	Static
00-80-c2-33-c3-45	300	Inactive	Static
00-80-c2-33-c3-45	400	Active	Voice VLAN

```
Total Entries : 3
```

```
DGS-3000-26TC:admin#
```


Chapter 52 Mirror Command List

```
config mirror port <port> {[add | delete] source ports <portlist> [rx | tx {forwarding} | both]}
```

```
enable mirror
```

```
disable mirror
```

```
show mirror
```

52-1 config mirror port

Description

This command is used to configure a mirror port – source port pair on the Switch. Traffic from any source port to a target port can be mirrored for real-time analysis. A logic analyzer or an RMON probe then can be attached to study the traffic crossing the source port in a completely unobtrusive manner. If the target port is operating at a lower speed, the source port will be forced to drop its operating speed to match that of the target port.

Format

```
config mirror port <port> {[add | delete] source ports <portlist> [rx | tx {forwarding} | both]}
```

Parameters

<port> - Enter the port number that will receive the packets duplicated at the mirror port.

add - (Optional) The mirror entry to be added.

delete - (Optional) The mirror entry to be deleted.

source ports - (Optional) The port that will be mirrored. All packets entering and leaving the source port can be duplicated in the mirror port.

<portlist> - Enter the list of port to be configured here.

rx - (Optional) Specify to allow the mirroring packets received (flowing into) by the port or ports in the port list.

tx - (Optional) Specify to allow the mirroring packets sent (flowing out of) by the port or ports in the port list.

forwarding - (Optional) Specify to add the port to hardware egress mirroring port bitmap only when the port states of all the STP are forwarding. The default value of TX is without forwarding.

both - (Optional) Specify to mirror all the packets received or sent by the port or ports in the port list.

Restrictions

Only Administrators and Operators can issue this command.

Example

To add the mirroring ports:

```
DGS-3000-26TC:admin#config mirror port 3 add source ports 7-12 both
```

```
Command: config mirror port 3 add source ports 7-12 both
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

52-2 enable mirror

Description

This command is used to enable mirror function without having to modify the mirror session configuration.

Format

enable mirror

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable mirroring function:

```
DGS-3000-26TC:admin#enable mirror
Command: enable mirror

Success.

DGS-3000-26TC:admin#
```

52-3 disable mirror

Description

This command is used to disable mirror function without having to modify the mirror session configuration.

Format

disable mirror

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable mirroring function:

```
DGS-3000-26TC:admin#disable mirror
Command: disable mirror

Success.

DGS-3000-26TC:admin#
```

Restrictions

None.

52-4 show mirror

Description

This command is used to display the current mirror function state and mirror session configuration on the Switch.

Format

show mirror

Parameters

None.

Example

To display mirroring configuration:

```
DGS-3000-26TC:admin#show mirror
Command: show mirror

Current Settings
Mirror Status: Enabled
Target Port   : 3
Mirrored Port
              RX: 7-12
              TX: 7-12
              TX Forwarding:

DGS-3000-26TC:admin#
```

Chapter 53 MLD Snooping Command List

The Multicast Listener Discovery (MLD) is used by IPv6 routers to discover multicast listeners on a directly attached link, much as IGMP is used in IPv4. The protocol is embedded in ICMPv6 instead of using a separate protocol. MLDv1 is similar to IGMPv2 and MLDv2 similar to IGMPv3.

config mld_snooping [vlan_name <vlan_name 32> vlanid <vlanid_list> all] {state [enable disable] fast_done [enable disable] report_suppression [enable disable] proxy_reporting {state [enable disable] source_ip <ipv6addr>}(1)}(1)
config mld_snooping querier [vlan_name <vlan_name 32> vlanid <vlanid_list> all] {query_interval <sec 1-65535> max_response_time <sec 1-25> robustness_variable <value 1-7> last_listener_query_interval <sec 1-25> state [enable disable] version <value 1-2>}(1)
config mld_snooping mrouter_ports [vlan <vlan_name 32> vlanid <vlanid_list>] [add delete] <portlist>
config mld_snooping mrouter_ports forbidden [vlan <vlan_name 32> vlanid <vlanid_list>] [add delete] <portlist>
enable mld_snooping
disable mld_snooping
show mld_snooping {[vlan <vlan_name 32> vlanid <vlanid_list>]}
show mld_snooping group {[vlan <vlan_name 32> vlanid <vlanid_list> ports <portlist>} {<ipv6addr>} {data_driven}
show mld_snooping forwarding {[vlan <vlan_name 32> vlanid <vlanid_list>]}
show mld_snooping mrouter_ports [vlan <vlan_name 32> vlanid <vlanid_list> all] {[static dynamic forbidden]}
create mld_snooping static_group [vlan <vlan_name 32> vlanid <vlanid_list>] <ipv6addr>
delete mld_snooping static_group [vlan <vlan_name 32> vlanid <vlanid_list>] <ipv6addr>
config mld_snooping static_group [vlan <vlan_name 32> vlanid <vlanid_list>] <ipv6addr> [add delete] <portlist>
show mld_snooping static_group {[vlan <vlan_name 32> vlanid <vlanid_list>] <ipv6addr>}
config mld_snooping data_driven_learning [all vlan_name <vlan_name> vlanid <vlanid_list>] {state [enable disable] aged_out [enable disable] expiry_time <sec 1-65535>}(1)
config mld_snooping data_driven_learning max_learned_entry <value 1-1024>
clear mld_snooping data_driven_group [all [vlan_name <vlan_name> vlanid <vlanid_list>] [<ipv6addr> all]]
show mld_snooping statistic counter [vlan <vlan_name> vlanid <vlanid_list> ports <portlist>]
clear mld_snooping statistics counter
config mld_snooping rate_limit [ports <portlist> vlanid <vlanid_list>] [<value 1-1000> no_limit]
show mld_snooping rate_limit [ports <portlist> vlanid <vlanid_list>]
show mld_snooping host {[vlan <vlan_name 32> vlanid <vlanid_list> ports <portlist> group <ipv6addr>]}

53-1 config mld_snooping

Description

This command is used to configure MLD snooping on the Switch.

Format

```
config mld_snooping [vlan_name <vlan_name 32> | vlanid <vlanid_list> | all ] {state [enable | disable] |
fast_done [enable | disable] | report_suppression [enable | disable] | proxy_reporting {state [enable |
disable] | source_ip <ipv6addr>}(1)}(1)
```

Parameters

vlan_name - Specify the name of the VLAN for which MLD snooping is to be configured. <vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.
vlanid - Specify the ID of the VLAN for which MLD snooping is to be configured. <vlanid_list> - Enter the VLAN ID list here.

-
- all** - Specify all VLANs for which MLD snooping is to be configured.
 - state** - Specify to enable or disable MLD snooping for the chosen VLAN.
 - enable** - Specify to enable MLD snooping for the chosen VLAN.
 - disable** - Specify to disable MLD snooping for the chosen VLAN.
 - fast_done** - Specify to enable or disable MLD snooping fast_leave function.
 - enable** - Specify to enable MLD snooping fast_leave function. If enable, the membership is immediately removed when the system receive the MLD leave message.
 - disable** - Specify to disable MLD snooping fast_leave function.
 - report_suppression** - Specify whether to send the first MLD report from all hosts for a group to all the multicast routers.
 - enable** - When MLD report suppression is enabled, the Switch sends the first MLD report from all hosts for a group to all the multicast routers. The Switch does not send the remaining MLD reports for the group to the multicast routers. If the multicast router query includes requests only for MLDv1 reports, the Switch forwards only the first MLDv1 report from all hosts for a group to all the multicast routers. If the multicast router query also includes requests for MLDv2 reports, the Switch forwards all MLDv2 reports for a group to the multicast devices. This is the default.
 - disable** - Specify not to send any MLD report from all hosts for a group to all the multicast routers.
 - proxy reporting** - Specify MLD proxy reporting.
 - state** - Specify to enable or disable the proxy reporting.
 - enable** - Enables the proxy reporting.
 - disable** - Disables the proxy reporting.
 - source_ip** - Specify the source IP of proxy reporting integrated report. Default value is zero IP.
 - <ipv6addr>** - Enter the ipv6 address.
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure MLD snooping:

```
DGS-3000-26TC:admin#config mld_snooping vlan_name default state enable
Command: config mld_snooping vlan_name default state enable

Success.

DGS-3000-26TC:admin#
```

53-2 config mld_snooping querier

Description

This command is used to configure the timer in seconds between general query transmissions, the maximum time in seconds to wait for reports from listeners, and the permitted packet loss that is guaranteed by MLD snooping.

Format

```
config mld_snooping querier [vlan_name <vlan_name 32> | vlanid <vlanid_list> | all] {query_interval <sec 1-65535> | max_response_time <sec 1-25> | robustness_variable <value 1-7> | last_listener_query_interval <sec 1-25> | state [enable | disable] | version <value 1-2>}
```

Parameters

-
- vlan_name** - Specify the name of the VLAN for which MLD snooping querier is to be configured.
 - <vlan_name 32>** - Enter the VLAN name here. The VLAN name can be up to 32 characters long.
 - vlanid** - Specify the ID of the VLAN for which MLD snooping querier is to be configured.
 - <vlanid_list>** - Enter the VLAN ID list here.
 - all** - Specify all VLANs for which MLD snooping querier is to be configured.
 - query_interval** - Specify the amount of time in seconds between general query transmissions. The default
-

setting is 125 seconds.

<sec 1-65535> - Enter the query interval value here. This value must be between 1 and 65535 seconds.

max_reponse_time - Specify the maximum time in seconds to wait for reports from listeners. The default setting is 10 seconds.

<sec 1-25> - Enter the maximum response time value here. This value must be between 1 and 25 seconds.

robustness_variable - Provides fine-tuning to allow for expected packet loss on a subnet. The value of the robustness variable is used in calculating the following MLD message intervals:

<value 1-7> - Enter the robustness variable value here. This value must be between 1 and 7.

- Group listener interval—Amount of time that must pass before a multicast router decides there are no more listeners of a group on a network. This interval is calculated as follows: (robustness variable * query interval) + (1 * query response interval).
- Other querier present interval—Amount of time that must pass before a multicast router decides that there is no longer another multicast router that is the querier. This interval is calculated as follows: (robustness variable * query interval) + (0.5 * query response interval).
- Last listener query count—Number of group-specific queries sent before the router assumes there are no local listeners of a group. The default number is the value of the robustness variable.
- By default, the robustness variable is set to 2. You might want to increase this value if you expect a subnet to be loosely.

last_listener_query_interval - (Optional) Specify the maximum amount of time between group-specific query messages, including those sent in response to done-group messages. You might lower this interval to reduce the amount of time it takes a router to detect the loss of the last listener of a group. The default setting is 1 second.

<sec 1-25> - Enter the last listener query interval value here. This value must be between 1 and 25 seconds.

state - (Optional) This allows the Switch to be specified as an MLD Querier (sends MLD query packets) or a Non-Querier (does not send MLD query packets). Set to enable or disable.

enable - Enables the MLD querier state.

disable - Disables the MLD querier state.

version - (Optional) Specify the version of MLD packet that will be sent by the Switch.

<value 1-2> - Enter the version number value here. This value must be between 1 and 2.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the MLD snooping querier:

```
DGS-3000-26TC:admin#config mld_snooping querier vlan_name default query_interval 125 state
enable
Command: config mld_snooping querier vlan_name default query_interval 125 state enable

Success.

DGS-3000-26TC:admin#
```

53-3 config mld_snooping router_ports

Description

This command is used to designate a range of ports as being connected to multicast-enabled routers. This will ensure that all packets with such a router as its destination will reach the multicast-enabled router, regardless of protocol.

Format

config mld_snooping mrouter_ports [vlan <vlan_name 32> | vlanid <vlanid_list>] [add | delete] <portlist>

Parameters

vlan - Specify the name of the VLAN on which the router port resides.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the router port resides.

<vlanid_list> - Enter the VLAN ID list here.

add - Specify to add the router ports.

delete - Specify to delete the router ports.

<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set up static router ports:

```
DGS-3000-26TC:admin#config mld_snooping mrouter_ports vlan default add 1-10
Command: config mld_snooping mrouter_ports vlan default add 1-10

Success.

DGS-3000-26TC:admin#
```

53-4 config mld_snooping router_ports_forbidden

Description

This command is used to designate a range of ports as being not connected to multicast-enabled routers. This ensures that the forbidden router port will not propagate routing packets out.

Format

config mld_snooping mrouter_ports_forbidden [vlan <vlan_name 32> | vlanid <vlanid_list>] [add | delete] <portlist>

Parameters

vlan - Specify the name of the VLAN on which the forbidden router port resides.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the forbidden router port resides.

<vlanid_list> - Enter the VLAN ID list here.

add - Specify to add the forbidden router ports.

delete - Specify to delete the forbidden router ports.

<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set up port 11 as the forbidden router port of the default VLAN:

```
DGS-3000-26TC:admin#config mld_snooping mrouter_ports_forbidden vlan default add 11
Command: config mld_snooping mrouter_ports_forbidden vlan default add 11

Success.

DGS-3000-26TC:admin#
```

53-5 enable mld_snooping

Description

This command is used to enable MLD snooping on the Switch. MLD snooping is disabled by default. When the Switch receives an MLD report packet from a port, this port will be learned as a member port of the multicast group that the port is reported, and the router will be a default member of this multicast group. The multicast packet destined for this multicast group will be forwarded to all the members of this multicast group.

Format

enable mld_snooping

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable MLD snooping on the Switch:

```
DGS-3000-26TC:admin#enable mld_snooping
Command: enable mld_snooping

Success.

DGS-3000-26TC:admin#
```

53-6 disable mld_snooping

Description

This command is used to disable MLD snooping on the Switch. Disabling MLD snooping allows all MLD and IP multicast traffic to flood within a given IP interface. Note that disabling MLD snooping will also disable the forward multicast router only function.

Format

disable mld_snooping

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable MLD snooping on the Switch:

```
DGS-3000-26TC:admin#disable mld_snooping
Command: disable mld_snooping

Success.

DGS-3000-26TC:admin#
```

53-7 show mld_snooping

Description

This command is used to display the current MLD snooping configuration on the Switch.

Format

show mld_snooping {[vlan <vlan_name 32> | vlanid <vlanid_list>]}

Parameters

vlan - (Optional) Specify the name of the VLAN for which you want to view the MLD snooping configuration.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN for which you want to view the MLD snooping configuration.

<vlanid_list> - Enter the VLAN ID list here.

If VLAN is not specified, the system will display all current MLD snooping configurations.

Restrictions

None.

Example

To show MLD snooping:\$\$\$

```

DGS-3000-26TC:admin# show mld_snooping
Command: show mld_snooping

MLD Snooping Global State           : Enabled
Data Driven Learning Max Entries    : 128

VLAN Name                           : default
Query Interval                       : 125
Max Response Time                   : 10
Robustness Value                    : 2
Last Listener Query Interval        : 1
Querier State                       : Enabled
Querier Role                        : Querier
Querier IP                          : FE80::201:2FF:FE03:400
Querier Expiry Time                 : 0 secs
State                               : Enabled
Fast Done                           : Disabled
Rate Limit                          : No Limitation
Report Suppression                  : Enabled
Version                             : 2
Data Driven Learning State          : Enabled
Data Driven Learning Aged Out       : Disabled
Data Driven Group Expiry Time       : 260

Total Entries: 1

DGS-3000-26TC:admin#

```

53-8 show mld_snooping group

Description

This command is used to display the current MLD snooping group information on the Switch.

Format

```
show mld_snooping group {[vlan <vlan_name 32> | vlanid <vlanid_list> | ports <portlist>] {<ipv6addr>}}
{data_driven}
```

Parameters

vlan - (Optional) Specify the name of the VLAN for which you want to view MLD snooping group information. If VLAN and ports and IP address are not specified, the system will display all current MLD snooping group information.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN for which you want to view MLD snooping group information.

<vlanid_list> - Enter the VLAN ID list here.

ports - (Optional) Specify a list of ports for which you want to view MLD snooping group information.

<portlist> - Enter the list of port here.

<ipv6addr> - (Optional) Enter the group IPv6 address for which you want to view MLD snooping group information.

data_driven - (Optional) Displays the data driven groups.

Restrictions

None.

Example

To show an MLD snooping group when MLD v2 is supported:

The first two items mean that for ports 1-2 / port 3, the data from the FE1E::1 will be forwarded.

The third item means that for ports 4-5, the data from FE1E::2 will be forwarded.

The fourth item is a data-driven learned entry. The member port list is empty. The multicast packets will be forwarded to the router ports. If the router port list is empty, the packet will be dropped.

```
DGS-3000-26TC:admin#show mld_snooping group
Command: show mld_snooping group
```

```
Source/Group      : 2001::1/FE1E::1
VLAN Name/VID     : default/1
Member Ports     : 1-2
UP Time          : 26
Expiry Time      : 258
Filter Mode      : INCLUDE
```

```
Source/Group      : 2002::2/FE1E::1
VLAN Name/VID:    : default/1
Member Ports     : 3
UP Time          : 29
Expiry Time      : 247
Filter Mode      : EXCLUDE
```

```
Source/Group      : NULL/FE1E::2
VLAN Name/VID     : default/1
Member Ports     : 4-5
UP Time          : 40
Expiry Time      : 205
Filter Mode      : EXCLUDE
```

```
Source/Group      : NULL/FF1E::5
VLAN Name/VID     : default/1
Member Ports     :
Router Ports     : 24
UP Time          : 100
Expiry Time      : 200
Filter Mode      : EXCLUDE
```

```
Total Entries : 4
```

```
DGS-3000-26TC:admin#
```

```

DGS-3000-26TC:admin#show mld_snooping group data_driven
Command: show mld_snooping group data_driven

Source/Group      : NULL/FF1E::5
VLAN Name/VID     : default/1
Member Ports      :
Router Ports      : 24
UP Time           : 100
Expiry Time       : 200
Filter Mode       : EXCLUDE

Total Entries : 1

DGS-3000-26TC:admin#

```

53-9 show mld_snooping forwarding

Description

This command is used to display the Switch's current MLD snooping forwarding table. It provides an easy way for users to check the list of ports that the multicast group that comes from specific sources will be forwarded to. The packet comes from the source VLAN. They will be forwarded to the forwarding VLAN.

Format

show mld_snooping forwarding {[vlan <vlan_name 32> | vlanid <vlanid_list>]}

Parameters

vlan - (Optional) Specify the name of the VLAN for which you want to view MLD snooping forwarding table information.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN for which you want to view MLD snooping forwarding table information.

<vlanid_list> - Enter the VLAN ID list here.

If no parameter is specified, the system will display all current MLD snooping forwarding table entries of the Switch.

Restrictions

None.

Example

To show all MLD snooping forwarding entries located on the Switch.

```

DGS-3000-26TC:admin#show mld_snooping forwarding
Command: show mld_snooping forwarding

VLAN Name      : default
Source IP      : *
Multicast Group: FE1E::1
Port Member    : 2,7

VLAN Name      : default
Source IP      : *
Multicast Group: FF1E::1
Port Member    : 5

Total Entries : 2

DGS-3000-26TC:admin#

```

53-10 show mld_snooping mrouter_ports

Description

This command is used to display the currently configured router ports on the Switch.

Format

```
show mld_snooping mrouter_ports [vlan <vlan_name 32> | vlanid <vlanid_list> | all] {[static | dynamic | forbidden]}
```

Parameters

-
- vlan** - Specify the name of the VLAN on which the router port resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

 - vlanid** - Specify the ID of the VLAN on which the router port resides.
<vlanid_list> - Enter the VLAN ID list here.

 - all** - Specify all VLANs on which the router port resides.

 - static** - (Optional) Displays router ports that have been statically configured.

 - dynamic** - (Optional) Displays router ports that have been dynamically configured.

 - forbidden** - (Optional) Displays forbidden router ports that have been statically configured.

 - If no parameter is specified, the system will display all currently configured router ports on the Switch.

Restrictions

None.

Example

To display the mld_snooping mrouter ports:

```
DGS-3000-26TC:admin#show mld_snooping mrouter_ports vlan default
Command: show mld_snooping mrouter_ports vlan default

VLAN Name           : default
Static Router Port   : 1-10
Dynamic Router Port  :
Router IP            :
Forbidden Router Port : 11

Total Entries: 1

DGS-3000-26TC:admin#
```

53-11 create mld_snooping static_group

Description

This command is used to create an MLD snooping static group. Member ports can be added to the static group. The static member and the dynamic member ports form the member ports of a group.

The static group will only take effect when MLD snooping is enabled on the VLAN. An **active** static group must be equal to a static MLD group with a link-up member port. For those static member ports, the device needs to emulate the MLD protocol operation to the querier, and forward the traffic destined to the multicast group to the member ports.

The Reserved IP multicast addresses FF0x::/16 must be excluded from the configured group.

The VLAN must be created first before a static group can be created.

Format

```
create mld_snooping static_group [vlan <vlan_name 32> | vlanid <vlanid_list>] <ipv6addr>
```

Parameters

vlan - Specify the name of the VLAN on which the static group resides.

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the static group resides.

<vlanid_list> - Enter the VLAN ID list here.

<ipv6addr> - Enter the multicast group IPv6 address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an MLD snooping static group for VLAN 1, group FF1E::1:

```
DGS-3000-26TC:admin#create mld_snooping static_group vlan default FF1E::1
Command: create mld_snooping static_group vlan default FF1E::1

Success.

DGS-3000-26TC:admin#
```

53-12 delete mld_snooping static_group

Description

This command is used to delete a MLD Snooping multicast static group.

Format

delete mld_snooping static_group [vlan <vlan_name 32> | vlanid <vlanid_list>] <ipv6addr>

Parameters

vlan - Specify the name of the VLAN on which the static group resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the static group resides.
<vlanid_list> - Enter the VLAN ID list here.

<ipv6addr> - Enter the multicast group IP address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an MLD snooping static group for VLAN 1, group FF1E::1:

```
DGS-3000-26TC:admin#delete mld_snooping static_group vlan default FF1E::1
Command: delete mld_snooping static_group vlan default FF1E::1

Success.

DGS-3000-26TC:admin#
```

53-13 config mld_snooping static_group

Description

This command is used to configure an MLD snooping multicast group static member port. When a port is configured as a static member port, the MLD protocol will not operate on this port. For example, suppose that a port is a dynamic member port learned by MLD. If this port is configured as a static member later, then the MLD protocol will stop operating on this port. The MLD protocol will resume once this port is removed from static member ports.

Format

config mld_snooping static_group [vlan <vlan_name 32> | vlanid <vlanid_list>] <ipv6addr> [add | delete] <portlist>

Parameters

vlan - Specify the name of the VLAN on which the static group resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the ID of the VLAN on which the static group resides.
<vlanid_list> - Enter the VLAN ID list here.

<ipv6addr> - Enter the multicast group IPv6 address.

add - Specify to add the member ports.
delete - Specify to delete the member ports.

<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To unset port range 9-10 from MLD snooping static member ports for group FF1E::1 on default VLAN:

```
DGS-3000-26TC:admin#config mld_snooping static_group vlan default FF1E::1 delete 9-10
Command: config mld_snooping static_group vlan default FF1E::1 delete 9-10

Success.

DGS-3000-26TC:admin#
```

53-14 show mld_snooping static_group

Description

This command used to display the MLD snooping multicast group static members.

Format

show mld_snooping static_group {[vlan <vlan_name 32> | vlanid <vlanid_list>] <ipv6addr>}

Parameters

vlan - (Optional) Specify the name of the VLAN on which the static group resides.
<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN on which the static group resides.
<vlanid_list> - Enter the VLAN ID list here.

<ipv6addr> - (Optional) Enter the multicast group IPv6 address.

Restrictions

None.

Example

To display all the MLD snooping static groups:

```
DGS-3000-26TC:admin# show mld_snooping static_group
Command: show mld_snooping static_group
VLAN ID/Name          IP Address           Static Member Ports
-----
1 / Default           FF1E ::1             9-10

Total Entries : 1

DGS-3000-26TC:admin#
```

53-15 config mld_snooping data_driven_learning

Description

This command is used to enable or disable the data-driven learning of an MLD snooping group.

When data-driven learning is enabled for the VLAN, when the Switch receives the IP multicast traffic, on this VLAN, an MLD snooping group will be created. That is, the learning of an entry is not activated by MLD membership registration, but activated by the traffic. For an ordinary MLD snooping entry, the MLD protocol will take care the aging out of the entry. For a data-driven entry, the entry can be specified not to be aged out or to be aged out by the aged timer.

When the data driven learning is enabled, and the data driven table is not full, the multicast filtering mode for all ports is ignored. That is, the multicast packets will be forwarded to router ports. If the data driven learning table is full, the multicast packets will be forwarded according to the multicast filtering mode.

Note that if a data-driven group is created and MLD member ports are learned later, the entry will become an ordinary MLD snooping entry. That is, the aging out mechanism will follow the ordinary MLD snooping entry.

Format

```
config mld_snooping data_driven_learning [all | vlan_name <vlan_name> | vlanid <vlanid_list>] {state
[enable | disable] | aged_out [enable | disable] | expiry_time <sec 1-65535>}(1)
```

Parameters

all - Specify that all VLANs are to be configured.
vlan_name - Specify the VLAN name to be configured. <vlan_name> - Enter the VLAN name here.
vlanid - Specify the VLAN ID to be configured. <vlanid_list> - Enter the VLAN ID list here.
state - Specify to enable or disable the data driven learning of MLD snooping groups. By default, the state is enabled. enable - Enter enable to enable the data driven learning state. disable - Enter disable to disable the data driven learning state.
aged_out - Specify to enable or disable the aging out of entries. By default, the state is disabled. enable - Specify to enable the aged out option. disable - Specify to disable the aged out option.
expiry_time - Specify the data driven group lifetime, in seconds. This parameter is valid only when aged_out is enabled. <sec 1-65535> - Enter the expiry time value here. This value must be between 1 and 65535 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the data driven learning of an MLD snooping group on the default VLAN:

```
DGS-3000-26TC:admin#config mld_snooping data_driven_learning vlan default state enable
Command: config mld_snooping data_driven_learning vlan default state enable

Success.

DGS-3000-26TC:admin#
```

53-16 config mld_snooping data_driven_learning max_learned_entry

Description

This command is used to configure the maximum number of groups that can be learned by data driven.

When the table is full, the system will stop the learning of the new data-driven groups. Traffic for the new groups will be dropped.

Format

config mld_snooping data_driven_learning max_learned_entry <value 1-1024>

Parameters

<value 1-1024> - Enter the maximum of groups that can be learned by data driven here. This value must be between 1 and 1024. The default setting is 128.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the maximum number of groups that can be learned by data driven:

```
DGS-3000-26TC:admin#config mld_snooping data_driven_learning max_learned_entry 50
Command: config mld_snooping data_driven_learning max_learned_entry 50

Success.

DGS-3000-26TC:admin#
```

53-17 **clear mld_snooping data_driven_group****Description**

This command is used to delete the MLD snooping groups learned by data driven.

Format

clear mld_snooping data_driven_group [all | [vlan_name <vlan_name> | vlanid <vlanid_list>] [<ipv6addr> | all]]

Parameters

all - Specify all VLANs to which MLD snooping groups will be deleted.

vlan_name - Specify the VLAN name.

<vlan_name> - Enter the VLAN name here.

vlanid - Specify the VLAN ID.

<vlanid_list> - Enter the VLAN ID list here.

<ipv6addr> - Enter the group's IP address learned by data driven.

all - Specify to clear all data driven groups of the specified VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear all the groups learned by data-driven:

```
DGS-3000-26TC:admin#clear mld_snooping data_driven_group all
Command: clear mld_snooping data_driven_group all

Success.

DGS-3000-26TC:admin#
```

53-18 show mld_snooping statistic counter

Description

This command is used to display the statistics counter for MLD protocol packets that are received by the Switch since MLD snooping was enabled.

Format

show mld_snooping statistic counter [vlan <vlan_name> | vlanid <vlanid_list> | ports <portlist>]

Parameters

vlan - Specify a VLAN to be displayed.
<vlan_name> - Enter the VLAN name here.

vlanid - Specify a list of VLANs to be displayed.
<vlanid_list> - Enter the VLAN ID list here.

ports - Specify a list of ports to be displayed.
<portlist> - Enter the list of port here.

Restrictions

None.

Example

To show MLD snooping statistics counters:

```

DGS-3000-26TC:admin#show mld_snooping statistic counter vlanid 1
Command: show mld_snooping statistic counter vlanid 1

VLAN name          : default
-----
Group Number       : 0

Receive Statistics
  Query
    MLD v1 Query           : 0
    MLD v2 Query           : 0
    Total                   : 0
    Dropped By Rate Limitation : 0
    Dropped By Multicast VLAN : 0

  Report & Done
    MLD v1 Report          : 0
    MLD v2 Report          : 0
    MLD v1 Done            : 0
    Total                   : 0
    Dropped By Rate Limitation : 0
    Dropped By Max Group Limitation : 0
    Dropped By Group Filter : 0
    Dropped By Multicast VLAN : 0

Transmit Statistics
  Query
    MLD v1 Query           : 0
    MLD v2 Query           : 0
    Total                   : 0

  Report & Done
    MLD v1 Report          : 0
    MLD v2 Report          : 0
    MLD v1 Done            : 0
    Total                   : 0

Total Entries : 1

DGS-3000-26TC:admin#

```

53-19 clear mld_snooping statistics counter

Description

This command is used to clear MLD snooping statistics counters.

Format

clear mld _snooping statistics counter

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear MLD snooping statistics counter:

```
DGS-3000-26TC:admin#clear mld_snooping statistics counter
Command: clear mld_snooping statistics counter

Success.

DGS-3000-26TC:admin#
```

53-20 config mld_snooping rate_limit

Description

This command is used to configure the rate limit of MLD control packets that are allowed by each port or VLAN.

Format

config mld_snooping rate_limit [ports <portlist> | vlanid <vlanid_list>] [<value 1-1000> | no_limit]

Parameters

ports - Specify a range of ports to be configured. <portlist> - Enter the range of ports to be configured here.
vlanid - Specify a range of VLANs to be configured. <vlanid_list> - Enter the VLAN ID list here.
<value 1-1000> - Enter a value between 1-1000 to configures the rate limit of MLD control packets that the Switch can process on a specific port or VLAN. The rate is specified in packet per second. The packets that exceed the limited rate will be dropped.
no_limit - Configures the rate limit of MLD control packets that the Switch can process on a specific port or VLAN. The rate is specified in packet per second. The packets that exceed the limited rate will be dropped. The default setting is no_limit.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the MLD snooping per port rate limit:

```
DGS-3000-26TC:admin#config mld_snooping rate_limit ports 1 100
Command: config mld_snooping rate_limit ports 1 100

Success.

DGS-3000-26TC:admin#
```

53-21 show mld_snooping rate_limit

Description

This command is used to display the rate limit of MLD control packets that are allowed by each port or VLAN.

Format

show mld_snooping rate_limit [ports <portlist> | vlanid <vlanid_list>]

Parameters

ports - Specify a list of ports.

<portlist> - Enter the range of ports to be configured here.

vlanid - Specify a list of VLANs.

<vlanid_list> - Enter the VLAN ID list here.

Restrictions

None.

Example

To display the MLD snooping rate limit from port 1 to 5:

```
DGS-3000-26TC:admin#show mld_snooping rate_limit ports 1-5
Command: show mld_snooping rate_limit ports 1-5

Port      Rate Limit
-----  -
1         100
2         No Limit
3         No Limit
4         No Limit
5         No Limit

Total Entries: 5

DGS-3000-26TC:admin#
```

53-22 show mld_snooping host

Description

This command is used to display the MLD hosts that have joined groups on specific ports or specific VLANs.

Format

show mld_snooping host {[vlan <vlan_name 32> | vlanid <vlanid_list> | ports <portlist> | group <ipv6addr>]}

Parameters

vlan - (Optional) Specify the VLAN name.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the VLAN ID.

<vlanid_list> - Enter the VLAN ID here.

ports - (Optional) Specify that list of port that will be displayed.

<portlist> - Enter the list of ports here.

group - (Optional) Specify the group.

<ipv6addr> - Enter the group IPv6 address here.

If no parameter is specified, all joining hosts will be displayed.

Restrictions

None.

Example

To display the host IP information:

```
DGS-3000-26TC:admin#show mld_snooping host vlan default
Command: show mld_snooping host vlan default

VLAN ID:    1
Group:      FF1E::1
Port:       2
Host: 2001::1

VLAN ID:    1
Group:      FF1E::2
Port:       3
Host: 2001::1

VLAN ID:    1
Group:      FF1E::3
Port:       4
Host: 2001::1

VLAN ID:    1
Group:      FF1E::1
Port:       5
Host: 2001::2

Total Entries : 4

DGS-3000-26TC:admin#
```

To display the host's IP information for the group "FF1E::1":

```
DGS-3000-26TC:admin# show mld_snooping host group FF1E::1
```

```
Command: show mld_snooping host group FF1E::1
```

```
VLAN ID:    1
```

```
Group:      FF1E::1
```

```
Port:       2
```

```
Host: 2001::1
```

```
VLAN ID:    1
```

```
Group:      FF1E::1
```

```
Port:       5
```

```
Host: 2001::2
```

```
Total Entries : 2
```

```
DGS-3000-26TC:admin#
```


Chapter 54 MSTP debug enhancement

Command List

debug stp config ports [<portlist> all] [event bpdu state_machine all] state [disable brief detail]
debug stp show information
debug stp show flag {ports <portlist>}
debug stp show counter {ports [<portlist> all]}
debug stp clear counter {ports [<portlist> all]}
debug stp state [enable disable]

54-1 debug stp config ports

Description

This command is used to configure per-port STP debug level on the specified ports.

Format

debug stp config ports [<portlist> | all] [event | bpdu | state_machine | all] state [disable | brief | detail]

Parameters

<portlist> - Enter the STP port range to debug.
all - Specify to debug all ports on the Switch.
event - Specify to debug the external operation and event processing.
bpdu - Specify to debug the BPDU's that have been received and transmitted.
state_machine - Specify to debug the state change of the STP state machine.
all - Specify to debug all of the above.
state - Specify the state of the debug mechanism.
disable - Disables the debug mechanism.
brief - Sets the debug level to brief.
detail - Sets the debug level to detail.

Restrictions

Only Administrators can issue this command.

Example

To configure all STP debug flags to brief level on all ports:

```
DGS-3000-26TC:admin#debug stp config ports all all state brief
Command: debug stp config ports all all state brief

Success.

DGS-3000-26TC:admin#
```

54-2 debug stp show information

Description

This command is used to display STP detailed information.

Format**debug stp show information****Parameters**

None.

Restrictions

Only Administrators can issue this command.

Example

To show STP debug information:

```

DGS-3000-26TC:admin#debug stp show information
Command: debug stp show information

Warning: only support local device.
Spanning Tree Debug Information:
-----
Port Status In Hardware Table:
Instance 0:
Port 1   : FOR  Port 2   : FOR  Port 3   : FOR  Port 4   : FOR  Port 5   : FOR
Port 6   : FOR
Port 7   : FOR  Port 8   : FOR  Port 9   : FOR  Port 10  : FOR  Port 11  : FOR
Port 12  : FOR
Port 13  : FOR  Port 14  : FOR  Port 15  : FOR  Port 16  : FOR  Port 17  : FOR
Port 18  : FOR
Port 19  : FOR  Port 20  : FOR  Port 21  : FOR  Port 22  : FOR  Port 23  : FOR
Port 24  : FOR
Port 25  : FOR  Port 26  : FOR
-----
Root Priority And Times:
Instance 0:
Designated Root Bridge : 36795/FD-7F-C3-FF-EF-12
External Root Cost     : -139756361
Regional Root Bridge   : 65447/3D-D5-7D-35-D8-FF
Internal Root Cost     : 1466613107
Designated Bridge      : 61882/9F-F3-FF-C7-EB-B5
CTRL+C  ESC  q  Quit  SPACE  n  Next Page  ENTER  Next Entry  a  All

```

54-3 debug stp show flag**Description**

This command is used to display the STP debug level on specified ports.

Format**debug stp show flag {ports <portlist>}****Parameters****ports** - (Optional) Specify the STP ports to display.

<portlist> - (Optional) Enter the list of port used for this configuration here.

If no parameter is specified, all ports on the Switch will be displayed.

Restrictions

Only Administrators can issue this command.

Example

To display the debug STP levels on all ports:

```
DGS-3000-26TC:admin#debug stp show flag
Command: debug stp show flag

Global State: Disabled
```

Port Index	Event Flag	BPDU Flag	State Machine Flag
1	Disabled	Disabled	Disabled
2	Disabled	Disabled	Disabled
3	Disabled	Disabled	Disabled
4	Disabled	Disabled	Disabled
5	Disabled	Disabled	Disabled
6	Disabled	Disabled	Disabled
7	Disabled	Disabled	Disabled
8	Disabled	Disabled	Disabled
9	Disabled	Disabled	Disabled
10	Disabled	Disabled	Disabled
11	Disabled	Disabled	Disabled
12	Disabled	Disabled	Disabled
13	Disabled	Disabled	Disabled
14	Disabled	Disabled	Disabled
15	Disabled	Disabled	Disabled
16	Disabled	Disabled	Disabled
17	Disabled	Disabled	Disabled
18	Disabled	Disabled	Disabled
19	Disabled	Disabled	Disabled
20	Disabled	Disabled	Disabled
21	Disabled	Disabled	Disabled
22	Disabled	Disabled	Disabled
23	Disabled	Disabled	Disabled
24	Disabled	Disabled	Disabled
25	Disabled	Disabled	Disabled
26	Disabled	Disabled	Disabled

```
DGS-3000-26TC:admin#
```

54-4 debug stp show counter

Description

This command is used to display the STP counters.

Format

debug stp show counter {ports [<portlist> | all]}

Parameters

ports - (Optional) Specify the STP ports for display.
<portlist> - Enter the list of port used for this configuration here.
all - Display all port's counters.

If no parameter is specified, display the global counters.

Restrictions

Only Administrators can issue this command.

Example

To show the STP counters for port 9:

```
DGS-3000-26TC:admin#debug stp show counter ports 9
Command: debug stp show counter ports 9

STP Counters
-----
Port 9      :
Receive:
Total STP Packets      : 0
Configuration BPDU    : 0
TCN BPDU               : 0
RSTP TC-Flag          : 0
RST BPDU               : 0
Transmit:
Total STP Packets     : 0
Configuration BPDU   : 0
TCN BPDU              : 0
RSTP TC-Flag         : 0
RST BPDU              : 0

Discard:
Total Discarded BPDU  : 0
Global STP Disabled   : 0
Port STP Disabled     : 0
Invalid packet Format  : 0
Invalid Protocol      : 0
Configuration BPDU Length : 0
TCN BPDU Length       : 0
RST BPDU Length       : 0
Invalid Type          : 0
Invalid Timers        : 0

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

54-5 debug stp clear counter

Description

This command is used to clear the STP counters.

Format

debug stp clear counter {ports[<portlist> | all]}

Parameters

ports - (Optional) Specify the port range.
<portlist> - Enter the list of port used for this configuration here.

all - Clears all port counters.

Restrictions

Only Administrators can issue this command.

Example

To clear all STP counters on the Switch:

```
DGS-3000-26TC:admin#debug stp clear counter ports all
Command: debug stp clear counter ports all

Success.

DGS-3000-26TC:admin#
```

54-6 debug stp state

Description

This command is used to enable or disable the STP debug state.

Format

debug stp state [enable | disable]

Parameters

enable - Enables the STP debug state.

disable - Disables the STP debug state.

Restrictions

Only Administrators can issue this command.

Example

To configure the STP debug state to enable, and then disable the STP debug state:

```
DGS-3000-26TC:admin#debug stp state enable
Command: debug stp state enable

Success.

DGS-3000-26TC:admin#debug stp state disable
Command: debug stp state disable

Success.

DGS-3000-26TC:admin#
```

Chapter 55 Multicast Filter Command List

create mcast_filter_profile {[ipv4 ipv6]} profile_id <value 1-24> profile_name <name 1-32>
config mcast_filter_profile [profile_id <value 1-24> profile_name <name 1-32>] {profile_name <name 1-32> [add delete] <mcast_address_list>}(1)
config mcast_filter_profile ipv6 [profile_id <value 1-24> profile_name <name 1-32>] {profile_name <name 1-32> [add delete] <mcastv6_address_list>}(1)
delete mcast_filter_profile {[ipv4 ipv6]} [profile_id [<value 1-24> all] profile_name <name 1-32>]
show mcast_filter_profile {[ipv4 ipv6]} {[profile_id <value 1-24> profile_name <name 1-32>]}
config limited_multicast_addr [ports <portlist> vlanid <vlanid_list>] {[ipv4 ipv6]} { [add delete] [profile_id <value 1-24> profile_name <name 1-32>] access [permit deny]}
config max_mcast_group [ports <portlist> vlanid <vlanid_list>] {[ipv4 ipv6]} {max_group [<value 1-1024> infinite] action [drop replace]}(1)
show max_mcast_group [ports <portlist> vlanid <vlanid_list>] {[ipv4 ipv6]}
show limited_multicast_addr [ports <portlist> vlanid <vlanid_list>] {[ipv4 ipv6]}
config cpu_filter I3_control_pkt <portlist> [{dvmrp pim igmp_query ospf rip vrrp} all] state [enable disable]
show cpu_filter I3_control_pkt ports {<portlist>}
config control_pkt [ipv4 [{igmp vrrp rip pim dvmrp ospf}(1) all] ipv6 [{mld pim ospf ripng nd}(1) all]] replace {priority [<value 0-7> none] dscp [<value 0-63> none]}(1)
show control_pkt {[ipv4 ipv6]}

55-1 create mcast_filter_profile

Description

This command is used to configure a multicast address profile. Multiple ranges of multicast addresses can be defined in the profile. If the IPv4 or ipv6 option is not specified, IPv4 is implied.

Format

```
create mcast_filter_profile {[ipv4 | ipv6]} profile_id <value 1-24> profile_name <name 1-32>
```

Parameters

ipv4 - (Optional) Adds an IPv4 multicast profile.
ipv6 - (Optional) Adds an IPv6 multicast profile.
profile_id - The ID of the profile.
<value 1-24> - Enter the profile ID value here. This value must be between 1 and 24.
profile_name - Provides a meaningful description for the profile.
<name 1-32> - Enter the profile name here. The profile name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a multicast address profile with a profile ID of 2 and a profile name of MOD:

```
DGS-3000-26TC:admin#create mcast_filter_profile profile_id 2 profile_name MOD
Command: create mcast_filter_profile profile_id 2 profile_name MOD

Success.

DGS-3000-26TC:admin#
```

55-2 config mcast_filter_profile

Description

This command is used to add or delete a range of multicast IP addresses to or from the profile.

Format

```
config mcast_filter_profile [profile_id <value 1-24> | profile_name <name 1-32> ] {profile_name <name 1-32> | [add | delete] <mcast_address_list>}(1)
```

Parameters

profile_id - ID of the profile. <value 1-24> - Enter the profile ID value here. This value must be between 1 and 24.
profile_name - Provides a meaningful description for the profile. <name 1-32> - Enter the profile name here. The profile name can be up to 32 characters long.
profile_name - (Optional) Provides a meaningful description for the profile. <name 1-32> - Enter the profile name here. The profile name can be up to 32 characters long.
add - (Optional) Specify to add a multicast address.
delete - (Optional) Specify to delete a multicast address.
<mcast_address_list> - (Optional) List of the multicast addresses to be put in the profile. You can either specify a single multicast IP address or a range of multicast addresses using "-".

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add the multicast address range 225.1.1.1 to 225.1.1.10 to the profile:

```
DGS-3000-26TC:admin#config mcast_filter_profile profile_id 2 add 225.1.1.1 - 225.1.1.10
Command: config mcast_filter_profile profile_id 2 add 225.1.1.1 - 225.1.1.10

Success.

DGS-3000-26TC:admin#
```

55-3 config mcast_filter_profile ipv6

Description

This command is used to add or delete a range of IPv6 multicast addresses to the profile.

Format

```
config mcast_filter_profile ipv6 [profile_id <value 1-24> | profile_name <name 1-32> ] {profile_name <name 1-32> | [add | delete] <mcastv6_address_list>}(1)
```

Parameters

profile_id - ID of the profile.
<value 1-24> - Enter the profile ID value here. This value must be between 1 and 24.
profile_name - Provides a meaningful description for the profile.
<name 1-32> - Enter the profile name here. The profile name can be up to 32 characters long.
profile_name - (Optional) Provides a meaningful description for the profile.
<name 1-32> - Enter the profile name here. The profile name can be up to 32 characters long.
add - (Optional) Specify to add an IPv6 multicast address.
delete - (Optional) Specify to delete an IPv6 multicast address.
<mcastv6_address_list> - (Optional) Enter a single IPv6 multicast IP address or a range of IPv6 multicast addresses This lists the IPv6 multicast addresses to put in the profile.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add the IPv6 multicast address range FFF0E::100:0:0:20 – FFF0E::100:0:0:22 to profile ID 3:

```
DGS-3000-26TC:admin#config mcast_filter_profile ipv6 profile_id 3 add FF0E::100:0:0:20-
FFF0E::100:0:0:22
Command: config mcast_filter_profile ipv6 profile_id 3 add FF0E::100:0:0:20-
FFF0E::100:0:0:22

Success.

DGS-3000-26TC:admin#
```

55-4 delete mcast_filter_profile

Description

This command is used to delete a multicast address profile. If the IPv4 or IPv6 option is not specified, IPv4 is implied.

Format

delete mcast_filter_profile {[ipv4 | ipv6]} [profile_id [<value 1-24> | all] | profile_name <name 1-32>]

Parameters

ipv4 - (Optional) Specify to delete an IPv4 multicast profile.
ipv6 - (Optional) Specify to delete an IPv6 multicast profile.
profile_id - Specify the ID of the profile
<value 1-24> - Enter the profile ID value here. This value must be between 1 and 24.
all - All multicast address profiles will be deleted.
profile_name - Specify to display a profile based on the profile name.
<name 1-32> - Enter the profile name value here. The profile name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the multicast address profile with a profile ID of 3:


```
DGS-3000-26TC:admin#delete mcast_filter_profile profile_id 3
Command: delete mcast_filter_profile profile_id 3
Success.

DGS-3000-26TC:admin#
```

To delete the multicast address profile called MOD:

```
DGS-3000-26TC:admin#delete mcast_filter_profile profile_name MOD
Command: delete mcast_filter_profile profile_name MOD

Total entries: 2

DGS-3000-26TC:admin#
```

55-5 show mcast_filter_profile

Description

This command is used to display the defined multicast address profiles. If the IPv4 or IPv6 option is not specified, IPv4 is implied.

Format

show mcast_filter_profile {[ipv4 | ipv6]} {[profile_id <value 1-24> | profile_name <name 1-32>]}

Parameters

ipv4 - (Optional) Specify to display an IPv4 multicast profile.

ipv6 - (Optional) Specify to display an IPv6 multicast profile.

profile_id - (Optional) Specify the ID of the profile

<value 1-24> - Enter the profile ID value here. This value must be between 1 and 24.

profile_name - (Optional) Specify to display a profile based on the profile name.

<name 1-32> - Enter the profile name here. The profile name can be up to 32 characters long.

Restrictions

None.

Example

To display all the defined multicast address profiles:

```
DGS-3000-26TC:admin#show mcast_filter_profile
Command: show mcast_filter_profile

Profile ID      Name           Multicast Addresses
-----
1              MOD           234.1.1.1 - 238.244.244.244
                234.1.1.1 - 238.244.244.244
2              customer     224.19.62.34 - 224.19.162.200

Total Entries : 2

DGS-3000-26TC:admin#
```

55-6 config limited_multicast_addr

Description

This command is used to configure the multicast address filtering function on a port or VLAN. When there are no profiles specified with a port or VLAN, the limited function is not effective. When the function is configured on a port, it limits the multicast group operated by the IGMP or MLD snooping function. When this function is configured on a VLAN, the multicast group is limited to only operate the IGMP or MLD layer 3 functions. If the IPv4 or IPv6 option is not specified, IPv4 is implied.

Format

```
config limited_multicast_addr [ports <portlist> | vlanid <vlanid_list>] {[ipv4 | ipv6]} {[add | delete]
[profile_id <value 1-24> | profile_name <name 1-32> ] | access [permit | deny]}
```

Parameters

ports - Specify the range of ports to configure the multicast address filtering function. <portlist> - Enter the list of port to be configured here.
vlanid - Specify the VLAN ID of the VLAN that the multicast address filtering function will be configured on. <vlanid_list> - Enter the VLAN ID list here.
ipv4 - (Optional) Specify the IPv4 multicast profile.
ipv6 - (Optional) Specify the IPv6 multicast profile.
add - (Optional) Adds a multicast address profile to a port.
delete - (Optional) Deletes a multicast address profile to a port.
profile_id - (Optional) A profile to be added to or deleted from the port. <value 1-24> - Enter the profile ID value here. This value must be between 1 and 24.
profile_name - (Optional) Specify the profile name used. <name 1-32> - Enter the profile name here. The profile name can be up to 32 characters long.
access - (Optional) Specify the access of packets matching the addresses defined in the profiles. permit - Specify that packets matching the addresses defined in the profiles will be permitted. The default mode is permit.
deny - Specify that packets matching the addresses defined in the profiles will be denied.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add multicast address profile 2 to ports 1 and 3:

```
DGS-3000-26TC:admin#config limited_multicast_addr ports 1,3 add profile_id 2
Command: config limited_multicast_addr ports 1,3 add profile_id 2

Success.

DGS-3000-26TC:admin#
```

55-7 config max_mcast_group

Description

This command is used to configure the maximum number of multicast groups that a port can join.

If the IPv4 or IPv6 option is not specified, IPv4 is implied.

When the joined groups for a port or a VLAN have reached the maximum number, the newly learned group will be dropped if the action is specified as drop. The newly learned group will replace the eldest group if the action is specified as replace.

Format

config max_mcast_group [ports <portlist> | vlanid <vlanid_list> {[ipv4 | ipv6]} {max_group [<value 1-1024> | infinite] | action [drop | replace]}(1)

Parameters

ports - Specify the range of ports to configure the max_mcast_group. <portlist> - Enter the list of ports to be configured here.
vlanid - Specify the VLAN ID to configure max_mcast_group. <vlanid_list> - Enter the VLAN ID list here.
ipv4 - (Optional) Specify that the maximum number of IPv4 learned addresses should be limited.
ipv6 - (Optional) Specify that the maximum number of IPv6 learned addresses should be limited.
max_group - (Optional) Specify the maximum number of multicast groups. <value 1-1024> - Enter the maximum group value here. This value must be between 1 and 1024.
infinite - Specify that the maximum group value will be set to infinite. Infinite means that the maximum number of multicast groups per port or VLAN is not limited by the Switch.
action - (Optional) Specify the action for handling newly learned groups when the register is full. drop - The new group will be dropped. replace - The new group will replace the eldest group in the register table.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the maximum number of multicast group that ports 1 and 3 can join to 100:

```
DGS-3000-26TC:admin#config max_mcast_group ports 1, 3 max_group 100
Command: config max_mcast_group ports 1, 3 max_group 100

Success.

DGS-3000-26TC:admin#
```

55-8 show max_mcast_group

Description

This command is used to display the maximum number of multicast groups that a port can join. If the IPv4 or IPv6 option is not specified, IPv4 is implied.

Format

show max_mcast_group [ports <portlist> | vlanid <vlanid_list> {[ipv4 | ipv6}]

Parameters

ports - Specify the range of ports for displaying information about the maximum number of multicast groups that the specified ports can join. <portlist> - Enter the list of ports to be configured here.
vlanid - Specify the VLAN ID for displaying the maximum number of multicast groups. <vlanid_list> - Enter the VLAN ID list here.
ipv4 - (Optional) Specify to display the maximum number of IPv4 learned addresses.
ipv6 - (Optional) Specify to display the maximum number of IPv6 learned addresses.

Restrictions

None.

Example

To display the maximum number of multicast groups that ports 1 and 2 can join:

```
DGS-3000-26TC:admin#show max_mcast_group ports 1-2
Command: show max_mcast_group ports 1-2
```

Port	Max Multicast Group Number	Action
1	100	Drop
2	Infinite	Drop

```
Total Entries: 2

DGS-3000-26TC:admin#
```

To display the maximum number of multicast groups that VLANs 1 and 2 can join:

```
DGS-3000-26TC:admin#show max_mcast_group vlanid 1-2
Command: show max_mcast_group vlanid 1-2
```

VLAN	Max Multicast Group Number	Action
1	Infinite	Drop
2	10	Drop

```
Total Entries: 2

DGS-3000-26TC:admin#
```

55-9 show limited_multicast_addr

Description

This command is used to display the multicast address range by port or by VLAN.

When the function is configured on a port, it limits the multicast groups operated by the IGMP or MLD snooping function and layer 3 functions. When the function is configured on a VLAN, it limits the multicast groups operated by the IGMP or MLD layer 3 functions.

If the IPv4 or IPv6 option is not specified, IPv4 is implied.

Format

show limited_multicast_addr [ports <portlist> | vlanid <vlanid_list>] {[ipv4 | ipv6]}

Parameters

ports - Specify the range of ports that require information displaying about the multicast address filtering function.

<portlist> - Enter the list of port to be configured here.

vlanid - Specify the VLAN ID of VLANs that require information displaying about the multicast address filtering function.

<vlanid_list> - Enter the VLAN ID list here.

ipv4 - (Optional) Specify to display the IPv4 multicast profile associated with the port.

ipv6 - (Optional) Specify to display the IPv6 multicast profile associated with the port.

Restrictions

None.

Example

To show the limited multicast address range on ports 1 and 3:

```
DGS-3000-26TC:admin#show limited_multicast_addr ports 1,3
Command: show limited_multicast_addr ports 1,3

Port      : 1
Access    : Deny

Profile ID Name           Multicast Addresses
-----
2             MOD           225.1.1.1-225.1.1.10

Port      : 3
Access    : Permit

Profile ID Name           Multicast Addresses
-----
2             MOD           225.1.1.1-225.1.1.10

DGS-3000-26TC:admin#
```

To show the limited multicast settings configured on VLAN 1:

```
DGS-3000-26TC:admin#show limited_multicast_addr vlan 1
Command: show limited_multicast_addr vlanid 1

VLAN ID : 1
Access   : Permit

Profile ID Name           Multicast Addresses
-----
2             MOD           225.1.1.1-225.1.1.10

DGS-3000-26TC:admin#
```

55-10 config cpu_filter l3_control_pkt

Description

This command is used to configure the port state for the Layer 3 control packet filter.

Format

config cpu_filter l3_control_pkt <portlist> [{dvmrp|pim|igmp_query |ospf | rip | vrrp} | all] state [enable | disable]

Parameters

<portlist> - Enter the port list to filter control packets.

dvmp - (Optional) Specify to filter the DVMP control packets.

pim - (Optional) Specify to filter the PIM control packets.

igmp_query - (Optional) Specify to filter the IGMP query control packets.

ospf - (Optional) Specify to filter the OSPF control packets.

rip - (Optional) Specify to filter the RIP control packets.

vrrp - (Optional) Specify to filter the VRRP control packets.

all - Specify to filter all the L3 protocol control packets.

state - Specify the filter function status. The default is disabled.

enable - Enables the filtering function.

disable - Disables the filtering function.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To filter the DVMP control packets on ports 1 to 2:

```
DGS-3000-26TC:admin#config cpu_filter l3_control_pkt 1-2 dvmp state enable
Command: config cpu_filter l3_control_pkt 1-2 dvmp state enable

Success.

DGS-3000-26TC:admin#
```

55-11 show cpu_filter l3_control_pkt ports

Description

This command is used to display the L3 control packet CPU filtering state.

Format

show cpu_filter l3_control_pkt ports {<portlist>}

Parameters

<portlist> - (Optional) Enter the port list to display the L3 control packet CPU filtering state.

Restrictions

None.

Example

To display the filtering status for port 1 and 2:

```
DGS-3000-26TC:admin#show cpu_filter l3_control_pkt ports 1-2
```

```
Command: show cpu_filter l3_control_pkt ports 1-2
```

Port	IGMP Query	DVMRP	PIM	OSPF	RIP	VRRP
1	Disabled	Enabled	Disabled	Disabled	Disabled	Disabl
2	Disabled	Enabled	Disabled	Disabled	Disabled	Disabl

```
DGS-3000-26TC:admin#
```

55-12 config control_pkt

Description

This command is used to change the priority and/or Differentiated Services Code Point (DSCP) fields for specific control packets which are forwarded by software.

Format

```
config control_pkt [ipv4 [{igmp | vrrp | rip | pim | dvmrp | ospf}(1) | all] | ipv6 [{mld | pim | ospf | ripng | nd}(1) | all]] replace {priority [<value 0-7> | none] | dscp [<value 0-63> | none]}(1)
```

Parameters

ipv4 - Specify IPv4 protocols.

igmp - Specify that the Switch will examine the Internet Group Management Protocol (IGMP) field within each packet.

vrrp - Specify that the Switch will examine the Virtual Router Redundancy Protocol (VRRP) field within each packet.

rip - Specify that the Switch will examine the Routing Information Protocol (RIP) field within each packet.

pim - Specify that the Switch will examine the Protocol-Independent Multicast (PIM) field within each packet.

dvmrp - Specify that the Switch will examine the Distance Vector Multicast Routing Protocol (DVMRP) field within each packet.

ospf - Specify that the Switch will examine the Open Shortest Path First (OSPF) field within each packet.

all - Specify that the Switch will examine all above field within each packet.

ipv6 - Specify the IPv6 protocols.

mld - Specify that the Switch will examine the Multicast Listener Discovery (MLD) field within each packet.

pim - Specify that the Switch will examine the Protocol-Independent Multicast (PIM) field within each packet.

ospf - Specify that the Switch will examine the Open Shortest Path First (OSPF) field within each packet.

ripng - Specify that the Switch will examine the IP Version 6 (IPv6) Routing Information Protocol - next generation (RIPng) field within each packet.

nd - Specify that the Switch will examine the IP Version 6 (IPv6) Neighbor Discovery (ND) field within each packet.

all - Specify that the Switch will examine all above field within each packet.

replace - Specify to change the priority or DSCP.

priority - Specify the priority value

<value 0-7> - Enter the value between 0 and 7.

none - Specify not to change the priority.

dscp - Specify the DSCP.

<value 0-63> - Enter the value between 0 and 63

none - Specify not to change the DSCP.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To change the priority of DVMRP packets to 3:

```
DGS-3000-26TC:admin#config control_pkt ipv4 dvmrp replace priority 3
Command: config control_pkt ipv4 dvmrp replace priority 3

Success.

DGS-3000-26TC:admin#
```

55-13 show control_pkt

Description

This command is used to display the priority and DSCP values configured for specific control packets.

Format

show control_pkt {[ipv4| ipv6]}

Parameters

ipv4 - Displays the IPv4 protocols.

ipv6 - Displays the IPv6 protocols.

If no parameter is specified the system will display all protocols.

Restrictions

None.

Example

To display the priority and DSCP values configured for all protocols:

```
DGS-3000-26TC:admin#show control_pkt
Command: show control_pkt

Protocol      Priority      DSCP
-----      -
igmp          None         None
vrrp          None         None
rip           None         None
pim           None         None
dvmrp         3            None
ospf          None         None
mld           None         None
ipv6 pim      None         None
ipv6 ospf     None         None
ripng         None         None
nd            None         None

DGS-3000-26TC:admin#
```


Chapter 56 Multicast VLAN Command List

enable igmp_snooping multicast_vlan
enable mld_snooping multicast_vlan
disable igmp_snooping multicast_vlan
disable mld_snooping multicast_vlan
create igmp_snooping multicast_vlan <vlan_name 32> <vlanid 2-4094> {remap_priority [<value 0-7> none] {replace_priority}}
create igmp_snooping multicast_vlan_group_profile <profile_name 1-32>
create mld_snooping multicast_vlan <vlan_name 32> <vlanid 2-4094> {remap_priority [<value 0-7> none] {replace_priority}}
create mld_snooping multicast_vlan_group_profile <profile_name 1-32>
config igmp_snooping multicast_vlan <vlan_name 32> {[add delete] [member_port <portlist> [source_port <portlist> untag_source_port <portlist>] tag_member_port <portlist>] state [enable disable] replace_source_ip <ipaddr> remap_priority [<value 0-7> none] {replace_priority}}(1)
config igmp_snooping multicast_vlan_group_profile <profile_name 1-32> [add delete] <mcast_address_list>
config igmp_snooping multicast_vlan_group <vlan_name 32> [add delete] profile_name <profile_name 1-32>
config igmp_snooping multicast_vlan forward_unmatched [disable enable]
config mld_snooping multicast_vlan <vlan_name 32> {[add delete] [member_port <portlist> [source_port <portlist> untag_source_port <portlist>] tag_member_port <portlist>] state [enable disable] replace_source_ipv6 <ipv6addr> remap_priority [<value 0-7> none] {replace_priority}}
config mld_snooping multicast_vlan_group_profile <profile_name 1-32> [add delete] <mcastv6_address_list>
config mld_snooping multicast_vlan_group <vlan_name 32> [add delete] profile_name <profile_name 1-32>
config mld_snooping multicast_vlan forward_unmatched [disable enable]
delete igmp_snooping multicast_vlan_group_profile [profile_name <profile_name 1-32> all]
delete igmp_snooping multicast_vlan <vlan_name 32>
delete mld_snooping multicast_vlan_group_profile [profile_name <profile_name 1-32> all]
delete mld_snooping multicast_vlan <vlan_name 32>
show igmp_snooping multicast_vlan_group_profile {< profile_name 1-32>}
show igmp_snooping multicast_vlan_group {<vlan_name 32>}
show igmp_snooping multicast_vlan {<vlan_name 32>}
show mld_snooping multicast_vlan_group_profile {<profile_name 1-32>}
show mld_snooping multicast_vlan_group {<vlan_name 32>}
show mld_snooping multicast_vlan {<vlan_name 32>}

56-1 enable igmp_snooping multicast_vlan

Description

This command is used to control the status of the multicast VLAN function.

Format

```
enable igmp_snooping multicast_vlan
```

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable the IGMP snooping multicast VLAN function globally:

```
DGS-3000-26TC:admin#enable igmp_snooping multicast_vlan
Command: enable igmp_snooping multicast_vlan

Success.

DGS-3000-26TC:admin#
```

56-2 enable mld_snooping multicast_vlan

Description

This command is used to enable the MLD snooping multicast VLAN function. By default, the multicast VLAN is disabled.

Format

enable mld_snooping multicast_vlan

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable MLD snooping multicast VLAN:

```
DGS-3000-26TC:admin#enable mld_snooping multicast_vlan
Command: enable mld_snooping multicast_vlan

Success.

DGS-3000-26TC:admin#
```

56-3 disable igmp_snooping multicast_vlan

Description

This command is used to disable the IGMP multicast VLAN function. The command disable igmp_snooping is used to disable the ordinary IGMP snooping function. By default, the multicast VLAN is disabled.

Format

disable igmp_snooping multicast_vlan

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable the IGMP snooping multicast VLAN function:

```
DGS-3000-26TC:admin#disable igmp_snooping multicast_vlan
Command: disable igmp_snooping multicast_vlan

Success.

DGS-3000-26TC:admin#
```

56-4 disable mld_snooping multicast_vlan

Description

This command is used to disable the MLD snooping multicast VLAN function. By default, the multicast VLAN is disabled.

Format

disable mld_snooping multicast_vlan

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable MLD snooping multicast VLAN:

```
DGS-3000-26TC:admin#disable mld_snooping multicast_vlan
Command: disable mld_snooping multicast_vlan

Success.

DGS-3000-26TC:admin#
```

56-5 create igmp_snooping multicast_vlan

Description

This command is used to create a multicast VLAN and implements relevant parameters as specified. More than one multicast VLANs can be configured. The maximum number of configurable VLANs is 5.

Newly created IGMP snooping multicast VLANs must use a unique VLAN ID and name, i.e. they cannot use the VLAN ID or name of any existing 802.1Q VLAN.

Also keep in mind the following conditions:

- Multicast VLANs cannot be configured or displayed using 802.1Q VLAN commands.
- An IP interface cannot be bound to a multicast VLAN.
- The multicast VLAN snooping function co-exists with the 802.1Q VLAN snooping function.

Format

```
create igmp_snooping multicast_vlan <vlan_name 32> <vlanid 2-4094> {remap_priority [<value 0-7> | none]
{replace_priority}}
```

Parameters

<vlan_name 32>	- Enter the multicast VLAN here. The VLAN name can be up to 32 characters long.
<vlanid 2-4094>	- Enter the multicast VLAN ID to be created. This value must be between 2 and 4094.
remap_priority	- (Optional) The remap priority (0 to 7) to be associated with the data traffic to be forwarded on the multicast VLAN. If none is specified, the packet's original priority will be used. The default setting is none.
<value 0-7>	- Enter the remap priority value here. This value must be between 0 and 7.
none	- Specify that the remap priority value will be set to none.
replace_priority	- (Optional) Specify that packet's priority will be changed by the Switch, based on the remap priority. This flag will only take effect when the remap priority is set.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an IGMP snooping multicast VLAN with the VLAN name mv1 and the VID 2:

```
DGS-3000-26TC:admin#create igmp_snoop multicast_vlan mv1 2
Command: create igmp_snoop multicast_vlan mv1 2

Success.

DGS-3000-26TC:admin#
```

56-6 create igmp_snooping multicast_vlan_group_profile

Description

This command is used to create an IGMP snooping multicast group profile on the Switch.

Format

```
create igmp_snooping multicast_vlan_group_profile <profile_name 1-32>
```

Parameters

<profile_name 1-32>	- Enter the multicast VLAN group profile name here. The name can be up to 32 characters long.
----------------------------------	---

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an IGMP snooping multicast group profile with the name "test":

```
DGS-3000-26TC:admin#create igmp_snooping multicast_vlan_group_profile test
Command: create igmp_snooping multicast_vlan_group_profile test

Success.

DGS-3000-26TC:admin#
```

56-7 create mld_snooping multicast_vlan

Description

This command is used to create an MLD snooping multicast VLAN and implements relevant parameters as specified. More than one multicast VLAN can be configured. Newly created MLD snooping multicast VLANs must use a unique VLAN ID and name, i.e. they cannot use the VLAN ID or name of any existing 802.1Q VLAN. Also keep in mind the following conditions: multicast VLANs cannot be configured or displayed using 802.1Q VLAN commands; an IP interface cannot be bound to a multicast VLAN; and the multicast VLAN snooping function co-exists with the 802.1Q VLAN snooping function.

Format

create mld_snooping multicast_vlan <vlan_name 32> <vlanid 2-4094> {remap_priority [<value 0-7> | none] {replace_priority}}

Parameters

- <vlan_name 32>** - Enter the name of the multicast VLAN to be created. Each multicast VLAN is given a name that can be up to 32 characters.
- <vlanid 2-4094>** - Enter the VLAN ID of the multicast VLAN to be created. The range is from 2 to 4094.
- remap_priority** - (Optional) Specify the remap priority here.
 - <value 0-7>** - Enter the remap priority (0 to 7) to be associated with the data traffic to be forwarded on the multicast VLAN.
 - none** - If none is specified, the packet's original priority will be used. The default setting is none.
- replace_priority** - (Optional) Specify that the packet's priority will be changed by the switch, based on the remap priority. This flag will only take effect when the remap priority is set.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an MLD snooping multicast VLAN with the VLAN name mv1 and the VID 2:

```
DGS-3000-26TC:admin#create mld_snooping multicast_vlan mv1 2
Command: create mld_snooping multicast_vlan mv1 2

Success.

DGS-3000-26TC:admin#
```

56-8 create mld_snooping multicast_vlan_group_profile

Description

This command is used to create a multicast group profile. The profile name for MLD snooping must be unique.

Format

create mld_snooping multicast_vlan_group_profile <profile_name 1-32>

Parameters

<profile_name 1-32> - Enter the multicast VLAN profile name. The maximum length is 32 characters.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an MLD snooping multicast group profile with the name "Knicks":

```
DGS-3000-26TC:admin#create mld_snooping multicast_vlan_group_profile Knicks
Command: create mld_snooping multicast_vlan_group_profile Knicks

Success.

DGS-3000-26TC:admin#
```

56-9 config igmp_snooping multicast_vlan

Description

This command is used to add member ports and source ports to a list of multicast VLAN member ports. Member ports automatically become untagged members of the multicast VLAN and source ports automatically become tagged members of the multicast VLAN. However, member ports of one multicast VLAN are allowed to overlap with member ports on a different multicast VLAN.

A multicast VLAN must first be created using the create igmp_snooping multicast_vlan command before the multicast VLAN can be configured.

Format

config igmp_snooping multicast_vlan <vlan_name 32> {[add | delete] [member_port <portlist> | [source_port <portlist> | untag_source_port <portlist>] | tag_member_port <portlist>] | state [enable|disable] | replace_source_ip <ipaddr> | remap_priority [<value 0-7> | none] {replace_priority}}(1)

Parameters

<vlan_name 32> - Enter the multicast VLAN here. The VLAN name can be up to 32 characters long.

add - Specify that the port will be added to the specified multicast VLAN.

delete - Specify that the port will be deleted from the specified multicast VLAN.

member_port - A member port or range of member ports to be added to the multicast VLAN. The specified range of ports will become untagged members of the multicast VLAN.

<portlist> - Enter the list of port to be configured here.

source_port - A port or range of ports to be added to the multicast VLAN.

<portlist> - Enter the list of port to be configured here.

untag_source_port - Specify the source port or range of source ports as untagged members of the multicast VLAN. The PVID of the untagged source port is automatically changed to the multicast VLAN. Source ports

must be either tagged or untagged for any single multicast VLAN, i.e. both types cannot be members of the same multicast VLAN.

<portlist> - Enter the list of port to be configured here.

tag_member_port - Specify the port or range of ports that will become tagged members of the multicast VLAN.

<portlist> - Enter the list of port to be configured here.

state - Specify that the multicast VLAN for a chosen VLAN should be enabled or disabled.

enable - Specify to enable the multicast VLAN for a chosen VLAN.

disable - Specify to disable the multicast VLAN for a chosen VLAN.

replace_source_ip - Before forwarding the report packet sent by the host, the source IP address in the join packet must be replaced by this IP address. If 0.0.0.0 is specified, the source IP address will not be replaced.

<ipaddr> - Enter the replace source IP address here.

remap_priority - The remap priority value to be associated with the data traffic to be forwarded on the multicast VLAN. If none is specified, the packet's original priority is used. The default setting is none.

<value 0-7> - Enter the remap priority value here. This value must be between 0 and 7.

none - Specify that the remap priority value will be set to none.

replace_priority - (Optional) Specify that the packet priority will be changed to the remap_priority, but only if remap_priority is set.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure an IGMP snooping multicast VLAN with the name "v1", make ports 1 and 3 members of the VLAN, and set the state to enable:

```
DGS-3000-26TC:admin#config igmp_snooping multicast_vlan mv1 add member_port 1,3 state enable
Command: config igmp_snooping multicast_vlan mv1 add member_port 1,3 state enable

Success.

DGS-3000-26TC:admin#
```

56-10 config igmp_snooping multicast_vlan_group_profile

Description

This command is used to configure an IGMP snooping multicast group profile on the Switch and add or delete multicast addresses for the profile.

Format

```
config igmp_snooping multicast_vlan_group_profile <profile_name 1-32> [add | delete]
<mcast_address_list>
```

Parameters

<profile_name 1-32> - Enter the multicast VLAN group name here. This name can be up to 32 characters long.

add - Adds a multicast address list to or from this multicast VLAN profile.

delete - Deletes a multicast address list to or from this multicast VLAN profile.

<mcast_address_list> - Enter the multicast VLAN IP address here. It can be a continuous single multicast address, such as 225.1.1.1, 225.1.1.3, 225.1.1.8, a multicast address range, such as 225.1.1.1-225.2.2.2, or both of types, such as 225.1.1.1, 225.1.1.18-225.1.1.20.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add the single multicast address 225.1.1.1 to the IGMP snooping multicast VLAN profile named “test”:

```
DGS-3000-26TC:admin#config igmp_snooping multicast_vlan_group_profile test add 225.1.1.1
Command: config igmp_snooping multicast_vlan_group_profile test add 225.1.1.1

Success.

DGS-3000-26TC:admin#
```

56-11 config igmp_snooping multicast_vlan_group

Description

This command is used to configure the multicast group learned with the specific multicast VLAN. The following cases can be considered for examples:

- **Case 0** - If the IGMP Snooping is enabled on the VLAN of the join packet, the multicast VLAN won't process the packet.
- **Case 1** - The multicast group is not configured, multicast VLANs do not have any member ports overlapping and the join packet received by the member port is learned on only the multicast VLAN that this port is a member of.
- **Case 2** - The join packet is learned with the multicast VLAN that contains the destination multicast group. If the destination multicast group of the join packet cannot be classified into any multicast VLAN to which this port belongs, it will be forwarded or dropped according to forward unmatched mode.

Note that a profile cannot overlap in different multicast VLANs. Multiple profiles can be added to a multicast VLAN.

Format

config igmp_snooping multicast_vlan_group <vlan_name 32> [add | delete] profile_name <profile_name 1-32>

Parameters

<vlan_name 32> - Enter the multicast VLAN name here. The VLAN name can be up to 32 characters long.

add - Specify to associate a profile to a multicast VLAN.

delete - Specify to de-associate a profile from a multicast VLAN.

profile_name - Specify the multicast VLAN profile name.

<profile_name 1-32> - Enter the multicast VLAN profile name here. The name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add an IGMP snooping profile to a multicast VLAN group with the name “v1”:

```
DGS-3000-26TC:admin#config igmp_snooping multicast_vlan_group v1 add profile_name channel_1
Command: config igmp_snooping multicast_vlan_group v1 add profile_name channel_1

Success.

DGS-3000-26TC:admin#
```


56-12 config igmp_snooping multicast_vlan forward_unmatched

Description

This command is used to configure the forwarding mode for multicast VLAN unmatched packets. When the Switch receives an IGMP snooping packet, it will match the packet against the multicast profile to determine which multicast VLAN to associate with. If the packet does not match all profiles, the packet will be forwarded or dropped based on this setting.

By default, the packet will be dropped.

Format

config igmp_snooping multicast_vlan forward_unmatched [disable | enable]

Parameters

enable - The packet will be flooded on the VLAN.
disable - The packet will be dropped.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the forwarding mode for multicast VLAN unmatched packets :

```
DGS-3000-26TC:admin#config igmp_snooping multicast_vlan forward_unmatched enable
Command: config igmp_snooping multicast_vlan forward_unmatched enable

Success.

DGS-3000-26TC:admin#
```

56-13 config mld_snooping multicast_vlan

Description

This command is used to configure MLD snooping multicast VLAN parameters. The member port list and source port list cannot overlap. However, the member port of one multicast VLAN can overlap with another multicast VLAN. The multicast VLAN must be created first using the **create mld_snooping multicast_vlan** command before the multicast VLAN can be configured.

Format

config mld_snooping multicast_vlan <vlan_name 32> {[add | delete] [member_port <portlist> | [source_port <portlist> | untag_source_port <portlist>] | tag_member_port <portlist>] | state [enable | disable] | replace_source_ipv6 <ipv6addr> | remap_priority [<value 0-7> | none] {replace_priority}}(1)

Parameters

<vlan_name 32> - Enter the name of the multicast VLAN to be configured. Each multicast VLAN is given a name that can be up to 32 characters.
add - Specify to add a port.
delete - Specify to delete a port.
member_port - Specify member port of the multicast VLAN. The specified range of ports will become untagged members of the multicast VLAN.
<portlist> - Enter a range of ports to be configured.

source_port	- Specify source port where the multicast traffic is entering the Switch.
<portlist>	- Enter a range of ports to be configured.
untag_source_port	- Specify the untagged source port where the multicast traffic is entering the Switch. The PVID of the untagged source port is automatically changed to the multicast VLAN. Source ports must be either tagged or untagged for any single multicast VLAN, i.e. both types cannot be members of the same multicast VLAN
<portlist>	- Enter a range of ports to be configured.
tag_member_port	- Specify the tagged member port of the multicast VLAN.
<portlist>	- Enter a range of ports to be configured.
state	- Specify if the multicast VLAN for a chosen VLAN should be enabled or disabled.
enable	- Enable multicast VLAN for the chosen VLAN.
disable	- Disable multicast VLAN for the chosen VLAN.
replace_source_ipv6	- With the MLD snooping function, the MLD report packet sent by the host will be forwarded to the source port. Before forwarding of the packet, the source IP address in the join packet needs to be replaced by this IP address. If none is specified, the source IP address will not be replaced.
<ipv6addr>	- Enter the IP address here.
remap_priority	- Specify the remap priority here.
<value 0-7>	- Enter a remap priority value (0 to 7) to be associated with the data traffic forwarded on the multicast VLAN.
none	- If none is specified, the packet's original priority is used. The default setting is none.
replace_priority	- (Optional) Specify that the packet priority will be changed to the remap priority, when remap priority is set.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure an MLD snooping multicast VLAN with the name "v1", make ports 1 and 3 members of the VLAN, and set the state to enable:

```
DGS-3000-26TC:admin#config mld_snooping multicast_vlan v1 add member_port 1,3 state enable
Command: config mld_snooping multicast_vlan v1 add member_port 1,3 state enable

Success.

DGS-3000-26TC:admin#
```

56-14 config mld_snooping multicast_vlan_group_profile

Description

This command is used to configure an MLD snooping multicast group profile on the switch.

Format

```
config mld_snooping multicast_vlan_group_profile <profile_name 1-32> [add | delete]
<mcastv6_address_list>
```

Parameters

<profile_name 32>	- Enter the multicast VLAN profile name. The maximum length is 32 characters.
add	- Specify to add a multicast address list to this multicast VLAN profile.
delete	- Specify to delete a multicast address list from this multicast VLAN profile.
<mcastv6_address_list>	- Enter a multicast address list. This can be a continuous single multicast address, such as FF1E::1, FF1E::2, a multicast address range, such as FF1E::3-FF1E::9, or both types, such as FF1E::11, FF1E::12-FF1E::20.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add the single multicast address FF1E::11 and multicast range FF1E::12-FF1E::20 to the MLD snooping multicast VLAN profile named "Knicks":

```
DGS-3000-26TC:admin#config mld_snooping multicast_vlan_group_profile Knicks add FF1E::11,
FF1E::12-FF1E::20
Command: config mld_snooping multicast_vlan_group_profile Knicks add FF1E::11, FF1E::12-
FF1E::20

Success.

DGS-3000-26TC:admin#
```

56-15 config mld_snooping multicast_vlan_group

Description

This command is used to configure the multicast group which is used with the specific multicast VLAN. The following two cases can be considered as examples:

Case 1 - The multicast group is not configured, multicast VLANs do not have any member ports overlapping and the packets that are received by the member port is used only by the multicast VLAN that this port is a member of.

Case 2 - The packets are used with the multicast VLAN which contains the destination multicast group. If the destination multicast group of the added packets cannot be classified into any multicast VLAN (to which this port belongs), then the added packets will be used on the natural VLAN of the packet.

Note: A profile cannot overlap in different multicast VLANs. Multiple profiles can be added to a multicast VLAN.

Format

```
config mld_snooping multicast_vlan_group <vlan_name 32> [add | delete] profile_name <profile_name 1-32>
```

Parameters

<vlan_name 32> - Enter the name of the multicast VLAN to be configured, each multicast VLAN is given a name that can be up to 32 characters.

add - Specify to be used to associate a profile to a multicast VLAN.

delete - Specify to de-associate a profile from a multicast VLAN.

profile_name - Specify to add a multicast VLAN profile name.

<profile_name 1-32> - The name of the MLD multicast VLAN group profile to be associated or de-associated to the specified multicast VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the forwarding mode for MLD snooping multicast VLAN unmatched packets:

```
DGS-3000-26TC:admin# config igmp_snooping multicast_vlan_group v1 add profile_name channel_1
Command: config igmp_snooping multicast_vlan_group v1 add profile_name channel_1
Success.

DGS-3000-26TC:admin#
```

56-16 config mld_snooping multicast_vlan forward_unmatched

Description

This command is used to configure the forwarding mode for MLD snooping multicast VLAN unmatched packets. When the switch receives an MLD snooping packet, it will match the packet against the multicast profile to determine which multicast VLAN to associate with. If the packet does not match all profiles, the packet will be forwarded in the natural VLAN of the packet, or dropped based on this setting. By default, the packet will be dropped.

Format

config mld_snooping multicast_vlan forward_unmatched [disable | enable]

Parameters

disable - The packet will be dropped.

enable - The packet will be flooded on the VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the forwarding mode for MLD snooping multicast VLAN unmatched packets:

```
DGS-3000-26TC:admin#config mld_snooping multicast_vlan forward_unmatched enable
Command: config mld_snooping multicast_vlan forward_unmatched enable

Success.

DGS-3000-26TC:admin#
```

56-17 delete igmp_snooping multicast_vlan_group_profile

Description

This command is used to delete an IGMP snooping multicast group profile on the Switch. Specify a profile name to delete it. Specify all to remove all profiles along with the groups that belong to that profile.

Format

delete igmp_snooping multicast_vlan_group_profile [profile_name <profile_name 1-32> | all]

Parameters

profile_name - Specify the multicast VLAN profile name.

<profile_name 1-32> - Enter the multicast VLAN profile name here. This name can be up to 32 characters long.

all - Specify to delete all the multicast VLAN profiles.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an IGMP snooping multicast group profile with the name "MOD":

```
DGS-3000-26TC:admin#delete igmp_snooping multicast_vlan_group_profile profile_name MOD
Command: delete igmp_snooping multicast_vlan_group_profile profile_name MOD

Success.

DGS-3000-26TC:admin#
```

56-18 delete igmp_snooping multicast_vlan

Description

This command is used to delete an IGMP snooping multicast VLAN.

Format

delete igmp_snooping multicast_vlan <vlan_name 32>

Parameters

<vlan_name 32> -Enter the VLAN name here. The VLAN name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an IGMP snooping multicast VLAN called "v1":

```
DGS-3000-26TC:admin#delete igmp_snooping multicast_vlan v1
Command: delete igmp_snooping multicast_vlan v1

Success.

DGS-3000-26TC:admin#
```

56-19 delete mld_snooping multicast_vlan_group_profile

Description

This command is used to delete an existing MLD snooping multicast group profile on the switch. Specify a profile name to delete it.

Format

delete mld_snooping multicast_vlan_group_profile [profile_name <profile_name 1-32> | all]

Parameters

profile_name - Specify the multicast VLAN group profile name. The maximum length is 32 characters.
<profile_name 1-32> - Enter the multicast VLAN group profile name. The profile name can be up to 32 characters long.

all - Specify to delete all the profiles.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an MLD snooping multicast group profile named “Knicks”:

```
DGS-3000-26TC:admin#delete mld_snooping multicast_vlan_group_profile profile_name Knicks
Command: delete mld_snooping multicast_vlan_group_profile profile_name Knicks

Success.

DGS-3000-26TC:admin#
```

56-20 delete mld_snooping multicast_vlan

Description

This command is used to delete an MLD snooping multicast VLAN.

Format

delete mld_snooping multicast_vlan <vlan_name 32>

Parameters

<vlan_name 32> - Enter the name of the multicast deleted VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an MLD snooping multicast VLAN called “v1”:

```
DGS-3000-26TC:admin#delete mld_snooping multicast_vlan v1
Command: delete mld_snooping multicast_vlan v1

Success.

DGS-3000-26TC:admin#
```

56-21 show igmp_snooping multicast_vlan_group_profile

Description

This command is used to show the IGMP snooping multicast group profiles.

Format

show igmp_snooping multicast_vlan_group_profile {< profile_name 1-32>}

Parameters

<profile_name 1-32> - (Optional) Enter the multicast VLAN group profile name here. The name can be up to 32 characters long.

Restrictions

None.

Example

To display all IGMP snooping multicast VLAN profiles:

```
DGS-3000-26TC:admin#show igmp_snooping multicast_vlan_group_profile
Command: show igmp_snooping multicast_vlan_group_profile

Profile Name          Multicast Addresses
-----
MOD                   234.1.1.1 - 238.244.244.244
                      239.1.1.1 - 239.2.2.2
Customer              224.19.62.34 - 224.19.162.200

Total Entries : 2

DGS-3000-26TC:admin#
```

56-22 show igmp_snooping multicast_vlan_group

Description

This command is used to show an IGMP snooping multicast VLAN group.

Format

show igmp_snooping multicast_vlan_group {<vlan_name 32>}

Parameters

<vlan_name 32> - (Optional) Enter the VLAN name here. The VLAN name can be up to 32 characters long.

Restrictions

None.

Example

To show all IGMP snooping multicast VLAN groups setup on the Switch:

```
DGS-3000-26TC:admin#show igmp_snooping multicast_vlan_group
Command: show igmp_snooping multicast_vlan_group

VLAN Name                VLAN ID      Multicast Group Profiles
-----
mv1                       2           test

DGS-3000-26TC:admin#
```

56-23 show igmp_snooping multicast_vlan

Description

This command is used to display information for IGMP snooping multicast VLANs.

Format

show igmp_snooping multicast_vlan {<vlan_name 32>}

Parameters

<vlan_name 32> - (Optional) Enter the VLAN name here. The VLAN name can be up to 32 characters long.

Restrictions

None.

Example

To display all IGMP snooping multicast VLANs:


```

DGS-3000-26TC:admin#show igmp_snooping multicast_vlan
Command: show igmp_snooping multicast_vlan

IGMP Multicast VLAN Global State      : Disabled
IGMP Multicast VLAN Forward Unmatched : Disabled

VLAN Name                               : test
VID                                       : 100

Member(Untagged) Ports                  : 1
Tagged Member Ports                    :
Source Ports                            : 3
Untagged Source Ports                  :
Status                                  : Disabled
Replace Source IP                       : 0.0.0.0
Remap Priority                           : None

Total Entries: 1

DGS-3000-26TC:admin#

```

56-24 show mld_snooping multicast_vlan_group_profile

Description

This command is used to display an MLD snooping multicast group profile.

Format

show mld_snooping multicast_vlan_group_profile {<profile_name 1-32>}

Parameters

<profile_name 1-32> - (Optional) Enter the multicast VLAN profile name. The maximum length is 32 characters.

Restrictions

None.

Example

To display all MLD snooping multicast VLAN profiles:

```

DGS-3000-26TC:admin#show mld_snooping multicast_vlan_group_profile
Command: show mld_snooping multicast_vlan_group_profile

Profile Name           Multicast Addresses
-----
rock                   FF1E::1
                       FF1E::10-FF1E::20

Total Entries : 1

DGS-3000-26TC:admin#

```

56-25 show mld_snooping multicast_vlan_group

Description

This command is used to allow group profile information for a specific multicast VLAN to be displayed.

Format

show mld_snooping multicast_vlan_group {<vlan_name 32>}

Parameters

<vlan_name 32> - (Optional) Enter the name of the group profile's multicast VLAN to be displayed.

Restrictions

None.

Example

To display all MLD snooping multicast VLANs' group profile information:

```
DGS-3000-26TC:admin#show mld_snooping multicast_vlan_group
Command: show mld_snooping multicast_vlan_group

VLAN Name                VLAN ID      Multicast Group Profiles
-----
test2                    20
test1                    100

DGS-3000-26TC:admin#
```

56-26 show mld_snooping multicast_vlan

Description

This command is used to allow information for a specific multicast VLAN to be displayed.

Format

show mld_snooping multicast_vlan {<vlan_name 32>}

Parameters

<vlan_name 32> - (Optional) Enter the name of the multicast VLAN to be displayed.

Restrictions

None.

Example

To display all MLD snooping multicast VLANs:

```
DGS-3000-26TC:admin#show mld_snooping multicast_vlan
Command: show mld_snooping multicast_vlan

MLD Multicast VLAN Global State      : Disabled
MLD Multicast VLAN Forward Unmatched : Disabled

VLAN Name          :test
VID                :100

Member(Untagged) Ports :1
Tagged Member Ports  :
Source Ports        :3
Untagged Source Ports :
Status              :Disabled
Replace Source IP    :::
Remap Priority       :None

Total Entries: 1

DGS-3000-26TC:admin#
```

Chapter 57 Multiple Spanning Tree Protocol (MSTP) Command List

enable stp
disable stp
config stp {maxage <value 6-40> maxhops <value 6-40> hellotime <value 1-2> forwarddelay <value 4-30> txholdcount <value 1-10> fbpdu [enable disable] nni_bpdu_addr [dot1d dot1ad]}
show stp
create stp instance_id <value 1-7>
config stp instance_id <value 1-7> [add_vlan remove_vlan] <vidlist>
delete stp instance_id <value 1-7>
config stp mst_config_id {revision_level <int 0-65535> name <string>}
show stp mst_config_id
config stp mst_ports <portlist> instance_id <value 0-7> { internalCost [auto <value 1-200000000>] priority <value 0-240>}
config stp ports <portlist> {externalCost [auto <value 1-200000000>] hellotime <value 1-2> migrate [yes no] edge [true false auto] p2p [true false auto] state [enable disable] restricted_role [true false] restricted_tcn [true false] fbpdu [enable disable]}
show stp ports {<portlist>}
config stp priority <value 0-61440> instance_id <value 0-7>
config stp version [mstp rstp stp]
show stp instance {<value 0-7>}

57-1 enable stp

Description

This command is used to enable STP globally.

Format

```
enable stp
```

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable STP:

```
DGS-3000-26TC:admin#enable stp
Command: enable stp

Success.

DGS-3000-26TC:admin#
```

57-2 disable stp

Description

This command is used to disable STP globally.

Format

disable stp

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable STP:

```
DGS-3000-26TC:admin#disable stp
Command: disable stp

Success.

DGS-3000-26TC:admin#
```

57-3 config stp

Description

This command is used to configure the bridge parameters global settings.

Format

config stp {maxage <value 6-40> | maxhops <value 6-40> | hellotime <value 1-2> | forwarddelay <value 4-30> | txholdcount <value 1-10> | fbpdu [enable | disable] | nni_bpdu_addr [dot1d | dot1ad]}

Parameters

maxage - (Optional) Specify to determine if a BPDU is valid. The default value is 20.
<value 6-40> - Enter the maximum age value here. This value must be between 6-40.

maxhops - (Optional) Specify to restrict the forwarded times of one BPDU. The default value is 20.
<value 6-40> - Enter the maximum hops value here. This value must be between 6 and 40.

hello_time - (Optional) The time interval for sending configuration BPDUs by the Root Bridge. The default value is 2 seconds. This parameter is for STP and RSTP version. MSTP version uses per-port hellotime parameter.
<value 1-2> - Enter the hello time value here. This value must be between 1 and 2.

forwarddelay - (Optional) The maximum delay time for one BPDU to be transmitted by a bridge and received from another bridge. The default value is 15.
<value 4-30> - Enter the maximum delay time here. This value must be between 4 and 30.

txholdcount - (Optional) Specify to restrict the numbers of BPDU transmitted in a time interval.
<value 1-10> - Enter the transmitted BPDU restriction value here. This value must be between 1 and 10.

fbpdu - (Optional) Specify whether the bridge will flood STP BPDU when STP functionality is disabled.
enable - Specify that the bridge will flood STP BPDU when STP functionality is disabled
disable - Specify that the bridge will not flood STP BPDU when STP functionality is disabled

nni_bpdu_addr - (Optional) This address is used to determine the BPDU protocol address for an STP in service provider site. It can use either an 802.1d STP address (0180C2000000) or an 802.1ad service provider STP

address (0180C2000008).

dot1d - Specify that the NNI BPDU protocol address value will be set to Dot1d.

dot1ad - Specify that the NNI BPDU protocol address value will be set to Dot1ad.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure STP:

```
DGS-3000-26TC:admin#config stp maxage 25
Command: config stp maxage 25

Success.

DGS-3000-26TC:admin#
```

57-4 show stp

Description

This command is used to show the bridge parameters global settings.

Format

show stp

Parameters

None.

Restrictions

None.

Example

To show STP:

```
DGS-3000-26TC:admin#show stp
Command: show stp

STP Bridge Global Settings
-----
STP Status          : Enabled
STP Version         : RSTP
Max Age             : 25
Hello Time          : 2
Forward Delay       : 15
Max Hops            : 20
TX Hold Count       : 6
Forwarding BPDU     : Disabled
NNI BPDU Address    : dot1d

DGS-3000-26TC:admin#
```

57-5 create stp instance_id

Description

This command is used to create an MST Instance without mapping the corresponding VLANs.

Format

create stp instance_id <value 1-7>

Parameters

<value 1-7> - Enter the MSTP instance ID here. This value must be between 1 and 7.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create MSTP instance:

```
DGS-3000-26TC:admin#create stp instance_id 2
Command: create stp instance_id 2

Success.

DGS-3000-26TC:admin#
```

57-6 config stp instance_id

Description

This command is used to map or remove the VLAN range of the specified MST instance for the existed MST instances.

Format

config stp instance_id <value 1-7> [add_vlan | remove_vlan] <vidlist>

Parameters

<value 1-7> - Enter the MSTP instance ID here. This value must be between 1 and 7.

add_vlan - Specify to map the specified VLAN list to an existing MST instance.

remove_vlan - Specify to delete the specified VLAN list from an existing MST instance.

<vidlist> - Enter a list of VLANs by VLAN ID.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To map a VLAN ID to an MSTP instance:

```
DGS-3000-26TC:admin#config stp instance_id 2 add_vlan 1-3
Command: config stp instance_id 2 add_vlan 1-3

Success.

DGS-3000-26TC:admin#
```

To remove a VLAN ID from an MSTP instance:

```
DGS-3000-26TC:admin#config stp instance_id 2 remove_vlan 2
Command: config stp instance_id 2 remove_vlan 2

Success.

DGS-3000-26TC:admin#
```

57-7 delete stp instance_id

Description

This command is used to delete an MST Instance.

Format

delete stp instance_id <value 1-7>

Parameters

<value 1-7> - Enter the MSTP instance ID here. This value must be between 1 and 7.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an MSTP instance:


```
DGS-3000-26TC:admin#delete stp instance_id 2
Command: delete stp instance_id 2

Success.

DGS-3000-26TC:admin#
```

57-8 config stp mst_config_id

Description

This command is used to change the name or the revision level of the MST configuration identification.

Format

config stp mst_config_id {revision_level <int 0-65535> | name <string>}

Parameters

revision_level - (Optional) The same given name with different revision level also represents different MST regions.

<int 0-65535> - Enter the revision level here. This value must be between 0 and 65535.

name - (Optional) Specify the name given for a specific MST region.

<string> - Enter the MST region name here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To change the name and revision level of the MST configuration identification:

```
DGS-3000-26TC:admin#config stp mst_config_id name R&D_BlockG revision_level 1
Commands: config stp mst_config_id name R&D_BlockG revision_level 1

Success.

DGS-3000-26TC:admin#
```

57-9 show stp mst_config_id

Description

This command is used to show the MST configuration identification.

Format

show stp mst_config_id

Parameters

None.

Restrictions

None.

Example

show STP MST configuration ID:

```
DGS-3000-26TC:admin#show stp mst_config_id
Command: show stp mst_config_id

Current MST Configuration Identification
-----

Configuration Name : 00-22-22-22-22-00                Revision Level :0
MSTI ID      Vid list
-----      -
    CIST      1-4094

DGS-3000-26TC:admin#
```

57-10 config stp mst_ports

Description

This command is used to configure the ports management parameters.

Format

config stp mst_ports <portlist> instance_id <value 0-7> {internalCost [auto | <value 1-200000000>] | priority <value 0-240>}

Parameters

mst_ports	- Specify to be distinguished from the parameters of ports only at CIST level.
<portlist>	- Enter a list of ports used for the configuration here.
instance_id	- Specify the instance ID used.
<value 0-7>	- Enter the instance ID used here. This value must be between 0 and 7.
internalCost	- (Optional) Specify the port path cost used in MSTP.
auto	- Specify that the internal cost value will be set to auto.
<value 1-200000000>	- Enter the internal cost value here. This value must be between 1 and 200000000.
priority	- (Optional) Specify the port priority value.
<value 0-240>	- Enter the port priority value here. This value must be between 0 and 240.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure STP MST ports:

```
DGS-3000-26TC:admin#config stp mst_ports 1 instance_id 0 internalCost auto
Command: config stp mst_ports 1 instance_id 0 internalCost auto

Success.

DGS-3000-26TC:admin#
```

57-11 config stp ports

Description

This command is used to configure all the parameters of ports, except for Internal Path Cost and Port Priority.

Format

```
config stp ports <portlist> {externalCost [auto | <value 1-200000000>] | hellotime <value 1-2> | migrate [yes | no] | edge [true | false | auto] | p2p [true | false | auto] | state [enable | disable] | restricted_role [true | false] | restricted_tcn [true | false] | fbpdu [enable | disable]}
```

Parameters

<portlist> - Enter a list of ports used for the configuration here.
externalCost - (Optional) The path cost between MST regions from the transmitting Bridge to the CIST Root Bridge. It is only used at CIST level. auto - Specify that the external cost value will be set to automatic. <value 1-200000000> - Enter the external cost value here. This value must be between 1 and 200000000.
hellotime - (Optional) The default value is 2 . This parameter is for MSTP version. For STP and RSTP version, uses the per system hellotime parameter. <value 1-2> - Enter the hello time value here. This value must be between 1 and 2.
migrate - (Optional) Operation of management in order to specify the port to send MSTP BPDU for a delay time. yes - Specify that the MSTP BPDU for a delay time will be sent. no - Specify that the MSTP BPDU for a delay time will not be sent.
edge - (Optional) To decide if this port is connected to a LAN or a Bridged LAN. true - Specify that the specified port(s) is edge. false - Specify that the specified port(s) is not edge. auto - In auto mode, the bridge will delay for a period to become edge port if no bridge BPUD is received. The default is auto mode.
p2p - (Optional) To decide if this port is in Full-Duplex or Half-Duplex mode. true - Specify that the port(s) is in Full-Duplex mode. false - Specify that the port(s) is in Half-Duplex mode. auto - Specify that the port(s) is in Full-Duplex and Half-Duplex mode.
state - (Optional) To decide if this port supports the STP functionality. enable - Specify that STP functionality on the port(s) is enabled. disable - Specify that STP functionality on the port(s) is disabled.
restricted_role - (Optional) To decide if this port not to be selected as Root Port. The default value is false. true - Specify that the port can be specified as the root port. false - Specify that the port can not be specified as the root port.
restricted_tcn - (Optional) To decide if this port not to propagate topology change. The default value is false. true - Specify that the port can be set to propagate a topology change. false - Specify that the port can not be set to propagate a topology change.
fbpdu - (Optional) To decide if this port will flood STP BPDU when STP functionality is disabled. When the state is set to enable, the received BPDU will be forwarded. When the state is set to disable, the received BPDU will be dropped. enable - Specify that the port can be set to flood the STP BPDU when the STP functionality is disabled. disable - Specify that the port can not be set to flood the STP BPDU when the STP functionality is disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure STP ports:

```
DGS-3000-26TC:admin#config stp ports 1 externalCost auto
Command: config stp ports 1 externalCost auto

Success.

DGS-3000-26TC:admin#
```

57-12 show stp ports

Description

This command is used to show the port information includes parameters setting and operational value.

Format

show stp ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a list of ports to be displayed.

Restrictions

None.

Example

To show STP ports:

```
DGS-3000-26TC:admin#show stp ports
Command: show stp ports

MSTP Port Information
-----
Port Index      : 1      , Hello Time: 2 / 2 , Port STP : Enabled ,
External PathCost : Auto/200000 , Edge Port : Auto /No , P2P : Auto /Yes
Port RestrictedRole : False, Port RestrictedTCN : False
Port Forward BPDU : Disabled
MSTI   Designated Bridge   Internal PathCost   Prio   Status       Role
-----
0      N/A                  200000              128    Forwarding   NonStp

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

57-13 config stp priority

Description

This command is used to configure the instance priority.

Format

config stp priority <value 0-61440> instance_id <value 0-7>

Parameters

<value 0-61440> - Enter the bridge priority value here. This value must be divisible by 4096. This value must be between 0 and 61440.

instance_id - Identifier to distinguish different STP instances.

<value 0-7> - Enter the STP instance ID here. This value must be between 0 and 7.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the STP instance ID:

```
DGS-3000-26TC:admin#config stp priority 61440 instance_id 0
Command: config stp priority 61440 instance_id 0

Success.

DGS-3000-26TC:admin#
```

57-14 config stp version

Description

This command is used to configure the STP version.

Format

config stp version [mstp | rstp | stp]

Parameters

mstp - Multiple Spanning Tree Protocol.

rstp - Rapid Spanning Tree Protocol. This is the default option.

stp - Spanning Tree Protocol.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure STP version:

```
DGS-3000-26TC:admin#config stp version mstp
Command: config stp version mstp

Success.

DGS-3000-26TC:admin#
```

To config STP version with the same value of old configuration:

```
DGS-3000-26TC:admin#config stp version mstp
Command: config stp version mstp

Configure value is the same with current value.
Success.

DGS-3000-26TC:admin#
```

57-15 show stp instance

Description

This command is used to display each instance parameters settings. Value means the instance ID, if there is no input of this value, all instance will be shown.

Format

show stp instance {<value 0-7>}

Parameters

<value 0-7> - (Optional) Enter the MSTP instance ID value here. This value must be between 0 and 7.

Restrictions

None.

Example

To show STP instance:

```
DGS-3000-26TC:admin#show stp instance
```

```
Command: show stp instance
```

```
STP Instance Settings
```

```
-----
```

```
Instance Type       : CIST  
Instance Status    : Enabled  
Instance Priority   : 32768(bridge priority : 32768, sys ID ext : 0 )
```

```
STP Instance Operational Status
```

```
-----
```

```
Designated Root Bridge : 32768/00-22-22-22-22-00  
External Root Cost     : 0  
Regional Root Bridge   : 32768/00-22-22-22-22-00  
Internal Root Cost     : 0  
Designated Bridge      : 32768/00-22-22-22-22-00  
Root Port              : None  
Max Age                 : 20  
Forward Delay          : 15  
Last Topology Change   : 2430  
Topology Changes Count : 0
```

```
DGS-3000-26TC:admin#
```

Chapter 58 ND Spoofing Prevention Command List

```
config nd_spoofing_prevention [add gateway_ip <ipv6addr> gateway_mac <macaddr> ports [<portlist> | all] |
delete gateway_ip <ipv6addr>]
show nd_spoofing_prevention
```

58-1 config nd_spoofing_prevention

Description

This command is used to configure the spoofing prevention entry to prevent spoofing of MAC for the protected gateway.

Format

```
config nd_spoofing_prevention [add gateway_ip <ipv6addr> gateway_mac <macaddr> ports [<portlist> |
all] | delete gateway_ip <ipv6addr>]
```

Parameters

```
add - Specify to add an ND spoofing prevention entry.
gateway_ip - Specify the gateway IP address to be added.
  <ipv6addr> - Enter the IPv6 gateway IP address.
gateway_mac - Specify the gateway MAC address to be added.
  <macaddr> - Enter the gateway MAC address.
ports - Specify a port range.
  <portlist> - Enter a range of ports to be configured.
  all - Specify all of ports to be configured.
delete - Specify to delete an ND spoofing prevention entry.
gateway_ip - Specify the gateway IP address to be deleted.
  <ipv6address> - Enter the gateway IPv6 address.
```

Restrictions

Only Administrators and Operators can issue this command.

Example

This command is used to display the ND spoofing prevention entry.

```
DGS-3000-26TC:admin# config nd_spoofing_prevention add gateway_ip
2001:2002:2003:2004:2005:2006:2007:2008 gateway_mac 00-00-00-22-33-44 ports 2
Command: config nd_spoofing_prevention add gateway_ip 2001:2002:2003:2004:2005:2006:2007:2008
gateway_mac 00-00-00-22-33-44 ports 2

Success.

DGS-3000-26TC:admin#
```

58-2 show nd_spoofing_prevention

Description

This command is used to display the nd spoofing prevention entry.

Format

`show nd_spoofing_prevention`

Parameters

None.

Restrictions

None.

Example

To show the command logging configuration status:

```
DGS-3000-26TC:admin#show nd_spoofing_prevention
Command: show nd_spoofing_prevention

Gateway IP                Gateway MAC                Ports
-----
FF::11                    00-01-02-03-04-06 3

Total Entries: 1

DGS-3000-26TC:admin#
```

Chapter 59 Network Load Balancing (NLB) Command List

```

create nlb unicast_fdb <macaddr>
config nlb unicast_fdb <macaddr>[add|delete]<portlist>
delete nlb unicast_fdb <macaddr>
create nlb multicast_fdb [<vlan_name 32> | vlanid <vlanid>] <macaddr>
config nlb multicast_fdb [<vlan_name 32> | vlanid <vlanid>] <macaddr> [add | delete] <portlist>
delete nlb multicast_fdb [<vlan_name 32> | vlanid <vlanid>] <macaddr>
show nlb fdb

```

59-1 create nlb unicast_fdb

Description

This command is used to create the NLB unicast FDB entry.

The network load balancing command set is used to support the Microsoft server load balancing application where multiple servers can share the same IP address and MAC address. The requests from clients will be forwarded to all servers, but will only be processed by one of them. The server can work in two different modes – unicast mode and multicast mode. In unicast mode, the client use unicast MAC address as the destination MAC to reach the server. In multicast mode, the client use the multicast MAC address as the destination MAC to reach the server. Regarding of the mode, this destination Mac is the named the shared MAC. The server uses its own MAC address (rather than the shared MAC) as the source MAC address of the reply packet.

Format

```
create nlb unicast_fdb <macaddr>
```

Parameters

<macaddr> - Enter the MAC address of the NLB unicast FDB entry to be created.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create an NLB unicast MAC forwarding entry, for the product that support the VLAN information on the unicast forwarding:

```

DGS-3000-26TC:admin#create nlb unicast_fdb 02-bf-01-01-01-01
Command: create nlb unicast_fdb 02-BF-01-01-01-01

Success.

DGS-3000-26TC:admin#

```

59-2 config nlb unicast_fdb

Description

This command is used to add or delete the forwarding ports for the specified NLB unicast FDB entry.

Format

```
config nlb unicast_fdb <macaddr> [add | delete] <portlist>
```

Parameters

<macaddr> - Enter the MAC address of the NLB unicast FDB entry to be configured.

add - Specify to add the ports.

delete - Specify to delete the ports.

<portlist> - Enter a list of forwarding ports to be added or removed.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure NLB unicast FDB entry, for the product that support the VLAN information on the unicast forwarding:

```
DGS-3000-26TC:admin#config nlb unicast_fdb 02-bf-01-01-01-01 add 1-5
Command: config nlb unicast_fdb 02-BF-01-01-01-01 add 1-5

Success.

DGS-3000-26TC:admin#
```

59-3 delete nlb unicast_fdb**Description**

This command is used to delete the NLB unicast FDB entry.

Format

```
delete nlb unicast_fdb <macaddr>
```

Parameters

<macaddr> - Enter the MAC address of the NLB unicast FDB entry to be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the NLB unicast FDB entry, for the product that support the VLAN information on the unicast forwarding:

```
DGS-3000-26TC:admin#delete nlb unicast_fdb 02-bf-01-01-01-01
Command: delete nlb unicast_fdb 02-BF-01-01-01-01

Success.

DGS-3000-26TC:admin#
```

59-4 create nlb multicast_fdb

Description

This command is used to create a NLB multicast FDB entry.

The NLB multicast FDB entry will be mutual exclusive with the L2 multicast entry.

Format

create nlb multicast_fdb [**<vlan_name 32>** | **vlanid <vlanid>**] **<macaddr>**

Parameters

<vlan_name 32> - Enter the VLAN name here. The VLAN name can be up to 32 characters long.

vlanid - Specify the VLAN by the VLAN ID.

<vlanid> - Enter the VLAN ID here.

<macaddr> - Enter the MAC address of the NLB multicast FDB entry to be created.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a NLB multicast FDB entry:

```
DGS-3000-26TC:admin#create nlb multicast_fdb default 03-bf-01-01-01-01
Command: create nlb multicast_fdb default 03-bf-01-01-01-01

Success.

DGS-3000-26TC:admin#
```

59-5 config nlb multicast_fdb

Description

This command is used to add or delete the forwarding ports for the specified NLB multicast FDB entry.

Format

config nlb multicast_fdb [**<vlan_name 32>** | **vlanid <vlanid>**] **<macaddr>** [**add | delete**] **<portlist>**

Parameters

<vlan_name 32> - Enter the VLAN of the NLB multicast FDB entry to be configured.

vlanid - Specify the VLAN by the VLAN ID.

<vlanid> - Enter the VLAN ID here.

<macaddr> - Enter the Mac address of the NLB multicast FDB entry to be configured.

add - Specify a list of forwarding ports to be added.

delete - Specify a list of forwarding ports to be deleted.

<portlist> - Enter the list of ports used for this configuration.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure NLB multicast MAC forwarding database:

```
DGS-3000-26TC:admin#config nlb multicast_fdb default 03-bf-01-01-01-01 add 1-5
Command: config nlb multicast_fdb default 03-bf-01-01-01-01 add 1-5

Success.

DGS-3000-26TC:admin#
```

59-6 delete nlb multicast_fdb**Description**

This command is used to delete the NLB multicast FDB entry.

Format

delete nlb multicast_fdb [<vlan_name 32> | vlanid <vlanid>] <macaddr>

Parameters

<vlan_name 32> - Enter the VLAN of the NLB multicast FDB entry to be deleted.
vlanid - Specify the VLAN by VLAN ID.
<vlanid> - Enter the VLAN ID here.
<macaddr> - Enter the MAC address of the NLB multicast FDB entry to be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete NLB multicast FDB entry:

```
DGS-3000-26TC:admin#delete nlb multicast_fdb default 03-bf-01-01-01-01
Command: delete nlb multicast_fdb default 03-bf-01-01-01-01

Success.

DGS-3000-26TC:admin#
```

59-7 show nlb fdb**Description**

This command is used to show the NLB Configured entry.

Format

show nlb fdb

Parameters

None.

Restrictions

None.

Example

To display the NLB forwarding table:

```
DGS-3000-26TC:admin#show nlb fdb
Command: show nlb fdb

MAC Address          VLAN ID   Egress Ports
-----
02-BF-01-01-01-01 -      1-5

Total Entries :1

DGS-3000-26TC:admin#
```

Chapter 60 Network Monitoring Command List

clear counters {ports <portlist>}

show error ports <portlist>

show packet ports <portlist>

show utilization [cpu | ports]

show utilization dram

show utilization flash

60-1 clear counters

Description

This command is used to clear the Switch's statistics counters.

Format

clear counters {ports <portlist>}

Parameters

ports - (Optional) Specify a range of ports to be configured.

<portlist> - Enter a list of ports used for the configuration here.

If no parameter is specified, system will display counters of all the ports .

Restrictions

Only Administrators and Operators can issue this command.

Example

To clear the Switch's statistics counters:

```
DGS-3000-26TC:admin#clear counters ports 7-9
```

```
Command: clear counters ports 7-9
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

60-2 show error ports

Description

This command is used to display the error statistics for a range of ports.

Format

show errors ports <portlist>

Parameters**<portlist>** - Enter a range of ports to be displayed.**Restrictions**

None.

Example

To display the errors of the port:

```
DGS-3000-26TC:admin#show error ports 3
Command: show error ports 3

Port Number : 3

          RX Frames                                TX Frames
          -----                                -----
CRC Error    0                                Excessive Deferral  0
Undersize    0                                CRC Error            0
Oversize     0                                Late Collision       0
Fragment     0                                Excessive Collision  0
Jabber       0                                Single Collision     0
Drop Pkts    0                                Collision            0
Symbol Error  0

CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

60-3 show packet ports**Description**

This command is used to display statistics about the packets sent and received by the Switch.

Format**show packet ports <portlist>****Parameters****<portlist>** - Enter a range of ports to be displayed.**Restrictions**

None.

Example

To display the packets analysis for port 7:


```
DGS-3000-26TC:admin#show packet ports 7
```

```
Command: show packet ports 7
```

```
Port Number : 7
```

```
=====
```

Frame Size/Type	Frame Counts	Frames/sec
64	0	0
65-127	0	0
128-255	0	0
256-511	0	0
512-1023	0	0
1024-1518	0	0
Unicast RX	0	0
Multicast RX	0	0
Broadcast RX	0	0

Frame Type	Total	Total/sec
RX Bytes	0	0
RX Frames	0	0
TX Bytes	0	0
TX Frames	0	0

```
CTRL+C ESC q Quit SPACE n Next Page p Previous Page r Refresh
```

60-4 show utilization

Description

This command is used to display real-time CPU or port utilization statistics.

Format

show utilization [cpu | ports]

Parameters

cpu - Specify to display information regarding the CPU.

ports - Specify all ports to be displayed.

Restrictions

None.

Example

To display the ports utilization:

```
DGS-3000-26TC:admin#show utilization ports
```

```
Command: show utilization ports
```

Port	TX/sec	RX/sec	Util	Port	TX/sec	RX/sec	Util
1	0	0	0	21	0	0	0
2	0	0	0	22	0	0	0
3	0	0	0	23	0	0	0
4	0	0	0	24	0	0	0
5	0	0	0	25	0	0	0
6	0	0	0	26	0	0	0
7	0	0	0				
8	0	0	0				
9	0	0	0				
10	0	0	0				
11	0	0	0				
12	0	0	0				
13	0	0	0				
14	0	0	0				
15	0	0	0				
16	0	0	0				
17	0	0	0				
18	0	0	0				
19	0	0	0				
20	0	0	0				

```
DGS-3000-26TC:admin#
```

To display the CPU utilization:

```
DGS-3000-26TC:admin#show utilization cpu
```

```
Command: show utilization cpu
```

```
CPU Utilization
```

```
-----
Five seconds - 10 %           One minute - 10 %           Five minutes - 10 %
```

```
CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

60-5 show utilization dram

Description

This command is used to show DRAM memory utilization.

Format

```
show utilization dram
```

Parameters

None.

Restrictions

None.

Example

To display DRAM utilization:

```
DGS-3000-26TC:admin#show utilization dram
Command: show utilization dram
```

```
DRAM Utilization :
  Total DRAM      : 262144   KB
  Used DRAM       : 129628   KB
  Utilization     : 49 %
```

```
CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

60-6 show utilization flash

Description

This command is used to show the flash memory utilization.

Format

show utilization flash

Parameters

None.

Restrictions

None.

Example

To display FLASH utilization:

```
DGS-3000-26TC:admin#show utilization flash
Command: show utilization flash
```

```
Flash Memory Utilization :
  Total Flash      : 29618   KB
  Used Flash       : 5784    KB
  Utilization     : 19 %
```

```
CTRL+C  ESC  q  Quit  SPACE  n  Next Page  p  Previous Page  r  Refresh
```

Chapter 61 OAM Command List

```

config ethernet_oam ports [<portlist> | all ] [mode [active | passive] | state [enable | disable] | link_monitor
  [error_symbol {threshold <range 0-4294967295> | window <millisecond 1000-60000> | notify_state [enable |
  disable]](1) | error_frame {threshold <range 0-4294967295> | window <millisecond 1000-60000> | notify_state
  [enable | disable]](1) | error_frame_seconds {threshold <range 1-900> | window <millisecond 10000-900000> |
  notify_state [enable | disable]](1) | error_frame_period {threshold <range 0-4294967295> | window <number
  148810-100000000> | notify_state [enable | disable]](1) ] critical_link_event [dying_gasp | critical_event]
  notify_state [enable | disable] | remote_loopback [start | stop] | received_remote_loopback [process | ignore]]
show ethernet_oam ports {<portlist>} [status | configuration | statistics | event_log {index <value_list>}]
clear ethernet_oam ports [<portlist> | all] [event_log | statistics]

```

61-1 config ethernet_oam ports

Description

This command is used to configure Ethernet OAM. The parameter to configure port Ethernet OAM mode operates in active or passive mode. The following two actions are allowed by ports in active mode, but disallowed by ports in passive mode: Initiate OAM discovery and start or stop remote loopback. Note that when a port is OAM-enabled, changing the OAM mode will cause the OAM discovery to be re-started.

The command used to enable or disable port's Ethernet OAM function. The parameter enabling a port's OAM will cause the port to start OAM discovery. If a port's is active, it initiates the discovery. Otherwise it reacts to the discovery received from peer. Disabling a port's OAM will cause the port to send out a dying gasp event to peers and then disconnect the established OAM link.

The link monitoring parameter is used to configure port Ethernet OAM link monitoring error symbols. The link monitoring function provides a mechanism to detect and indicate link faults under a variety of conditions. OAM monitors the statistics on the number of frame errors as well as the number of coding symbol errors. When the number of symbol errors is equal to or greater than the specified threshold in a period and the event notification state is enabled, it generates an error symbol period event to notify the remote OAM peer. The Ethernet OAM link monitoring error frames parameter provides a mechanism to detect and indicate link faults under a variety of conditions. OAM monitors the counter on the number of frame errors as well as the number of coding symbol errors. When the number of frame errors is equal to or greater than the specified threshold in a period and the event notification state is enabled, it generates an error frame event to notify the remote OAM peer.

The link event parameter configures the capability of the Ethernet OAM critical link event. If the capability for an event is disabled, the port will never send out the corresponding critical link event. This command is used to configure the client to process or to ignore the received Ethernet OAM remote loopback command. In remote loopback mode, all user traffic will not be processed. Ignoring the received remote loopback command will prevent the port from entering remote loopback mode.

Format

```

config ethernet_oam ports [<portlist> | all ] [mode [active | passive] | state [enable | disable] | link_monitor
  [error_symbol {threshold <range 0-4294967295> | window <millisecond 1000-60000> | notify_state [enable |
  disable]](1) | error_frame {threshold <range 0-4294967295> | window <millisecond 1000-60000> |
  notify_state [enable | disable]](1) | error_frame_seconds {threshold <range 1-900> | window <millisecond
  10000-900000> | notify_state [enable | disable]](1) | error_frame_period {threshold <range 0-4294967295> |
  window <number 148810-100000000> | notify_state [enable | disable]](1) ] critical_link_event [dying_gasp |
  critical_event] notify_state [enable | disable] | remote_loopback [start | stop] | received_remote_loopback
  [process | ignore]]

```

Parameters

<portlist> - Enter a range of ports to be configured.

all - Specify all ports to be configured.

mode - Specify the operation mode. The default mode is active.

active - Specify to operate in active mode.

passive - Specify to operate in passive mode.

state - Specify the OAM function status.

enable - Specify to enable the OAM function.

disable - Specify to disable the OAM function.

link_monitor - Specify to detect and indicate link faults under a variety of conditions.

error_symbol - Specify to generate an error symbol period event to notify the remote OAM peer.

threshold - Specify the number of symbol errors in the period that is required to be equal to or greater than in order for the event to be generated. The default value of threshold is 1 symbol error.

<range 0-4294967295> - Enter the range from 0 to 4294967295.

window - The range is 1000 to 60000 ms. The default value is 1000ms.

<millisecond 1000-60000> - Enter a value in a range from 1000 to 60000 ms.

notify_state - Specify the event notification status. The default state is enable.

enable - Specify to enable event notification.

disable - Specify to disable event notification.

error_frame - Specify the error frame.

threshold - Specify a threshold range.

<range 0-4294967295> - Enter a threshold range between 0 and 4294967295.

window - The range is 1000 to 60000 ms. The default value is 1000ms.

<millisecond 1000-60000> - Enter a value within the range between 1000 to 60000 ms.

notify_state - Specify the event notification status. The default state is enable.

enable - Specify to enable event notification.

disable - Specify to disable event notification.

error_frame_seconds - Specify error frame time.

threshold - Specify a threshold range between 1 and 900.

<range 1-900> - Enter a threshold range between 1 and 900.

window - The range is 1000 to 900000 ms.

<millisecond 1000-900000> - Enter a value between the range 1000 to 900000 ms.

notify_state - Specify the event notification status. The default state is enable.

enable - Specify to enable event notification.

disable - Specify to disable event notification.

error_frame_period - Specify error frame period.

threshold - Specify a threshold range between 0 and 4294967295.

<range 0-4294967295> - Enter a threshold range between 0 and 4294967295.

window - The range is 148810 to 100000000 ms.

<number 148810-100000000> - Enter a range between 148810 to 100000000 ms.

notify_state - Specify the event notification status. The default state is enable.

enable - Specify to enable event notification.

disable - Specify to disable event notification.

critical_link_event - Specify critical link event.

dying_gasp - An unrecoverable local failure condition has occurred.

critical_event - An unspecified critical event has occurred.

notify_state - Specify the event notification status. The default state is enable.

enable - Specify to enable event notification.

disable - Specify to disable event notification.

remote_loopback - Specify remote loop.

start - If start is specified, it will request the peer to change to the remote loopback mode.

stop - If stop is specified, it will request the peer to change to the normal operation mode.

received_remote_loopback - Specify receive remote loop-back.

process - Specify to process the received Ethernet OAM remote loopback command.

ignore - Specify to ignore the received Ethernet OAM remote loopback command. This is the default.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure Ethernet OAM on ports 1 to 2 in active mode:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1-2 mode active
Command: config ethernet_oam ports 1-2 mode active

Success.

DGS-3000-26TC:admin#
```

To enable Ethernet OAM on port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 state enable
Command: config ethernet_oam ports 1 state enable

Success.

DGS-3000-26TC:admin#
```

To configure the error symbol threshold to 2 and period to 1000ms for port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 link_monitor error_symbol threshold 2 window
1000 notify_state enable
Command: config ethernet_oam ports 1 link_monitor error_symbol threshold 2 window 1000
notify_state enable

Success.

DGS-3000-26TC:admin#
```

To configure the error frame threshold to 2 and period to 1000 ms for port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 link_monitor error_frame threshold 2 window
1000 notify_state enable
Command: config ethernet_oam ports 1 link_monitor error_frame threshold 2 window 1000
notify_state enable

Success.

DGS-3000-26TC:admin#
```

To configure the error frame seconds threshold to 2 and period to 10000 ms for port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 link_monitor error_frame_seconds threshold 2
window 10000 notify_state enable
Command: config ethernet_oam ports 1 link_monitor error_frame_seconds threshold 2 window
10000 notify_state enable

Success.

DGS-3000-26TC:admin#
```

To configure the error frame threshold to 10 and period to 1000000 ms for port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 link_monitor error_frame_period threshold 10
window 1000000 notify_state enable
Command: config ethernet_oam ports 1 link_monitor error_frame_period threshold 10 window
1000000 notify_state enable

Success.

DGS-3000-26TC:admin#
```

To configure a dying gasp event for port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 critical_link_event dying_gasp notify_state
enable
Command: config ethernet_oam ports 1 critical_link_event dying_gasp notify_state enable

Success.

DGS-3000-26TC:admin#
```

To start remote loopback on port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 remote_loopback start
Command: config ethernet_oam ports 1 remote_loopback start

Success.

DGS-3000-26TC:admin#
```

To configure the method of processing the received remote loopback command as “process” on port 1:

```
DGS-3000-26TC:admin#config ethernet_oam ports 1 received_remote_loopback process
Command: config ethernet_oam ports 1 received_remote_loopback process

Success.

DGS-3000-26TC:admin#
```

61-2 show ethernet_oam ports

Description

This command is used to display Ethernet OAM information, including status, configuration, statistics, and event log, on specified ports.

The status information includes:

- OAM administration status: enabled or disabled.
- OAM operation status. It maybe the below value:
 - Disable: OAM is disabled on this port.
 - LinkFault: The link has detected a fault and is transmitting OAMPDUs with a link fault indication.
 - PassiveWait: The port is passive and is waiting to see if the peer device is OAM capable.
 - ActiveSendLocal: The port is active and is sending local information.
 - SendLocalAndRemote: The local port has discovered the peer but has not yet accepted or rejected the configuration of the peer.
 - SendLocalAndRemoteOk: The local device agrees the OAM peer entity.
 - PeeringLocallyRejected: The local OAM entity rejects the remote peer OAM entity.
 - PeeringRemotelyRejected: The remote OAM entity rejects the local device.
 - Operational: The local OAM entity learns that both it and the remote OAM entity have accepted the peering.

- NonOperHalfDuplex: Since Ethernet OAM functions are not designed to work completely over half-duplex port. This value indicates Ethernet OAM is enabled but the port is in half-duplex operation.
- OAM mode: passive or active.
- Maximum OAMPDU size: The largest OAMPDU that the OAM entity supports. OAM entities exchange maximum OAMPDU sizes and negotiate to use the smaller of the two maximum OAMPDU sizes between the peers.
- OAM configuration revision: The configuration revision of the OAM entity as reflected in the latest OAMPDU sent by the OAM entity. The config revision is used by OAM entities to indicate that configuration changes have occurred, which might require the peer OAM entity to re-evaluate whether OAM peering is allowed.
- OAM mode change.
- OAM Functions Supported: The OAM functions supported on this port. These functions include:
 - Unidirectional: It indicates that the OAM entity supports the transmission of OAMPDUs on links that are operating in unidirectional mode (traffic flowing in one direction only).
 - Loopback: It indicates that the OAM entity can initiate and respond to loopback commands.
 - Link Monitoring: It indicates that the OAM entity can send and receive Event Notification OAMPDUs.
 - Variable: It indicates that the OAM entity can send and receive variable requests to monitor the attribute value as described in the IEEE 802.3 Clause 30 MIB.

The event log displays Ethernet OAM event log information. The switch can buffer 1000 event logs. The event log is different from sys-log as it provides more detailed information than sys-log. Each OAM event will be recorded in both OAM event log and syslog.

Format

```
show ethernet_oam ports {<portlist>} [status | configuration | statistics | event_log {index <value_list>}]
```

Parameters

<portlist> - (Optional) Enter the range of ports to display.

status - Specify to display the Ethernet OAM status.

configuration - Specify to display the Ethernet OAM configuration.

statistics - Specify to display Ethernet OAM statistics.

event_log - Specify to display the Ethernet OAM event log information.

index - (Optional) Specify an index range to display.

<value_list> - (Optional) Enter an index range to display.

Restrictions

Only Administrators and Operators can issue this command.

Example

To display Ethernet OAM statistics information for port 1:


```

DGS-3000-26TC:admin#show ethernet_oam ports 1 statistics
Command: show ethernet_oam ports 1 statistics

Port 1
-----
Information OAMPDU TX           : 0
Information OAMPDU RX           : 0
Unique Event Notification OAMPDU TX : 0
Unique Event Notification OAMPDU RX : 0
Duplicate Event Notification OAMPDU TX: 0
Duplicate Event Notification OAMPDU RX: 0
Loopback Control OAMPDU TX      : 0
Loopback Control OAMPDU RX      : 0
Variable Request OAMPDU TX      : 0
Variable Request OAMPDU RX      : 0
Variable Response OAMPDU TX     : 0
Variable Response OAMPDU RX     : 0
Organization Specific OAMPDU TX : 0
Organization Specific OAMPDU RX : 0
Unsupported OAMPDU TX           : 0
Unsupported OAMPDU RX           : 0
Frames Lost Due To OAM          : 0

DGS-3000-26TC:admin#

```

61-3 clear ethernet_oam ports

Description

This command is used to clear Ethernet OAM information.

Format

clear ethernet_oam ports [<portlist> | all] [event_log | statistics]

Parameters

<portlist> - Enter a range of Ethernet OAM ports to be cleared.

all - Specify to clear all Ethernet OAM ports.

event_log - Specify to clear Ethernet OAM event log information.

statistics - Specify to clear Ethernet OAM statistics.

Restrictions

Only Administrators and Operators can issue this command.

Example

To clear port 1 OAM statistics:

```
DGS-3000-26TC:admin#clear ethernet_oam ports 1 statistics
Command: clear ethernet_oam ports 1 statistics

Success.

DGS-3000-26TC:admin#
```

To clear port 1 OAM events:

```
DGS-3000-26TC:admin#clear ethernet_oam ports 1 event_log
Command: clear ethernet_oam ports 1 event_log

Success.

DGS-3000-26TC:admin#
```

Chapter 62 Password Recovery Command List

enable password_recovery

disable password_recovery

show password_recovery

62-1 enable password_recovery

Description

This command is used to enable the password recovery mode.

Format

enable password_recovery

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable the password recovery mode:

```
DGS-3000-26TC:admin#enable password_recovery
Command: enable password_recovery

Success.

DGS-3000-26TC:admin#
```

62-2 disable password_recovery

Description

This command is used to disable the password recovery mode.

Format

disable password_recovery

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable the password recovery mode:

```
DGS-3000-26TC:admin#disable password_recovery
Command: disable password_recovery

Success.

DGS-3000-26TC:admin#
```

62-3 show password_recovery

Description

This command is used to display the password recovery state.

Format

show password_recovery

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To display the password recovery state:

```
DGS-3000-26TC:admin#show password_recovery
Command: show password_recovery

Running Configuration   : Enabled
NV-RAM Configuration   : Enabled

DGS-3000-26TC:admin#
```

Chapter 63 Peripherals Command List

show device_status

show environment

config temperature threshold {high <temperature -500-500> | low <temperature -500-500>}

config temperature [trap | log] state [enable | disable]

63-1 show device_status

Description

This command is used to display current status of fans on the system. An “OK” message is displayed when all of the fans are working properly. A “Fail” message is displayed when any of the fans failed. The failed fan number is included in the fail message.

Format

show device_status

Parameters

None.

Restrictions

None.

Example

To show device status:

```
DGS-3000-26TC:admin#show device_status
Command: show device_status

    Right Fan      : OK

DGS-3000-26TC:admin#
```

63-2 show environment

Description

This command is used to display the temperature status of the system.

Format

show environment

Parameters

None.

Restrictions

None.

Example

To display the device environment:

```
DGS-3000-26TC:admin#show environment
Command: show environment

Temperature Trap State      : Enabled
Temperature Log State      : Enabled
Current Temperature(Celsius) : 27
High Warning Temperature Threshold(Celsius) : 79
Low Warning Temperature Threshold(Celsius) : 11

DGS-3000-26TC:admin#
```

63-3 config temperature threshold**Description**

This command is used to configure the warning threshold for high and low temperature.

Format

config temperature threshold {high <temperature -500-500> | low <temperature -500-500>}

Parameters

high - (Optional) Specify to configure high threshold value. The high threshold must bigger than the low threshold.
<temperature -500-500> - Enter the high threshold temperature.

low - (Optional) Specify to configure low threshold value.
<temperature -500-500> - Enter the low threshold temperature.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the warning temperature threshold:

```
DGS-3000-26TC:admin#config temperature threshold high 80
Command: config temperature threshold high 80

Success.

DGS-3000-26TC:admin#
```

63-4 config temperature**Description**

This command is used to configure the trap state for temperature warning event.

Format

config temperature [trap | log] state [enable | disable]

Parameters

-
- trap** - Specify to enable or disable the trap state of the temperature warning event.
-
- log** - Specify to enable or disable the log state of the temperature warning event.
-
- state** - Specify to enable or disable the trap or log state of the temperature warning event.
- enable** - Specify to enable the trap or log state of the temperature warning event. This is the default option.
 - disable** - Specify to disable the trap or log state of the temperature warning event.
-

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the warning temperature trap state:

```
DGS-3000-26TC:admin#config temperature trap state enable
Command: config temperature trap state enable

Success.

DGS-3000-26TC:admin#
```

Chapter 64 Ping Command List

```
ping [<ipaddr> | <domain_name 255>] {times <value 1-255> | timeout <sec 1-99> | source_ip <ipaddr>}
```

```
ping6 [<ipv6addr> | <domain_name 255>] {times <value 1-255> | size <value 1-6000> | timeout <sec 1-99> | source_ip <ipv6addr>}
```

64-1 ping

Description

This command is used to send Internet Control Message Protocol (ICMP) echo messages to a remote IP address. The remote IP address will then “echo” or return the message. This is used to confirm connectivity between the Switch and the remote device.

Format

```
ping [<ipaddr> | <domain_name 255>] {times <value 1-255> | timeout <sec 1-99> | source_ip <ipaddr>}
```

Parameters

<ipaddr> - Enter the IP address of the host.

<domain_name 255> - Enter the domain name of the host.

times - (Optional) The number of individual ICMP echo messages to be sent. A value of 0 will send an infinite ICMP echo messages. The maximum value is 255. The default is 0, indicating infinity. Press the "CTRL+C" to break the ping test.

<value 1-255> - Enter the number of individual ICMP echo messages to be sent here. This value must be between 1 and 255.

timeout - (Optional) Defines the time-out period while waiting for a response from the remote device. A value of 1 to 99 seconds can be specified. The default is 1 second.

<sec 1-99> - Enter the time-out period here. This value must be between 1 and 99 seconds.

source_ip - (Optional) Specify the source IP of the ping packets. The IP address is used as the source IP address of the packets that send to the remote host.

<ipaddr> - Enter the IP address.

Restrictions

None.

Example

To send ICMP echo message to “10.51.17.1” for 4 times:

```
DGS-3000-26TC:admin#ping 10.51.17.1 times 4
Command: ping 10.51.17.1 times 4

Reply from 10.51.17.1, time<10ms
Reply from 10.51.17.1, time<10ms
Reply from 10.51.17.1, time<10ms
Reply from 10.51.17.1, time<10ms

Ping Statistics for 10.51.17.1
Packets: Sent =4, Received =4, Lost =0

DGS-3000-26TC:admin#
```


64-2 ping6

Description

This command is used to send IPv6 Internet Control Message Protocol (ICMPv6) echo messages to a remote IPv6 address. The remote IPv6 address will then “echo” or return the message. This is used to confirm the IPv6 connectivity between the Switch and the remote device.

Format

```
ping6 [<ipv6addr> | <domain_name 255>] {times <value 1-255> | size <value 1-6000> | timeout <sec 1-99> | source_ip <ipv6addr>}
```

Parameters

<ipv6addr>	- Enter the IPv6 address here.
<domain_name 255>	- Enter the domain name of the host.
times	- (Optional) The number of individual ICMPv6 echo messages to be sent. A value of 0 will send an infinite ICMPv6 echo messages. The maximum value is 255. The default is 0, indicating infinity. Press the "CTRL+C" to break the ping test.
<value 1-255>	- Enter the number of individual ICMPv6 echo messages to be sent here. This value must be between 1 and 255.
size	- (Optional) Size of the test packet.
<value 1-6000>	- Enter the size of the test packet here. This value must be between 1 and 6000.
timeout	- (Optional) Defines the time-out period while waiting for a response from the remote device.
<sec 1-99>	- Enter the time-out period here. This value must be between 1 and 99 seconds. The default is 1 second.
source_ip	- (Optional) Specify the source IPv6 of the ping packets. The IPv6 address is used as the source IPv6 address of the packets that send to the remote host.
<ipv6addr>	- Enter the IPv6 address.

Restrictions

None.

Example

To send ICMPv6 echo message to “3000::1” for 4 times:

```
DGS-3000-26TC:admin#ping6 3000::1 times 4
Command: ping6 3000::1 times 4

Reply from 3000::1, bytes=200, time<10ms
Reply from 3000::1, bytes=200, time<10ms
Reply from 3000::1, bytes=200, time<10ms
Reply from 3000::1, bytes=200, time<10ms

Ping Statistics for 3000::1
Packets: Sent =4, Received =4, Lost =0

DGS-3000-26TC:admin#
```

Chapter 65 Port Security Command List

config port_security system max_learning_addr [<max_lock_no 1-3328> no_limit]
config port_security ports [<portlist> all] [{admin_state [enable disable] max_learning_addr <max_lock_no 0-3328> lock_address_mode [permanent deleteontimeout deleteonreset]} (1)] {vlan [<vlan_name 32> vlanid <vidlist>] max_learning_addr [<max_lock_no 0-3328> no_limit]}(1)]
config port_security vlan [<vlan_name 32> vlanid <vidlist>] max_learning_addr [<max_lock_no 0-3328> no_limit]
delete port_security_entry [vlan <vlan_name 32> vlanid <vlanid 1-4094>] mac_address <macaddr>
clear port_security_entry {ports [<portlist> all] [{vlan <vlan_name 32> vlanid <vidlist>}]}
show port_security_entry {ports {<portlist>} [{vlan <vlan_name 32> vlanid <vidlist>}]}
show port_security {ports {<portlist>} [{vlan <vlan_name 32> vlanid <vidlist>}]}
enable port_security trap_log
disable port_security trap_log

65-1 config port_security system max_learning_addr

Description

This command is used to set the maximum number of port security entries that can be authorized system wide.

There are four levels of limitations on the learned entry number; for the entire system, for a port, for a VLAN, and for a specific VLAN on a port. If any limitation is exceeded, the new entry will be discarded.

The setting for system level maximum learned users must be greater than the total of maximum learned users allowed on all ports.

Format

config port_security system max_learning_addr [<max_lock_no 1-3328> | no_limit]

Parameters

<max_lock_no 1-3328> - Enter the maximum number of port security entries that can be learned by the system. If the setting is smaller than the number of current learned entries on all enabled ports, the command will be rejected. This value must be between 1 and 3328.

no_limit - No limitation on the number of port security entries that can be learned by the system. By default, the number is set to no_limit.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the maximum number of port security entries on the Switch to be 256:

```
DGS-3000-26TC:admin#config port_security system max_learning_addr 256
Command: config port_security system max_learning_addr 256

Success.

DGS-3000-26TC:admin#
```

65-2 config port_security ports

Description

This command is used to configure the admin state, the maximum number of addresses that can be learnt and the lock address mode.

There are four levels that limit the number of learned entries; the entire system, a port, a VLAN, and a specific VLAN on a port. If any limitation is exceeded, the new entry will be discarded.

Format

```
config port_security ports [<portlist> | all] [{admin_state [enable | disable] | max_learning_addr <max_lock_no 0-3328> | lock_address_mode [permanent | deleteontimeout | deleteonreset]} (1)] {vlan [<vlan_name 32> | vlanid <vidlist>] max_learning_addr [<max_lock_no 0-3328> | no_limit]}(1)
```

Parameters

<portlist> - Enter the list of port used for this configuration here.
all - Specify that all ports will be configured.
admin_state - (Optional) Specify the state of the port security function on the port. enable - Specify to enable the port security function on the port. disable - Specify to disable the port security function on the port. By default, the setting is disabled.
max_learning_addr - (Optional) Specify the maximum number of port security entries that can be learned on this port. If the value is set to 0, it means that no user can be authorized by the port security function on this port. If the setting is smaller than the number of current learned entries on the port, the command will be rejected. The default value is 32. <max_lock_no 0-3328> - Enter the maximum number of port security entries that can be learned here. This value must be between 0 and 3328.
lock_address_mode - (Optional) Indicates the lock address mode. The default mode is deleteonreset. permanent - The address will never be deleted unless the user removes it manually, the VLAN of the entry is removed, the port is removed from the VLAN, or port security is disabled on the port where the address resides. deleteontimeout - This entry will be removed if the entry is idle for the specified aging time. deleteonreset - This address will be removed if the Switch is reset or rebooted. Events that cause permanent entries to be deleted also apply to the deleteonreset entries.
vlan - (Optional) Specify the VLAN name used here. <vlan_name 32> - Enter the VLAN name used here. This name can be up to 32 characters long. vlanid - (Optional) Specify the VLAN ID used here. <vidlist> - Enter the VLAN ID used here.
max_learning_addr - (Optional) Specify the maximum learning address value. <max_lock_no 0-3328> - Enter the maximum learning address value here. This value must be between 0 and 3328. no_limit - Specify that the maximum learning address value will be set to no limit.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the port-based port security setting so that the maximum number of port security entries is restricted to 10, and the lock_address mode is set to permanent on port 6:

```
DGS-3000-26TC:admin#config port_security ports 6 admin_state enable max_learning_addr 10
lock_address_mode permanent
Command: config port_security ports 6 admin_state enable max_learning_addr 10
lock_address_mode permanent

Success.

DGS-3000-26TC:admin#
```

65-3 config port_security vlan

Description

This command is used to set the maximum number of port security entries that can be learned on a specific VLAN. There are four levels that limit the number of learned entries; the entire system, a port, a VLAN, and a specific VLAN on a port. If any limitation is exceeded, the new entry will be discarded.

Format

config port_security vlan [<vlan_name 32> | vlanid <vidlist>] max_learning_addr [<max_lock_no 0-3328> | no_limit]

Parameters

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - Specify a list of VLANs by VLAN ID.

<vidlist> - Enter the VLAN ID list here.

max_learning_addr - Specify the maximum number of port security entries that can be learned by this VLAN. If this parameter is set to 0, it means that no user can be authorized on this VLAN. If the setting is lower than the number of current learned entries on the VLAN, the command will be rejected. The default value is "no_limit"

<max_lock_no 0-3328> - Enter the maximum number of port security entries that can be learned here. This value must be between 0 and 3328.

no_limit - No limitation on the number of port security entries that can be learned by a specific VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the maximum number of VLAN-based port security entries on VLAN 1 to be 64:

```
DGS-3000-26TC:admin#config port_security vlan vlanid 1 max_learning_addr 64
Command: config port_security vlan vlanid 1 max_learning_addr 64

Success.

DGS-3000-26TC:admin#
```

65-4 delete port_security_entry

Description

This command is used to delete a port security entry.

Format

delete port_security_entry [vlan <vlan_name 32> | vlanid <vlanid 1-4094>] mac_address <macaddr>

Parameters

vlan - Specify the VLAN by VLAN name.
<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.
vlanid - Specify the VLAN by VLAN ID.
<vlanid 1-4094> - Enter the VLAN ID list here. This value must be between 1 and 4094.
mac_address - Specify the MAC address of the entry.
<macaddr> - Enter the MAC address used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the port security entry with a MAC address of 00-00-00-00-00-01 on VLAN 1:

```
DGS-3000-26TC:admin#delete port_security_entry vlanid 1 mac_address 00-00-00-00-00-01
Command: delete port_security_entry vlanid 1 mac_address 00-00-00-00-00-01

Success.

DGS-3000-26TC:admin#
```

65-5 clear port_security_entry

Description

This command is used to clear the MAC entries learned by the port security function.

Format

clear port_security_entry {ports [<portlist> | all] {[vlan <vlan_name 32> | vlanid <vidlist>]}}

Parameters

ports - (Optional) Specify the range of ports to be configured.
<portlist> - Enter the port security entries learned on the specified port.
all - All the port security entries learned by the system will be cleared.
vlan - (Optional) The port security entries learned on the specified VLANs will be cleared.
<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.
vlanid - (Optional) Specify a list of VLANs by VLAN ID.
<vidlist> - Enter the VLAN ID list here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear the port security entries on port 6:

```
DGS-3000-26TC:admin#clear port_security_entry ports 6
Command: clear port_security_entry ports 6

Success.

DGS-3000-26TC:admin#
```

65-6 show port_security_entry

Description

This command is used to display the port security entries.

If more than one parameter is selected, only the entries matching all the selected parameters will be displayed.

If the user Specify ports and VLAN (either the VLAN name or VLAN ID list), only the entries matching all the parameters will be displayed.

Format

show port_security_entry {ports {<portlist>} {[vlan <vlan_name 32> | vlanid <vidlist>]}}

Parameters

ports - (Optional) Specify the range of ports that will display the port security entries. While this parameter is null, to show the entries on all of the ports.

<portlist> - Enter the list of port used for this configuration here.

vlan - (Optional) Specify the name of the VLAN that the port security settings will be displayed for.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN that the port security entries will be displayed for.

<vidlist> - Enter the VLAN ID list here.

Restrictions

None.

Example

To show all the port security entries:

```
DGS-3000-26TC:admin#show port_security_entry
Command: show port_security_entry

MAC Address          VID   Port   Lock Mode
-----
00-00-00-00-00-01  1     25     DeleteOnTimeout

Total Entries: 1

DGS-3000-26TC:admin#
```

65-7 show port_security

Description

This command is used to display the port security related information, including state, maximum learned addresses and lock address mode on a port and/or on a VLAN.

If both ports and vlanid (or vlan_name) are specified, configurations matching any of these parameters will be displayed.

Format

```
show port_security {ports {<portlist>} [[vlan <vlan_name 32> | vlanid <vidlist>]]}
```

Parameters

ports - (Optional) Specify the range of ports that will show their configuration. While this parameter is null, to show the entries on all of the ports.

<portlist> - Enter the list of port used for this configuration here.

vlan - (Optional) Specify the name of the VLAN that will show its configuration.

<vlan_name 32> - Enter the VLAN name here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the ID of the VLAN that will show its configuration.

<vidlist> - Enter the VLAN ID list here.

Restrictions

None.

Example

To display the global configuration of port security:

```
DGS-3000-26TC:admin#show port_security
Command: show port_security

Port Security Trap/Log      : Disabled
System Maximum Address     : 256

VLAN Configuration (Only VLANs with limitation are displayed)
VID   VLAN Name                Max. Learning Addr.
----  -
1     default                    64

DGS-3000-26TC:admin#
```

65-8 enable port_security trap_log

Description

This command is used to enable port security traps/logs. When this command is enabled, if there's a new MAC that violates the pre-defined port security configuration, a trap will be sent out with the MAC and port information and the relevant information will be logged.

Format

```
enable port_security trap_log
```

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable a port security trap:

```
DGS-3000-26TC:admin#enable port_security trap_log
Command: enable port_security trap_log

Success.

DGS-3000-26TC:admin#
```

65-9 disable port_security trap_log

Description

This command is used to disable a port security trap/log. If the port security trap is disabled, no trap will be sent out for MAC violations, and no log will be recorded.

Format

disable port_security trap_log

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To prevent a port security trap from being sent from the switch:

```
DGS-3000-26TC:admin#disable port_security trap_log
Command: disable port_security trap_log

Success.

DGS-3000-26TC:admin#
```


Chapter 66 Power Saving Command List

config power_saving mode {length_detection link_detection led port hibernation} [enable disable]
config power_saving hibernation [[add delete] time_range <range_name 32> clear_time_range]
config power_saving led [[add delete] time_range <range_name 32> clear_time_range]
config power_saving port [<portlist> all] [[add delete] time_range <range_name 32> clear_time_range]
show power_saving {length_detection link_detection led port hibernation}
config led state [enable disable]
show led

66-1 config power_saving mode

Description

This command is used to set the power saving state.

For link detection and length detection function, they apply to the ports with copper media. If the power saving link detection state is enabled, the power is saved by following mechanisms:

- When no links are detected on the port, the port will automatically turn off and will only wake up the second a single link pulse is sent. While the port is turned off, a simple energy-detect circuit will continuously monitor energy on the cable. The moment energy is detected; the port will turn on fully as to the IEEE specification's requirements. The power saving function is performed while no link is detected and it will not affect the port capabilities while the link is up.
- When a link is detected on the port, for a shorter cable, the power consumption will be reduced by lowering the signal amplitude, since the signal attenuation is proportional to the cable length. The port will adjust the power based on the cable length and still maintain error free applications from both sides of the link. This mechanism is only available using the hardware support cable diagnostics function.

If the power saving state of port is disabled, all power saving schedules of port will not take effect.

If the power saving state of port LED is disabled, all power saving schedules of port LED will not take effect.

If the power saving state of system hibernation is disabled, all power saving schedules of system hibernation will not take effect.

Format

config power_saving mode {length_detection | link_detection | led | port | hibernation} [enable | disable]

Parameters

length_detection - (Optional) Specify the length detection used.
link_detection - (Optional) Specify the power saving link detection state.
led - (Optional) Specify to configure the power saving state of port LED.
port - (Optional) Specify to configure the power saving state of port.
hibernation - (Optional) Specify to configure the power saving state of system hibernation.
enable - Specify to enable power saving state.
disable - Specify to disable power saving state.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable the power saving state of port, hibernation:

```
DGS-3000-26TC:admin#config power_saving mode port hibernation enable
Command: config power_saving mode port hibernation enable

Success.

DGS-3000-26TC:admin#
```

66-2 config power_saving hibernation

Description

This command is used to add or delete the power saving schedule on system hibernation. When the system enters hibernation mode, the Switch changes to a low power state and is idle. It shuts down all the ports, and all network function does not work. Only the console connection will work via the RS232 port.

Format

config power_saving hibernation [[add | delete] time_range <range_name 32> | clear_time_range]

Parameters

add - Specify to add a time range.

delete - Specify to delete a time range.

time_range - Specify the name of the time range.

<range_name32> - Enter a name for maximum 32 characters.

clear_time_range - Specify to clear all the time range of system hibernation.

Restrictions

Only Administrators and Operators can issue this command.

Example

To add a time range named "range_1" on system hibernation:

```
DGS-3000-26TC:admin#config power_saving hibernation add time_range range_1
Command: config power_saving hibernation add time_range range_1

Success.

DGS-3000-26TC:admin#
```

66-3 config power_saving led

Description

This command is used to add or delete the power saving schedule on the LED of all ports. When any schedule is up, all port's LED will be turned off even device's LED working on PoE mode.

NOTE: The port LED admin state (configured using the command 'config led state') gets high priority. If the port LED admin state is disabled, all ports' LED will always be turned off. Currently only three time ranges are supported.

Format

config power_saving led [[add | delete] time_range <range_name 32> | clear_time_range]

Parameters

add - Specify to add a time range.

delete - Specify to delete a time range.

time_range - Specify the name of the time range.
<range_name32> - Enter a name for maximum 32 characters.

clear_time_range - Specify to clear all the time range of port LED.

Restrictions

Only Administrators and Operators can issue this command.

Example

To add a time range named “range_1” on port LED:

```
DGS-3000-26TC:admin#config power_saving led add time_range range_1
Command: config power_saving led add time_range range_1

Success.

DGS-3000-26TC:admin#
```

66-4 config power_saving port

Description

This command is used to add or delete the power saving schedule on the port. When any schedule is up, the specific port will be shut down (disabled).

NOTE: The port’s admin state has high priority. If the port’s admin state is disabled, the specific port will always be shut down (disabled). Currently only three time ranges are supported.

Format

config power_saving port [<portlist> | all] [[add | delete] time_range <range_name 32> | clear_time_range]

Parameters

<portlist> - Enter a range of ports.

all - Specify all ports.

add - Specify to add a time range.

delete - Specify to delete a time range.

time_range - Specify the name of the time range.
<range_name32> - Enter a name for maximum 32 characters.

clear_time_range - Specify to clear all the time range of port.

Restrictions

Only Administrators and Operators can issue this command.

Example

To add a time range named “range_1” on port 1:

```
DGS-3000-26TC:admin#config power_saving port 1 add time_range range_1
Command: config power_saving port 1 add time_range range_1

Success.

DGS-3000-26TC:admin#
```

To delete a time range named “range_2” on port 1:

```
DGS-3000-26TC:admin#config power_saving port 1 delete time_range range_2
Command: config power_saving port 1 delete time_range range_2

Success.

DGS-3000-26TC:admin#
```

66-5 show power_saving

Description

This command is used to display the current state of power saving.

Format

show power_saving {length_detection | link_detection | led | port | hibernation}

Parameters

length_detection - (Optional) Displays the length detection configuration of power saving.

link_detection - (Optional) Displays the link detection configuration of power saving.

led - (Optional) Displays the port LED configuration of power saving.

port - (Optional) Displays the port configuration of power saving.

hibernation - (Optional) Displays the system hibernation configuration of power saving.

If no parameter is specified, all configurations of power saving will be displayed.

Restrictions

None.

Example

To display the power saving function setting:

```

DGS-3000-26TC:admin#show power_saving
Command: show power_saving

Function Version: 3.00

Link Detection State: Enabled
Length Detection State: Disabled

Power Saving Configuration On System Hibernation
-----
State: Enabled
Time Range
-----
range_1

Power Saving Configuration On Port LED
-----
State: Disabled
Time Range
-----
range_1

Power Saving Configuration On Port
-----
State: Enabled
Port      Time Range
-----
1         range_1

DGS-3000-26TC:admin#

```

66-6 config led state

Description

This command is used to configure the LED admin state of all ports. When the port LED admin state is disabled, the LEDs of all ports are turned off. If the port LED admin state is enabled, the port LEDs are controlled by the ports' link status.

Format

config led state [enable | disable]

Parameters

enable - Specify to enable the LED admin state of all ports.

disable - Specify to disable the LED admin state of all ports.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable the LED admin state:

```
DGS-3000-26TC:admin#config led state disable
Command: config led state disable

Success.

DGS-3000-26TC:admin#
```

66-7 show led

Description

This command is used to display the setting of all port's LED admin state.

Format

show led

Parameters

None.

Restrictions

None.

Example

To display the setting of all port's LED admin state:

```
DGS-3000-26TC:admin#show led
Command: show led

Port LED State: Disabled

DGS-3000-26TC:admin#
```

Chapter 67 PPPoE Circuit ID Insertions

Command List

```
config pppoe circuit_id_insertion state [enable | disable]
```

```
config pppoe circuit_id_insertion ports <portlist> {state [enable | disable] | circuit_id [mac | ip | udf <string 32>]}(1)
```

```
show pppoe circuit_id_insertion
```

```
show pppoe circuit_id_insertion ports {<portlist>}
```

67-1 config pppoe circuit_id_insertion state

Description

This command is used to enable or disable PPPoE circuit ID insertion function. When both port and global state are enabled, the system will insert the circuit ID tag to the received PPPoE discover and request packet if the tag is absent, and remove the circuit ID tag from the received PPPoE offer and session confirmation packet. The insert circuit ID contains the following information: Client MAC address, Device ID and Port number. By default, Switch IP address is used as the device ID to encode the circuit ID option.

Format

```
config pppoe circuit_id_insertion state [enable | disable]
```

Parameters

enable - Specify to enable the PPPoE circuit ID insertion on the Switch.

disable - Specify to disable the PPPoE circuit ID insertion on the Switch. This is the default.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the PPPoE circuit insertion state:

```
DGS-3000-26TC:admin#config pppoe circuit_id_insertion state enable
Command: config pppoe circuit_id_insertion state enable

Success.

DGS-3000-26TC:admin#
```

67-2 config pppoe circuit_id_insertion ports

Description

This command is used to configure port's PPPoE Circuit ID insertion function. When the port's state and the global state are enabled, the system will insert the Circuit ID TAG to the received PPPoE discovery initiation and request packet if the TAG is absent, and remove the Circuit ID TAG from the received PPPoE offer and session confirmation packet.

Format

config pppoe circuit_id_insertion ports <portlist> {state [enable | disable] | circuit_id [mac | ip | udf <string 32>}}(1)

Parameters

<portlist> - Enter a list of ports to be configured.

state - Specify to enable or disable port's PPPoE circuit ID insertion function. The default setting is enable.

enable - Enables port's PPPoE circuit ID insertion function.

disable - Disables port's PPPoE circuit ID insertion function.

circuit_id - Specify to configure the device ID part for encoding of the circuit ID option.

mac - The MAC address of the Switch will be used to encode the circuit ID option.

ip - The Switch's IP address will be used to encode the circuit ID option. This is the default.

udf - A user specified string to be used to encode the circuit ID option.

<string 32> - Enter a string with the maximum length of 32.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable port 5 PPPoE circuit ID insertion function:

```
DGS-3000-26TC:admin#config pppoe circuit_id_insertion ports 5 state enable
Command: config pppoe circuit_id_insertion ports 5 state enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

67-3 show pppoe circuit_id_insertion**Description**

This command is used to display PPPoE circuit ID insertion status.

Format

show pppoe circuit_id_insertion

Parameters

None.

Restrictions

None.

Example

To display PPPoE circuit ID insertion status:


```
DGS-3000-26TC:admin#show pppoe circuit_id_insertion
Command: show pppoe circuit_id_insertion

Global PPPoE State: Enabled

DGS-3000-26TC:admin#
```

67-4 show pppoe circuit_id_insertion ports

Description

This command is used to display Switch's port PPPoE Circuit ID insertion configuration.

Format

show pppoe circuit_id_insertion ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a list of ports to be displayed.

Restrictions

None.

Example

To display port 2-5 PPPoE circuit ID insertion configuration:

```
DGS-3000-26TC:admin#show pppoe circuit_id_insertion ports 2-5
Command: show pppoe circuit_id_insertion ports 2-5

Port State      Circuit ID
-----
2   Enabled   Switch IP
3   Enabled   Switch IP
4   Enabled   Switch IP
5   Enabled   Switch IP

DGS-3000-26TC:admin#
```

Chapter 68 Protocol VLAN Command List

```

create dot1v_protocol_group group_id <id> {group_name <name 32>}
config dot1v_protocol_group [group_id <id> | group_name <name 32>] [add protocol [ethernet_2 |
ieee802.3_snap | ieee802.3_llc] <protocol_value> | delete protocol [ethernet_2 | ieee802.3_snap |
ieee802.3_llc] <protocol_value>]
delete dot1v_protocol_group [group_id <id> | group_name <name 32> | all]
show dot1v_protocol_group {[group_id <id> | group_name <name 32>]}
config port dot1v ports [<portlist> | all] [add protocol_group [group_id <id> | group_name <name 32>] [vlan
<vlan_name 32> | vlanid <id>] {priority <value 0-7>} | delete protocol_group [group_id <id> | all]]
show port dot1v {ports <portlist>}

```

68-1 create dot1v_protocol_group_id

Description

This command is used to create a protocol group for protocol VLAN function.

Format

```
create dot1v_protocol_group group_id < id> {group_name <name 32>}
```

Parameters

<id> - Enter the group ID used here.

group_name - (Optional) The name of the protocol group. The maximum length is 32 chars.

<name 32> - Enter the group name here. This name can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a protocol group:

```

DGS-3000-26TC:admin#create dot1v_protocol_group group_id 10 group_name General_Group
Command: create dot1v_protocol_group group_id 10 group_name General_Group

Success.

DGS-3000-26TC:admin#

```

68-2 config dot1v_protocol_group add protocol

Description

This command is used to add a protocol to a protocol group. The selection of a protocol can be a pre-defined protocol type or a user defined protocol.

Format

```
config dot1v_protocol_group [group_id <id> | group_name <name 32>] [add protocol [ethernet_2 |
ieee802.3_snap | ieee802.3_llc] <protocol_value> | delete protocol [ethernet_2 | ieee802.3_snap |
ieee802.3_llc] <protocol_value>]
```

Parameters

group_id - The ID of the protocol group which is used to identify a set of protocols. <id> - Enter the group ID used here.
group_name - The name of the protocol group. <name 32> - Enter the group name here. This name can be up to 32 characters long.
add - Specify that the protocol will be added to the specified group. protocol - The protocol value is used to identify a protocol of the frame type specified. ethernet_2 - Specify that the Ethernet 2 protocol will be used. ieee802.3_snap - Specify that the IEEE 802.3 Snap protocol will be used. ieee802.3_llc - Specify that the IEEE 802.3 LLC protocol will be used. <protocol_value> - Enter the protocol value here.
delete - Specify that the protocol will be removed from the specified group. protocol - The protocol value is used to identify a protocol of the frame type specified. ieee802.3_snap - Specify that the IEEE 802.3 Snap protocol will be used. ieee802.3_llc - Specify that the IEEE 802.3 LLC protocol will be used. <protocol_value> - Enter the protocol value here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a protocol IPv6 to protocol group 10:

```
DGS-3000-26TC:admin#config dot1v_protocol_group group_id 10 add protocol ethernet_2 86dd
Command: config dot1v_protocol_group group_id 10 add protocol ethernet_2 86DD

Success.

DGS-3000-26TC:admin#
```

68-3 delete dot1v_protocol_group

Description

This command is used to delete a protocol group.

Format

```
delete dot1v_protocol_group [group_id <id> | group_name <name 32> | all]
```

Parameters

group_id - Specify the group ID to be deleted. <id> - Enter the group ID used here.
group_name - Specify the name of the group to be deleted. <name 32> - Enter the group name here. This name can be up to 32 characters long.
all - Specify that all the protocol group will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete protocol group 100:

```
DGS-3000-26TC:admin#delete dot1v_protocol_group group_id 100
Command: delete dot1v_protocol_group group_id 100

Success.

DGS-3000-26TC:admin#
```

68-4 show dot1v_protocol_group

Description

This command is used to display the protocols defined in a protocol group.

Format

show dot1v_protocol_group {[group_id <id> | group_name <name 32>]}

Parameters

group_id - (Optional) Specify the ID of the group to be displayed.

<id> - Enter the group ID used here.

group_name - (Optional) Specify the name of the protocol group to be displayed.

<name 32> - Enter the group name here. This name can be up to 32 characters long.

If no group ID is specified, all the configured protocol groups will be displayed.

Restrictions

None.

Example

To display the protocol group ID 10:

```
DGS-3000-26TC:admin#show dot1v_protocol_group group_id 10
Command: show dot1v_protocol_group group_id 10

Protocol Group ID Protocol Group Name           Frame Type      Protocol Value
-----
10                General_Group   EthernetII      86DD

Total Entries: 1

DGS-3000-26TC:admin#
```

68-5 config port dot1v ports

Description

This command is used to assign the VLAN for untagged packets ingress from the port list based on the protocol group configured. This assignment can be removed by the **delete protocol_group** option.

When priority is not specified in the command, the port default priority will be the priority for those untagged packets classified by the protocol VLAN.

Format

```
config port dot1v ports [<portlist> | all] [add protocol_group [group_id <id> | group_name <name 32>]
[vlan <vlan_name 32> | vlanid <id>] {priority <value 0-7>} | delete protocol_group [group_id <id> | all]]
```

Parameters

<portlist>	- Enter a list of ports used for the configuration here.
all	- Specify that all the ports will be used for this configuration.
add	- Specify that the group specified will be added.
protocol_group	- Specify that parameters for the group will follow.
group_id	- Specify the group ID of the protocol group.
<id>	- Enter the group ID used here.
group_name	- Specify the name of the protocol group.
<name 32>	- Enter the name of the group used here. This name can be up to 32 characters long.
vlan	- The VLAN that is to be associated with this protocol group on this port.
<vlan_name 32>	- Enter the name of the VLAN here. This name can be up to 32 characters long.
vlanid	- Specify the VLAN ID.
<id>	- Enter the VLAN ID used here.
priority	- (Optional) Specify the priority to be associated with the packet which has been classified to the specified VLAN by the protocol.
<value 0-7>	- Enter the priority value here. This value must be between 0 and 7.
delete	- Specify that the group specified will be deleted.
protocol_group	- Specify that parameters for the group will follow.
group_id	- Specify the group ID of the protocol group.
<id>	- Enter the group ID used here.
all	- Specify that all the groups will be deleted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the group ID 10 on port 3 to be associated with VLAN marketing-1:

```
DGS-3000-26TC:admin#config port dot1v ports 3 add protocol_group group_id 10 vlan marketing-1
Command: config port dot1v ports 3 add protocol_group group_id 10 vlan marketing-1

Success.

DGS-3000-26TC:admin#
```

68-6 show port dot1v

Description

This command is used to display the VLAN to be associated with untagged packet ingressed from a port based on the protocol group.

Format**show port dot1v {ports <portlist>}****Parameters****ports** - (Optional) Specify a range of ports to be displayed.**<portlist>** - Enter a list of ports used for the configuration here.

If no port is specified, information for all ports will be displayed.

Restrictions

None.

Example

The example display the protocol VLAN information for ports 1:

```
DGS-3000-26TC:admin#show port dot1v ports 1
Command: show port dot1v ports 1

Port: 1
Protocol Group ID      VLAN Name                Protocol Priority
-----
1                      default                  -
2                      VLAN2                   -
3                      VLAN3                   -
4                      VLAN4                   -

Total Entries: 4

DGS-3000-26TC:admin#
```

Chapter 69 QinQ Command List

enable qinq
disable qinq
config qinq inner_tpid <hex 0x1 - 0xffff>

config qinq ports [<portlist> | all] {role [uni | nni] | missdrop [enable | disable] | outer_tpid <hex 0x1 - 0xffff> | add_inner_tag [<hex 0x1 - 0xffff> | disable]}

show qinq
show qinq inner_tpid
show qinq ports {<portlist>}

create vlan_translation ports [<portlist> | all] [add cvid <vidlist> | replace cvid <vlanid 1-4094>] svid <vlanid 1-4094> {priority <priority 0-7>}

delete vlan_translation ports [<portlist> | all] {cvid <vidlist>}

show vlan_translation [{ports <portlist> | cvid <vidlist>}]

69-1 enable qinq

Description

This command is used to enable QinQ. When QinQ is enabled, all network port roles will be NNI ports and outer TPID will be set to 0x88A8; all existing static VLANs will run as S-VLAN; all dynamic learned L2 address will be cleared; all dynamic registered VLAN entries will be cleared; and GVRP will be disabled.

To run GVRP on the Switch, the administrator should enable GVRP manually. In QinQ mode, GVRP protocol will employ reserve address 01-80-C2-00-00-0D.

Format

enable qinq

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable QinQ:

```
DGS-3000-26TC:admin#enable qinq
Command: enable qinq

Success.

DGS-3000-26TC:admin#
```

69-2 disable qinq

Description

This command is used to disable the QinQ. When QinQ is disabled, all dynamic learned L2 addresses will be cleared, all dynamic registered VLAN entries will be cleared, and GVRP will be disabled. To run GVRP on the Switch, the administrator should enable GVRP manually.

Format

disable qinq

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable QinQ:

```
DGS-3000-26TC:admin#disable qinq
Command: disable qinq

Success.

DGS-3000-26TC:admin#
```

69-3 config qinq inner_tpid

Description

This command is used to configure the inner TPID of the system. The inner TPID is used to decide if the ingress packet is c-tagged. Inner tag TPID is per system configurable.

Format

config qinq inner_tpid <hex 0x1-0xffff>

Parameters

<hex 0x1-0xffff> - Enter the inner-TPID of the system here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the inner TPID in the system to 0x9100:


```
DGS-3000-26TC:admin#config qinq inner_tpid 0x9100
Command: config qinq inner_tpid 0x9100

Success.

DGS-3000-26TC:admin#
```

69-4 config qinq ports

Description

This command is used to configure the QinQ port's parameters.

Format

```
config qinq ports [<portlist> | all] {role [uni | nni] | missdrop [enable | disable] | outer_tpid <hex 0x1 - 0xffff> | add_inner_tag [<hex 0x1 - 0xffff> | disable]}
```

Parameters

<portlist> - Enter the list of ports to be configured here.
all - Specify that all the ports will be used for the configuration.
role - (Optional) Specify the port role in QinQ mode. uni - Specify that the port is connecting to the customer network. nni - Specify that the port is connecting to the service provider network.
missdrop - (Optional) Specify the state of the miss drop of ports option. enable - Specify that the miss drop of ports option will be enabled. disable - Specify that the miss drop of ports option will be disabled.
outer_tpid - (Optional) Specify the outer-TPID of a port. <hex 0x1 - 0xffff> - Enter the outer-TPID value used here.
add_inner_tag - (Optional) Specify to add an inner tag for ingress untagged packets. If set, the inner tag will be added for the ingress untagged packets and therefore the packets that egress to the NNI port will be double tagged. If disable, only the s-tag will be added for ingress untagged packets. <hex 0x1 - 0xffff> - Enter the inner tag value used here. disable - Specify that the add inner tag option will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure port list 1-4 as NNI port and set the TPID to 0x88A8:

```
DGS-3000-26TC:admin#config qinq ports 1-4 role nni outer_tpid 0x88A8
Command: config qinq ports 1-4 role nni outer_tpid 0x88A8

Success.

DGS-3000-26TC:admin#
```

69-5 show qinq

Description

This command is used to display the global QinQ status.

Format

show qinq

Parameters

None.

Restrictions

None.

Example

To display the global QinQ status:

```
DGS-3000-26TC:admin#show qinq
Command: show qinq

  QinQ Status : Enabled

DGS-3000-26TC:admin#
```

69-6 show qinq inner_tpid

Description

This command is used to display the inner-TPID of a system.

Format

show qinq inner_tpid

Parameters

None.

Restrictions

None.

Example

To display the inner-TPID of a system:

```
DGS-3000-26TC:admin#show qinq inner_tpid
Command: show qinq inner_tpid

  Inner TPID: 0x9100

DGS-3000-26TC:admin#
```

69-7 show qinq ports

Description

This command is used to display the QinQ configuration of the ports.

Format

show qinq ports {<portlist>}

Parameters

<portlist> - (Optional) Enter the list of ports to be displayed here.

Restrictions

None.

Example

To show the QinQ mode for ports 1-2:

```
DGS-3000-26TC:admin#show qinq ports 1-2
Command: show qinq ports 1-2

Port ID:      1
-----
Role:          NNI
Miss Drop:     Disabled
Outer Tpid:    0x8100
Add Inner Tag: Disabled

Port ID:      2
-----
Role:          NNI
Miss Drop:     Disabled
Outer Tpid:    0x8100
Add Inner Tag: Disabled

DGS-3000-26TC:admin#
```

69-8 create vlan_translation ports

Description

This command is used to create a VLAN translation rule. This setting will not be effective when the QinQ mode is disabled.

This configuration is only effective for a UNI port. At UNI port, the ingress C-VLAN tagged packets will be translated to S-VLAN tagged packets by adding or replacing according the configured rule. The S-VLAN Tag of egress packets at this port will be recovered to C-VLAN Tag or stripped.

Format

create vlan_translation ports [<portlist> | all] [add cvid <vidlist> | replace cvid <vlanid 1-4094>] svid <vlanid 1-4094> {priority <priority 0-7>}

Parameters

<portlist> - Enter the list of ports to be configured here.
all - Specify that all the ports will be used for the configuration.
add - Specify to add an S-Tag to the packet.
cvid - Specify the customer VLAN ID used.
<vidlist> - Enter the customer VLAN ID used here.
replace - Specify to replace the C-Tag with the S-Tag.
cvid - Specify the customer VLAN ID used.
<vlanid 1-4094> - Enter the customer VLAN ID used here.
svid - Specify the service provider VLAN ID used.
<vlanid 1-4094> - Enter the service provider VLAN ID used here.
priority - (Optional) Specify to assign an 802.1p priority to the S-Tag. If the priority is not specified, the priority of the ports will be set to S-TAG by default.
<priority 0-7> - Enter the 802.1p S-Tag priority value here. This value must be between 0 and 7.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To replace the C-Tag in which the CVID is 20, with the S-Tag and the S-VID is 200 at UNI Port 1:

```
DGS-3000-26TC:admin#create vlan_translation ports 1 replace cvid 20 svid 200
Command: create vlan_translation ports 1 replace cvid 20 svid 200

Success.

DGS-3000-26TC:admin#
```

To add S-Tag, when the S-VID is 300, to a packet in which the CVID is 30 at UNI Port 1:

```
DGS-3000-26TC:admin#create vlan_translation ports 1 add cvid 30 svid 300
Command: create vlan_translation ports 1 add cvid 30 svid 300

Success.

DGS-3000-26TC:admin#
```

69-9 delete vlan_translation ports

Description

This command is used to delete translation relationships between the C-VLAN and the S-VLAN.

Format

delete vlan_translation ports [<portlist> | all] {cvid <vidlist>}

Parameters

<portlist> - Enter the list of ports to be configured here.
all - Specify that all the ports will be used for the configuration.
cvid - (Optional) Specify the rules for the specified CVIDs. If the CVID is not specified, all rules configured for the port will be deleted.
<vidlist> - Enter the CVID value here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a VLAN translation rule on ports 1-4:

```
DGS-3000-26TC:admin#delete vlan_translation ports 1-4
Command: delete vlan_translation ports 1-4

Success.

DGS-3000-26TC:admin#
```

69-10 show vlan_translation

Description

This command is used to display the existing C-VLAN-based VLAN translation rules.

Format

show vlan_translation {[ports <portlist> | cvid <vidlist>]}

Parameters

ports - (Optional) Specify a list of ports to be displayed.
 <portlist> - Enter the list of ports to be displayed here.

cvid - (Optional) Specify the rules for the specified CVIDs.
 <vidlist> - Enter the CVID value used here.

Restrictions

None.

Example

To show C-VLANs based on VLAN translation rules in the system:

```
DGS-3000-26TC:admin#show vlan_translation
Command: show vlan_translation

Port      CVID      SPVID      Action      Priority
-----
1         20        200        Replace     -
1         30        300        Add         -

Total Entries: 2

DGS-3000-26TC:admin#
```

Chapter 70 Quality of Service (QoS) Command List

config bandwidth_control [<portlist> all] {rx_rate [no_limit <value 64-10240000>] tx_rate [no_limit <value 64-10240000>]}
show bandwidth_control {<portlist>}
config per_queue bandwidth_control {ports [<portlist> all]} <cos_id_list 0-7> {{min_rate [no_limit <value 64-10240000>]} max_rate [no_limit <value 64-10240000>}(1)}
show per_queue bandwidth_control {<portlist>}
config scheduling {ports [<portlist> all]} <class_id 0-7> [strict weight <value 1-127>]
config scheduling_mechanism {ports [<portlist> all]} [strict wrr wdr]
show scheduling {<portlist>}
show scheduling_mechanism {<portlist>}
config 802.1p user_priority <priority 0-7> <class_id 0-7>
show 802.1p user_priority
config 802.1p default_priority [<portlist> all] <priority 0-7>
show 802.1p default_priority {<portlist>}
config 802.1p map {[<portlist> all]} 1p_color <priority_list> to [green red yellow]
show 802.1p map 1p_color {<portlist>}
config dscp trust [<portlist> all] state [enable disable]
show dscp trust {<portlist>}
config dscp map {[<portlist> all]} [dscp_priority <dscp_list> to <priority 0-7> dscp_dscp <dscp_list> to <dscp 0-63> dscp_color <dscp_list> to [green red yellow]]
show dscp map {<portlist>} [dscp_priority dscp_dscp dscp_color] {dscp <dscp_list>}
show 802.1p queue statistics port <port>

70-1 config bandwidth_control

Description

This command is used to configure the port bandwidth limit control.

Format

```
config bandwidth_control [<portlist> | all] {rx_rate [no_limit | <value 64-10240000>] | tx_rate [no_limit | <value 64-10240000>]}
```

Parameters

<portlist> - Enter a range of ports to be configured.
all - Specify that all the ports will be used for this configuration.
rx_rate - (Optional) Specify the limitation applied to receive data rate.
no_limit - Indicates there is no limit on receiving bandwidth of the configured ports. An integer value from m to n sets a maximum limit in Kbits/sec. The actual bandwidth will be an adjusted value based on the user specified bandwidth. The actual limit may be equal to the user specified limit, but will not exceed it. The actual limit recognized by the device, will be displayed when the command is executed.
<value 64-10240000> - Enter the receiving data rate here. This value must be between 64 and 10240000.
tx_rate - (Optional) Specify the limitation applied to transmit data rate.
no_limit - Indicates there is no limit on port tx bandwidth. An integer value from m to n sets a maximum limit in Kbits/sec. The actual bandwidth will be an adjusted value based on the user specified bandwidth. The actual limit may be equal to the user specified limit, but will not exceed it. The actual limit recognized by the device, will be displayed when the command is executed.
<value 64-10240000> - Enter the transmitting data rate here. This value must be between 64 and 10240000.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the port bandwidth:

```
DGS-3000-26TC:admin#config bandwidth_control 1-10 tx_rate 100
Command: config bandwidth_control 1-10 tx_rate 100

Success

DGS-3000-26TC:admin#
```

70-2 show bandwidth_control

Description

This command is used to display the port bandwidth configurations.

The bandwidth can also be assigned by the RADIUS server through the authentication process. If RADIUS server has assigned the bandwidth, then the RADIUS-assigned bandwidth will be the effective bandwidth. The authentication with the RADIUS sever can be per port or per user. For per-user authentication, there may be multiple bandwidth control values assigned when there are multiple users attached to this specific port. In this case, the largest assigned bandwidth value will be applied to the effective bandwidth for this specific port. Note that only devices that support MAC-based VLAN can provide per user authentication.

Format

show bandwidth_control {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.

If no parameter specified, system will display all ports bandwidth configurations.

Restrictions

None.

Example

To display port bandwidth control table:

```
DGS-3000-26TC:admin#show bandwidth_control 1-10
```

```
Command: show bandwidth_control 1-10
```

Bandwidth Control Table

Port	RX Rate (Kbit/sec)	TX Rate (Kbit/sec)	Effective RX (Kbit/sec)	Effective TX (Kbit/sec)
1	No Limit	64	No Limit	64
2	No Limit	64	No Limit	64
3	No Limit	64	No Limit	64
4	No Limit	64	No Limit	64
5	No Limit	64	No Limit	64
6	No Limit	64	No Limit	64
7	No Limit	64	No Limit	64
8	No Limit	64	No Limit	64
9	No Limit	64	No Limit	64
10	No Limit	64	No Limit	64

```
DGS-3000-26TC:admin#
```

70-3 config per_queue bandwidth_control

Description

This command is used to configure per port CoS bandwidth control.

Format

```
config per_queue bandwidth_control {ports [<portlist> | all]} <cos_id_list 0-7> {{min_rate [no_limit | <value 64-10240000>]} max_rate [no_limit | <value 64-10240000>]}(1)
```

Parameters

ports - (Optional) Specify a range of ports to be configured.

<portlist> - Enter the list of port used for this configuration here.

all - For set all ports in the system, you may use "all" parameter. If no parameter is specified, system will set all ports.

<cos_id_list 0-7> - Enter a list of priority queues. The priority queue number is ranged from 0 to 7.

min_rate - (Optional) Specify that one of the parameters below (no_limit or <value m-n>) will be applied to the mini-rate at which the above specified class will be allowed to receive packets.

no_limit - Specify that there will be no limit on the rate of packets received by the above specified class.

<value 64-10240000> - Enter the packet limit, in Kbps, that the above ports will be allowed to receive. If the specified rate is not multiple of minimum granularity, the rate will be adjusted.

max_rate - Specify that one of the parameters below (no_limit or <value m-n >) will be applied to the maximum rate at which the above specified class will be allowed to transmit packets.

no_limit - Specify that there will be no limit on the rate of packets received by the above specified class.

<value 64-10240000> - Enter the packet limit, in Kbps, that the above ports will be allowed to receive. If the specified rate is not multiple of minimum granularity, the rate will be adjusted.

Restrictions

Only Administrators can issue this command.

Example

To configure the ports 1-10 CoS bandwidth queue 1 min rate to 130 and max rate to 100000:


```
DGS-3000-26TC:admin#config per_queue bandwidth_control ports 1-10 1 min_rate 130 max_rate 1000
Command: config per_queue bandwidth_control ports 1-10 1 min_rate 130 max_rate 1000

Granularity: TX: 64. Actual Rate: MIN: 128, MAX: 960.

Success.

DGS-3000-26TC:admin#
```

70-4 show per_queue bandwidth_control

Description

This command is used to display per port CoS bandwidth control settings.

Format

show per_queue bandwidth_control {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.
 If no parameter is specified, system will display all ports CoS bandwidth configurations.

Restrictions

None.

Example

Display per port CoS bandwidth control table:

```
DGS-3000-26TC:admin#show per_queue bandwidth_control 10
Command: show per_queue bandwidth_control 10

Queue Bandwidth Control Table On Port: 10

Queue      Min Rate(Kbit/sec)    Max Rate(Kbit/sec)
0          640                   No Limit
1          640                   No Limit
2          640                   No Limit
3          640                   No Limit
4          No Limit              No Limit
5          No Limit              No Limit
6          No Limit              No Limit
7          No Limit              No Limit

DGS-3000-26TC:admin#
```

70-5 config scheduling

Description

This command is used to configure the traffic scheduling mechanism for each CoS queue.

Format

config scheduling {ports [<portlist> | all]} <class_id 0-7> [strict | weight <value 1-127>]

Parameters

ports – (Optional) Specify a range of ports to be configured.

<portlist> - Enter the list of port used for this configuration here.

all – Specify all the ports to be configured.

<class_id 0-7> - Enter the 8 hardware priority queues which the config scheduling command will apply to. The four hardware priority queues are identified by number from 0 to 7 with the 0 queue being the lowest priority.

strict - The queue will operate in strict mode.

weight - Specify the weights for weighted round robin. A value between 0 and n can be specified.

<value 1-127> - Enter the weights for weighted round robin value here. This value must be between 1 and 127.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the traffic scheduling CoS queue 1 to weight 25 on port 10:

```
DGS-3000-26TC:admin#config scheduling ports 10 1 weight 25
```

```
Command: config scheduling ports 10 1 weight 25
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

70-6 config scheduling_mechanism

Description

This command is used to configure the traffic scheduling mechanism for each CoS queue.

Format

config scheduling_mechanism {ports [<portlist> | all]} [strict | wrr | wdr]

Parameters

ports - (Optional) Specify a range of ports to be configured.

<portlist> - Enter the list of port used for this configuration here.

all - Specify to set all ports in the system. If no port is specified, system will set all ports.

strict - The highest class of service is the first to process traffic. That is, the highest class of service will finish before other queues empty.

wrr - Use the weighted round-robin algorithm to handle packets in an even distribution in priority classes of service.

wdr - Use the weighted deficit round-robin algorithm to handle packets in an even distribution in priority classes of service.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the traffic scheduling mechanism for each CoS queue:

```
DGS-3000-26TC:admin#config scheduling_mechanism strict
Command: config scheduling_mechanism strict

Success.

DGS-3000-26TC:admin#
```

To configure the traffic scheduling mechanism for CoS queue on port 1:

```
DGS-3000-26TC:admin#config scheduling_mechanism ports 1 strict
Command: config scheduling_mechanism ports 1 strict

Success.

DGS-3000-26TC:admin#
```

70-7 show scheduling

Description

This command is used to display the current traffic scheduling parameters.

Format

show scheduling {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.
If no parameter specified, system will display all ports scheduling configurations.

Restrictions

None.

Example

To display the traffic scheduling parameters for each CoS queue on port 1 (take eight hardware priority queues for example):

```
DGS-3000-26TC:admin#show scheduling 1
```

```
Command: show scheduling 1
```

```
QOS Output Scheduling On Port: 1
```

```
Class ID  Weight
```

```
-----  -
```

```
Class-0    1
```

```
Class-1    2
```

```
Class-2    3
```

```
Class-3    4
```

```
Class-4    5
```

```
Class-5    6
```

```
Class-6    7
```

```
Class-7    8
```

```
DGS-3000-26TC:admin#
```

70-8 show scheduling_mechanism

Description

This command is used to show the traffic scheduling mechanism.

Format

```
show scheduling_mechanism {<portlist>}
```

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.

If no parameter specified, system will display all ports scheduling mechanism configurations.

Restrictions

None.

Example

To show scheduling mechanism:

```
DGS-3000-26TC:admin#show scheduling_mechanism
```

```
Command: show scheduling_mechanism
```

Port	Mode
-----	-----
1	Strict
2	Strict
3	Strict
4	Strict
5	Strict
6	Strict
7	Strict
8	Strict
9	Strict
10	Strict
11	Strict
12	Strict
13	Strict
14	Strict
15	Strict
16	Strict
17	Strict
18	Strict
19	Strict
20	Strict
21	Strict
22	Strict
23	Strict
24	Strict
25	Strict
26	Strict

```
DGS-3000-26TC:admin#
```

70-9 config 802.1p user_priority

Description

This command is used to map the 802.1p user priority of an incoming packet to one of the eight hardware queues available on the Switch.

Format

```
config 802.1p user_priority <priority 0-7> <class_id 0-7>
```

Parameters

<priority 0-7> - Enter a priority class value to associate with.

<class_id 0-7> - Enter the Switch's class hardware priority queue ID. The switch has 8 hardware priority queues available. They are numbered between 0 (the lowest priority) and 7 (the highest priority).

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the 802.1p user priority:

```
DGS-3000-26TC:admin#config 802.1p user_priority 1 3
Command: config 802.1p user_priority 1 3

Success.

DGS-3000-26TC:admin#
```

70-10 show 802.1p user_priority

Description

This command is used to display 802.1p user priority for ports.

Format

show 802.1p user_priority

Parameters

None.

Restrictions

None.

Example

To display the 802.1p user priority:

```
DGS-3000-26TC:admin#show 802.1p user_priority
Command: show 802.1p user_priority

QOS Class of Traffic:
Priority-0 -> <Class-2>
Priority-1 -> <Class-0>
Priority-2 -> <Class-1>
Priority-3 -> <Class-3>
Priority-4 -> <Class-4>
Priority-5 -> <Class-5>
Priority-6 -> <Class-6>
Priority-7 -> <Class-7>

DGS-3000-26TC:admin#
```

70-11 config 802.1p default_priority

Description

This command is used to configure the 802.1p default priority settings on the Switch. If an untagged packet is received by the Switch, the priority configured with this command will be written to the packet's priority field.

Format

config 802.1p default_priority [<portlist> | all] <priority 0-7>

Parameters

<portlist> - Enter a range of ports for which the default priority is to be configured. That is, a range of ports for which all untagged packets received will be assigned the priority specified below. The port list is specified by listing the beginning port number on the Switch, separated by a colon. Then highest port number of the range (also separated by a colon) are specified. The beginning and end of the port list range are separated by a dash.

all - Specify that the command apply to all ports on the Switch.

<priority 0-7> - Enter the priority value (0 to 7) assigned to untagged packets received by the Switch or a range of ports on the Switch.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the 802.1p default priority settings on the Switch:

```
DGS-3000-26TC:admin#config 802.1p default_priority all 5
Command: config 802.1p default_priority all 5

Success.

DGS-3000-26TC:admin#
```

70-12 show 802.1p default_priority

Description

This command is used to display the current configured default priority settings on the Switch.

The default priority can also be assigned by the RADIUS server through the authentication process. The authentication with the RADIUS sever can be per port or port user. For per port authentication, the priority assigned by RADIUS server will be the effective port default priority. For per user authentication, the priority assigned by RADIUS will not be the effective port default priority whereas it will become the priority associated with MAC address. Note that only devices supporting MAC-based VLAN can provide per user authentication.

Format

show 802.1p default_priority {<portlist>}

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.

If no parameter is specified, all ports for 802.1p default priority will be displayed.

Restrictions

None.

Example

To display 802.1p default priority:

```
DGS-3000-26TC:admin#show 802.1p default_priority 1-10
```

```
Command: show 802.1p default_priority 1-10
```

Port	Priority	Effective Priority
----	-----	-----
1	5	5
2	5	5
3	5	5
4	5	5
5	5	5
6	5	5
7	5	5
8	5	5
9	5	5
10	5	5

```
DGS-3000-26TC:admin#
```

70-13 config dscp trust

Description

This command is used to configure the state of DSCP trust per port. When DSCP is not trusted, 802.1p is trusted.

Format

```
config dscp trust [<portlist> | all] state [enable | disable]
```

Parameters

<portlist> - Enter the list of port used for this configuration.

all - Specify that the command apply to all ports on the Switch.

state - Specify to enable or disable to trust DSCP. By default, DSCP trust is disabled.

enable - Specify to enable the DSCP trust state.

disable - Specify to disable the DSCP trust state.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Enable DSCP trust on ports 1-8.

```
DGS-3000-26TC:admin#config dscp trust 1-8 state enable
```

```
Command: config dscp trust 1-8 state enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```


70-14 config 802.1p map

Description

This command is used to configure the mapping of 802.1p to the packet's initial color. The mapping of 802.1p to a color is used to determine the initial color of the packet when the policing function of the packet is color aware and the packet is 1p-trusted.

Format

config 802.1p map {[<portlist> | all]} **1p_color** <priority_list> to [green | red | yellow]

Parameters

<portlist> - (Optional) Enter the list of port used for this configuration.
all - (Optional) Specify that the command apply to all ports on the Switch.
1p_color - The list of source priority for incoming packets.
<priority_list> - Enter the list of source priority for incoming packets.
to - The mapped color for a packet.
green - Specify green as the mapped color.
red - Specify red as the mapped color.
yellow - Specify yellow as the mapped color.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

If a product supports per-port 802.1p mapping configuration, configure the mapping of 802.1p priority 1 to red on ports 1-8.

```
DGS-3000-26TC:admin#config 802.1p map 1-8 1p_color 1 to red
Command: config 802.1p map 1-8 1p_color 1 to red

Success.

DGS-3000-26TC:admin#
```

70-15 show 802.1p map 1p_color

Description

This command is used to display the 802.1p to color mapping.

Format

show 802.1p map 1p_color {<portlist>}

Parameters

<portlist> - (Optional) Enter a list of ports.

Restrictions

None.

Example

To show the 802.1p color mapping on port 1:

```
DGS-3000-26TC:admin#show 802.1p map lp_color 1
Command: show 802.1p map lp_color 1

802.1p to Color Mapping:
-----
Port 0      1      2      3      4      5      6      7
-----
1   Green  Green  Green  Green  Green  Green  Green  Green

DGS-3000-26TC:admin#
```

70-16 show dscp trust

Description

This command is used to display DSCP trust state for the specified ports on the Switch.

Format

show dscp trust {<portlist>}

Parameters

<portlist> - (Optional) A range of ports to display.
If not specify the port, all ports for DSCP trust status on the Switch will be displayed.

Restrictions

None.

Example

Display DSCP trust status on ports 1-8.

```
DGS-3000-26TC:admin#show dscp trust 1-8
Command: show dscp trust 1-8

Port DSCP-Trust
-----
1   Disabled
2   Disabled
3   Disabled
4   Disabled
5   Disabled
6   Disabled
7   Disabled
8   Disabled

DGS-3000-26TC:admin#
```

70-17 config dscp map

Description

This command is used to configure DSCP mapping. The mapping of DSCP to priority will be used to determine the priority of the packet (which will be then used to determine the scheduling queue) when the port is in DSCP trust state.

The mapping of DSCP to color will be used to determine the initial color of the packet when the policing function of the packet is color aware and the packet is DSCP-trusted.

The DSCP-to-DSCP mapping is used in the swap of DSCP of the packet when the packet is ingresses to the port. The remaining processing of the packet will base on the new DSCP. By default, the DSCP is mapped to the same DSCP.

These DSCP mapping will take effect at the same time when IP packet ingress from a DSCP-trusted port.

Format

config dscp map {[<portlist> | all]} [**dscp_priority** <dscp_list> to <priority 0-7> | **dscp_dscp** <dscp_list> to <dscp 0-63> | **dscp_color** <dscp_list> to [green | red | yellow]]

Parameters

<portlist> - (Optional) Enter the list of port used for this configuration here.
all - (Optional) Specify that all the ports will be included in this configuration.
dscp_priority - Specify a list of DSCP value to be mapped to a specific priority.
<dscp_list> - Enter the DSCP priority list here.
to - Specify that the above or following parameter will be mapped to the previously mentioned parameter.
<priority 0-7> - Enter the result priority of mapping.
dscp_dscp - Specify a list of DSCP value to be mapped to a specific DSCP.
<dscp_list> - Enter the DSCP to DSCP list here.
to - Specify that the above or following parameter will be mapped to the previously mentioned parameter.
<dscp 0-63> - Enter the result DSCP of mapping.
dscp_color - Specify a list of DSCP value to be mapped to a specific color.
<dscp_list> - Enter the DSCP to color list here.
to - Specify that the above or following parameter will be mapped to the previously mentioned parameter.
green - Specify the result color of mapping to be green.
red - Specify the result color of mapping to be red.
yellow - Specify the result color of mapping to be yellow.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the mapping of the DSCP priority to priority 1:

```
DGS-3000-26TC:admin#config dscp map 1-8 dscp_priority 1 to 1
Command: config dscp map 1-8 dscp_priority 1 to 1

Success.

DGS-3000-26TC:admin#
```

To configure the global mapping of the DSCP priority to priority 1:

```
DGS-3000-26TC:admin#config dscp map dscp_priority 1 to 1
Command: config dscp map dscp_priority 1 to 1

Success.

DGS-3000-26TC:admin#
```

70-18 show dscp map

Description

This command is used to show DSCP trusted port list and mapped color, priority and DSCP.

Format

show dscp map {<portlist>} [dscp_priority | dscp_dscp | dscp_color] {dscp <dscp_list>}

Parameters

<portlist> - (Optional) Enter a range of ports to show. If no port is specified, all ports' DSCP mapping will be displayed.
dscp_priority - Specify a list of DSCP value to be mapped to a specific priority.
dscp_dscp - Specify a list of DSCP value to be mapped to a specific DSCP.
dscp_color - Specify a list of DSCP value to be mapped to a specific color.
dscp - (Optional) This Specify DSCP value that will be mapped.
<dscp_list> - Enter the DSCP list here.

Restrictions

None.

Example

In case of project support per port configure, show DSCP map configuration on port 1.

```
DGS-3000-26TC:admin#show dscp map 1 dscp_dscp
Command: show dscp map 1 dscp_dscp

DSCP to DSCP Mapping:
-----
Port 1   | 0  1  2  3  4  5  6  7  8  9
-----+-----
      0 | 0  1  2  3  4  5  6  7  8  9
      1 | 10 11 12 13 14 15 16 17 18 19
      2 | 20 21 22 23 24 25 26 27 28 29
      3 | 30 31 32 33 34 35 36 37 38 39
      4 | 40 41 42 43 44 45 46 47 48 49
      5 | 50 51 52 53 54 55 56 57 58 59
      6 | 60 61 62 63
-----

DGS-3000-26TC:admin#
```

70-19 show 802.1p queue statistics port

Description

This command is used to display the per queue counters for each port.

Format

show 802.1p queue statistics port <port>

Parameters

<port> - Enter the port to be displayed.

Restrictions

None.

Example

To display the per queue counters for port 10:

```
DGS-3000-26TC:admin#show 802.1p queue statistics port 10
Command: show 802.1p queue statistics port 10
Notes:
(1)Min Bandwidth: minimum bandwidth setting, associated with per queue bandwidth control, if
user doesn't configure it, the min bandwidth will be 0.
(2)Max Bandwidth: maximum bandwidth setting, associated with per queue bandwidth control, if
user doesn't configure it, the max bandwidth will be the current port's link speed.
```

Queue	Min Bandwidth	Packets/sec	Total packets
	Max Bandwidth	Bytes/sec	Total Bytes
0	0	0	0
	0	0	0
1	0	0	0
	0	0	0
2	0	0	0
	0	0	0
3	0	0	0
	0	0	0
4	0	0	0
	0	0	0
5	0	0	0
	0	0	0

```
DGS-3000-26TC:admin#
```

Chapter 71 RADIUS Client Command List

```
config radius add <server_index 1-3> [<server_ip> | <ipv6addr>] [key <password 32> | encryption_key
<password 56>] [default | {auth_port <udp_port_number 1-65535> | acct_port <udp_port_number 1-65535> |
timeout <sec 1-255> | retransmit <int 1-20>}(1)]
```

```
config radius delete <server_index 1-3>
```

```
config radius <server_index 1-3> {ipaddress [<server_ip> | <ipv6addr>] | [key <password 32> | encryption_key
<password 56 >] | auth_port [<udp_port_number 1-65535 >| default] | acct_port [<udp_port_number 1-65535>
| default ] | timeout [<sec 1-255> | default] | retransmit [<int 1-20> | default]}(1)
```

```
show radius
```

```
show auth_client
```

```
show acct_client
```

71-1 config radius add

Description

This command is used to add a new RADIUS server. The server with lower index has higher authenticated priority.

Format

```
config radius add <server_index 1-3> [<server_ip> | <ipv6addr>] [key <password 32> | encryption_key
<password 56>] [default | {auth_port <udp_port_number 1-65535> | acct_port <udp_port_number 1-65535>
| timeout <sec 1-255> | retransmit <int 1-20>}(1)]
```

Parameters

<server_index 1-3> - Enter the RADIUS server index. This value must be between 1 and 3.
<server_ip> - Enter the IP address of the RADIUS server here.
<ipv6addr> - Enter the IPv6 address of the RADIUS server here.
key - The key pre-negotiated between switch and the RADIUS server. It is used to encrypt user's authentication data before being transmitted over internet. The maximum length of the key is 32.
<password 32> - Enter the password here. The password can be up to 32 characters long.
encryption_key - Specify the key pre-negotiated between the switch and the RADIUS server. It is used to encrypt the user's authentication data before being transmitted over the Internet.
<password 56> - Enter the encryption key.
default - Sets the authentication UDP port number to 1812 accounting UDP port number to 1813, timeout to 5 seconds and retransmit to 2.
auth_port - Specify the UDP port number which is used to transmit RADIUS authentication data between the Switch and the RADIUS server. The range is 1 to 65535.
<udp_port_number 1-65535> - Enter the authentication port number here. This value must be between 1 and 65535.
acct_port - Specify the UDP port number which is used to transmit RADIUS accounting statistics between the Switch and the RADIUS server. The range is 1 to 65535.
<udp_port_number 1-65535> - Enter the accounting port number here. This value must be between 1 and 65535.
timeout - The waiting time in second for the server to reply. The default value is 5 seconds.
<sec 1-255> - Enter the timeout value here. This value must be between 1 and 255 seconds.
retransmit - The count for re-transmitting. The default value is 2.
<int 1-20> - Enter the re-transmit value here. This value must be between 1 and 20.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a new RADIUS server:

```
DGS-3000-26TC:admin#config radius add 1 10.48.74.121 key dlink default
Command: config radius add 1 10.48.74.121 key dlink default

Success.

DGS-3000-26TC:admin#
```

71-2 config radius delete**Description**

This command is used to delete a RADIUS server.

Format

config radius delete <server_index 1-3>

Parameters

<server_index 1-3> - Enter the RADIUS server index.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a RADIUS server:

```
DGS-3000-26TC:admin#config radius delete 1
Command: config radius delete 1

Success.

DGS-3000-26TC:admin#
```

71-3 config radius**Description**

This command is used to configure a RADIUS server.

Format

config radius <server_index 1-3> {ipaddress [<server_ip> | <ipv6addr>] | [key <password 32> | encryption_key <password 56 >] | auth_port [<udp_port_number 1-65535 >| default] | acct_port [<udp_port_number 1-65535> | default] | timeout [<sec 1-255> | default] | retransmit [<int 1-20> | default]}(1)

Parameters

<server_index 1-3> - Enter the RADIUS server index here. This value must be between 1 and 3.

ipaddress - The IP address of the RADIUS server.

<server_ip> - Enter the RADIUS server IP address here.

<ipv6addr> - Enter the RADIUS server IPv6 address used here.

key - The key pre-negotiated between switch and RADIUS server. It is used to encrypt user's authentication data before being transmitted over internet. The maximum length of the key is 32.

<password 32> - Enter the key here. The key can be up to 32 characters long.

encryption_key - Specify the key pre-negotiated between the switch and the RADIUS server. It is used to encrypt the user's authentication data before being transmitted over the Internet.

<password 56> - Enter the encryption key.

auth_port - Specify the UDP port number which is used to transmit RADIUS authentication data between the Switch and the RADIUS server. The range is 1 to 65535. The default value is 1812.

<udp_port_number 1-65535> - Enter the authentication port number here. This value must be between 1 and 65535.

default - Specify that the default port number will be used.

acct_port - Specify the UDP port number which is used to transmit RADIUS accounting statistics between the Switch and the RADIUS server. The range is 1 to 65535. The default value is 1813.

<udp_port_number 1-65535> - Enter the accounting port number here. This value must be between 1 and 65535.

default - Specify that the default port number will be used.

timeout - The time in second for waiting server reply. The default value is 5 seconds.

<sec 1-255> - Enter the timeout value here. This value must be between 1 and 255 seconds.

default - Specify that the default timeout value will be used.

retransmit - The count for re-transmitting. The default value is 2.

<int 1-20> - Enter the re-transmit value here. This value must be between 1 and 20.

default - Specify that the default re-transmit value will be used.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a RADIUS server:

```
DGS-3000-26TC:admin#config radius 1 auth_port 60
Command: config radius 1 auth_port 60

Success.

DGS-3000-26TC:admin#
```

71-4 show radius

Description

This command is used to display RADIUS server configurations.

Format

show radius

Parameters

None.

Restrictions

None.

Example

To display RADIUS server configurations:

```
DGS-3000-26TC:admin#show radius
Command: show radius

Index  IP Address      Auth-Port  Acct-Port  Timeout  Retransmit  Key
-----  -----
1      10.48.74.121   60         1813       5         2           dlink

Total Entries : 1

DGS-3000-26TC:admin#
```

71-5 show auth_client**Description**

This command is used to display information of RADIUS authentication client.

Format

show auth_client

Parameters

None.

Restrictions

None.

Example

To display authentication client information:

```
DGS-3000-26TC:admin#show auth_client
Command: show auth_client

radiusAuthClient ==>
 radiusAuthClientInvalidServerAddresses    0
 radiusAuthClientIdentifier

radiusAuthServerEntry ==>
 radiusAuthServerIndex :1

 radiusAuthServerAddress                    0.0.0.0
 radiusAuthClientServerPortNumber          0
 radiusAuthClientRoundTripTime             0
 radiusAuthClientAccessRequests           0
 radiusAuthClientAccessRetransmissions    0
 radiusAuthClientAccessAccepts            0
 radiusAuthClientAccessRejects           0
 radiusAuthClientAccessChallenges         0
 radiusAuthClientMalformedAccessResponses 0
 radiusAuthClientBadAuthenticators        0
 radiusAuthClientPendingRequests          0
 radiusAuthClientTimeouts                 0
 radiusAuthClientUnknownTypes             0
 radiusAuthClientPacketsDropped           0

DGS-3000-26TC:admin#
```

71-6 show acct_client

Description

This command is used to display information of RADIUS accounting client.

Format

show acct_client

Parameters

None.

Restrictions

None.

Example

To display information of RADIUS accounting client:

```
DGS-3000-26TC:admin#show acct_client
Command: show acct_client

radiusAcctClient ==>
radiusAcctClientInvalidServerAddresses    0
radiusAcctClientIdentifier

radiusAuthServerEntry ==>
radiusAccServerIndex : 1

radiusAccServerAddress                    0.0.0.0
radiusAccClientServerPortNumber          0
radiusAccClientRoundTripTime              0
radiusAccClientRequests                   0
radiusAccClientRetransmissions            0
radiusAccClientResponses                  0
radiusAccClientMalformedResponses         0
radiusAccClientBadAuthenticators          0
radiusAccClientPendingRequests            0
radiusAccClientTimeouts                  0
radiusAccClientUnknownTypes              0
radiusAccClientPacketsDropped             0

DGS-3000-26TC:admin#
```

Chapter 72 Remote Copy Protocol (RCP)

Command List

download firmware_fromRCP [{ username <username 15> } {<ipaddr>} src_file <path_filename 64> rcp: <string {user@}<ipaddr/path_filename>} {dest_file <pathname 64>} {boot_up}
upload firmware_toRCP [{username <username 15>} {<ipaddr>} dest_file <path_filename 64> rcp: <string {user@}<ipaddr/path_filename>} {src_file <pathname 64>}
download cfg_fromRCP [{ username <username 15> } {<ipaddr>} src_file <path_filename 64> rcp: <string {user@}<ipaddr/path_filename>} {dest_file <pathname 64>}
upload cfg_toRCP [{ username <username 15> } {<ipaddr>} dest_file <path_filename 64> rcp: <string {user@}<ipaddr/path_filename>} {src_file <pathname 64>} {[include exclude begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include exclude begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include exclude begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}}}]}
upload log_toRCP [{username <username 15>} {<ipaddr>} dest_file <path_filename 64> rcp: <string {user@}<ipaddr/path_filename>}
upload attack_log_toRCP [{username <username 15>} {<ipaddr>} dest_file <path_filename 64> rcp: <string {user@}<ipaddr/path_filename>}
config rcp server {ipaddress <ipaddr> username <username>}(1)
config rcp server clear [ipaddr username both]
show rcp server

72-1 download firmware_fromRCP

Description

This command is used to download a firmware file from a Remote Copy Protocol (RCP) server.

Format

download firmware_fromRCP [{username <username 15>} {<ipaddr>} src_file <path_filename 64> | rcp: <string {user@}<ipaddr/path_filename>} {dest_file <pathname 64>} {boot_up}

Parameters

username - (Optional) Specify the remote user name on the RCP server. <username 15> - Enter the remote user name on the RCP server.
<ipaddr> - (Optional) Enter the IP address of the RCP server.
src_file - Specify the path name on the RCP server or local. <path_filename 64> - Enter the path name on the RCP server or local.
rcp: - Specify the path and the login credentials on the RCP server that will be used for the download. <string {user@}<ipaddr/path_filename> - Enter the path and the login credentials on the RCP server that will be used for the download. No spaces are allowed. For example, user_name@10.1.1.1/home/user_name/firmware.had.
dest_file - (Optional) Specify the path and file name of the destination file on the device. <pathname 64> - Enter the path and file name of the destination file.
boot_up - Specify it as a boot-up file.

Restrictions

Only Administrators can issue this command.

Example

To download firmware from an RCP server:

```
DGS-3000-26TC:admin#download firmware_fromRCP username rcp_user 10.90.90.90 src_file /home/
Command: download firmware_fromRCP username rcp_user 10.90.90.90 src_file /home/

Connecting to server..... Done.
Download firmware..... Done.   Do not power off !!
Please wait, programming flash..... Done.
Saving current settings to NV-RAM..... Done.

DGS-3000-26TC:admin#
```

72-2 upload firmware_toRCP

Description

This command is used to upload firmware from this Switch to a Remote Copy Protocol (RCP) server.

Format

```
upload firmware_toRCP [{username <username 15>} {<ipaddr>} dest_file <path_filename 64> | rcp: <string
{user@}ipaddr/path_filename>} {src_file <pathname 64>}]
```

Parameters

username - (Optional) Specify the remote user name on the RCP server.

<username 15> - Enter the remote user name on the RCP server.

<ipaddr> - (Optional) Enter the IP address of the RCP server.

dest_file - Specify the path name on the RCP server.

<path_filename 64> - Enter the path name on the RCP server.

rcp: - Specify the path and the login credentials on the RCP server that will be used for the upload.

<string {user@}ipaddr/path_filename> - Enter the path and the login credentials on the RCP server that will be used for the upload. No spaces are allowed. For example, user_name@10.1.1.1/home/user_name/firmware.had.

src_file - (Optional) Specify the path name of the source file. If not specified, the boot-up image on the device will be uploaded.

<pathname 64> - Enter the path name of the source file.

Restrictions

Only Administrators can issue this command.

Example

To upload firmware image to an RCP server:

```
DGS-3000-26TC:admin#upload firmware_toRCP rcp: rcp_user@172.18.212.106/DGS-3000-1.12.had
src_file 1.12.had
Command: upload firmware_toRCP rcp: rcp_user@172.18.212.106/DGS-3000-1.12.had src_file
1.12.had

Connecting to server..... Done.
Upload firmware..... Done.

DGS-3000-26TC:admin#
```

72-3 download cfg_fromRCP

Description

This command is used to download the configuration file from a Remote Copy Protocol (RCP) server to the Switch.

Format

```
download cfg_fromRCP [{username <username 15>} {<ipaddr>} src_file <path_filename 64> | rcp: <string {user@}ipaddr/path_filename>} {dest_file <pathname 64>}]
```

Parameters

username - (Optional) Specify the remote user name on the RCP server. <username 15> - Enter the remote user name on the RCP server.
<ipaddr> - (Optional) Enter the IP address of the RCP server.
src_file - Specify the path and file name of the switch configuration file on the RCP server. The maximum length is 64. <path_filename 64> - Enter the path and file name of the switch configuration file on the RCP server. The maximum length is 64.
rcp: - Specify the path and the login credentials of the configuration file located on the RCP server that will be used for the download. <string {user@}ipaddr/path_filename> - Enter the path and the login credentials of the firmware file located on the RCP server that will be used for the download. The string may contain up to 128 characters.
dest_file - (Optional) Specify the path and file name of the destination file on the device. <pathname 64> - Enter the path and file name of the destination file.

Restrictions

Only Administrators can issue this command.

Example

To download a configuration file from an RCP server:

```
DGS-3000-26TC:admin#download cfg_fromRCP username rcp_user 172.18.212.106 src_file /home/DGS-3000.cfg
Command: download cfg_fromRCP username rcp_user 172.18.212.106 src_file /home/DGS-3000.cfg

Connecting to server..... Done.
Download configuration..... Done.

DGS-3000-26TC:admin#
```

72-4 upload cfg_toRCP

Description

This command is used to upload a configuration file from the device to an RCP server. If the remote filename is not specified, the default file name will be modelname-image-id.

Format

```
upload cfg_toRCP [{username <username 15>} {<ipaddr>} dest_file <path_filename 64> | rcp: <string {user@}ipaddr/path_filename>} {src_file <pathname 64>} {[include | exclude | begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include | exclude | begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include | exclude | begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}}}]}
```

Parameters

username - (Optional) Specify the remote user name on the RCP server.
<username 15> - Enter the remote user name on the RCP server.

<ipaddr> - (Optional) Enter the IP address of the RCP server.

dest_file - Specify the path name on the RCP server.
<path_filename 64> - Enter the path name on the RCP server or local RCP client.

rcp: - Specify the path and the login credentials of the configuration file located on the RCP server that will be used for the upload.
<string {user@}ipaddr/path_filename> - Enter the path and the login credentials of the firmware file located on the RCP server that will be used for the upload. No spaces are allowed. For example, user_name@10.1.1.1/home/user_name/firmware.had.

src_file - (Optional) Specify the path name of the source file.
<pathname 64> - Enter the path name of the source file. Note that if no path name is Specify, only the current device configuration will be uploaded.

include - (Optional) Includes lines that contain the specified filter string.
exclude - (Optional) Excludes lines that contain the specified filter string.
begin - (Optional) The first line that contains the specified filter string will be the first line of the output.
<filter_string 80> - Enter a filter string enclosed by the quotation mark symbol. Thus, the filter string itself cannot contain the quotation mark character. The filter string is case sensitive.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.

include - (Optional) Includes lines that contain the specified filter string.
exclude - (Optional) Excludes lines that contain the specified filter string.
begin - (Optional) The first line that contains the specified filter string will be the first line of the output.
<filter_string 80> - Enter a filter string enclosed by the quotation mark symbol. Thus, the filter string itself cannot contain the quotation mark character. The filter string is case sensitive.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.

include - (Optional) Includes lines that contain the specified filter string.
exclude - (Optional) Excludes lines that contain the specified filter string.
begin - (Optional) The first line that contains the specified filter string will be the first line of the output.
<filter_string 80> - Enter a filter string enclosed by the quotation mark symbol. Thus, the filter string itself cannot contain the quotation mark character. The filter string is case sensitive.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.

Restrictions

Only Administrators can issue this command.

Example

To upload the current configuration from the device to an RCP server:

```
DGS-3000-26TC:admin# upload cfg_toRCP username rcp_user 172.18.212.104 dest_file
/home/config.cfg
Command: upload cfg_toRCP username rcp_user 172.18.212.104 dest_file /home/config.cfg

Connecting to server... Done.
Upload configuration... Done.

DGS-3000-26TC:admin#
```

To upload the configuration from a file system supported device to an RCP Server:

```
DGS-3000-26TC:admin# upload cfg_toRCP username rcp_user 172.18.212.104 dest_file
/home/rcp_user/bone_switch.cfg src_file c:\config.cfg
Command: upload cfg_toRCP username rcp_user 172.18.212.104 dest_file
/home/rcp_user/bone_switch.cfg src_file c:\config.cfg

Connecting to server... Done.
Upload configuration... Done.

DGS-3000-26TC:admin#
```

72-5 upload log_toRCP

Description

This command is used to upload a log file from the device to a Remote Copy Protocol (RCP) server.

Format

```
upload log_toRCP [{username <username 15>} {<ipaddr>} dest_file <path_filename 64> | rcp:<string
{user@}<ipaddr/path_filename>]
```

Parameters

username - (Optional) Specify the remote user name on the RCP server.

<username 15> - Enter the remote user name on the RCP server.

<ipaddr> - (Optional) Enter the IP address of the RCP server.

dest_file - Specify the path name of the RCP server.

<path_filename 64> - Enter the path name of the RCP server.

rcp - Specify the path name on the RCP server.

<string {user@}<ipaddr/path_filename> - Enter the path name on the RCP server. Syntax: rcp:

username@ipaddr/directory/filename. Example for full path:

user_name@10.1.1.1/home/user_name/dgs3000.had. Example for relative path:

user_name@10.1.1.1./dgs3000.had.

Restrictions

Only Administrators can issue this command.

Example

To upload the log from the device to an RCP server:

```
DGS-3000-26TC:admin#upload log_toRCP rcp_user 172.18.212.104 dest_file /home/system-log.log
Command: upload log_toRCP rcp_user 172.18.212.104 dest_file /home/system-log.log

Connecting to server... Done.
Upload log..... Done.

DGS-3000-26TC:admin#
```

To upload log from the device to an RCP server using an RCP string:


```
DGS-3000-26TC:admin#upload log_toRCP rcp: rcp_user 172.18.212.104/home/system-log.log
Command: upload log_toRCP rcp: rcp_user 172.18.212.104/home/system-log.log

Connecting to server... Done.
Upload log..... Done.

DGS-3000-26TC:admin#
```

72-6 upload attack_log_toRCP

Description

This command is used to upload the attack log file from the device to an RCP server.

NOTE: If a user Specify the relative file path, the path search strategy will depend on the server system. For some systems, it will search the current user working directory first, and then search the environment paths.

Format

```
upload attack_log_toRCP [{username <username 15>} {<ipaddr>} dest_file <path_filename 64> | rcp:
<string {user@}ipaddr/path_filename>]
```

Parameters

username - (Optional) Specify the remote user name on the RCP Server.
<username 15> - Enter the remote username used here. This name can be up to 15 characters long.

<ipaddr> - (Optional) Enter the IP address used for the configuration here.

dest_file - Specify the destination file used.
<path_filename 64> - Enter the pathname on the RCP server or local device.

rcp: - Specify the path of the log configuration file located on the RCP server that will be used for the upload.
<string {user@}ipaddr/path_filename> - Enter the path and the login credentials of the firmware file located on the RCP server that will be used for the upload. No spaces are allowed. For example, user_name@10.1.1.1/home/user_name/firmware.had.

Restrictions

Only Administrators can issue this command.

Example

To upload the attack log from the device to an RCP server:

```
DGS-3000-26TC:admin# upload attack_log_toRCP username rcp_user 172.18.212.104 /home/attack-
log.log
Command: upload attack_log_toRCP username rcp_user 172.18.212.104 /home/attack-log.log

Connecting to server..... Done.
Upload attack log..... Done.

DGS-3000-26TC:admin#
```

72-7 config rcp server

Description

This command is used to configure Remote Copy Protocol (RCP) global server information. This global RCP server setting can be used when the server or remote user name is not specified. Only one RCP server can be configured for each system. If a user does not specify the RCP server in the CLI command, and the global RCP server was not configured, the switch will ask the user to input the server IP address or remote user name while executing the RCP commands.

Format

config rcp server {ipaddress <ipaddr> | username <username>}(1)

Parameters

ipaddress - Specify the IP address of the global RCP server. By default, the server is unspecified.
<ipaddr> - Enter the IP address of the RCP server.

username - Specify the remote user name on the RCP server.
<username> - Enter the remote user name on the RCP server.

Restrictions

Only Administrators can issue this command.

Example

To configure RCP global server information for the username "travel":

```
DGS-3000-26TC:admin#config rcp server username travel
Command: config rcp server username travel

Success.

DGS-3000-26TC:admin#
```

72-8 config rcp server clear

Description

This command is used to clear Remote Copy Protocol (RCP) global server information.

Format

config rcp server clear [ipaddr | username | both]

Parameters

ipaddr - Clear the IP address of the RCP server.

username - Clear the username of the RCP server.

both - Clear both the IP address and the username of the RCP server.

Restrictions

Only Administrators can issue this command.

Example

To clear the current username of the RCP global server:

```
DGS-3000-26TC:admin#config rcp server clear username
Command: config rcp server clear username

Success.

DGS-3000-26TC:admin#
```

72-9 show rcp server

Description

This command is used to display Remote Copy Protocol (RCP) global server information.

Format

show rcp server

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To display RCP global server information:

```
DGS-3000-26TC:admin#show rcp server
Command: show rcp server

RCP Server Address      :
RCP Server Username    : travel

DGS-3000-26TC:admin#
```

Chapter 73 RSPAN Command List

enable rspan

disable rspan

create rspan vlan [vlan_name <vlan_name> | vlan_id <vlanid 1-4094>]

delete rspan vlan [vlan_name <vlan_name> | vlan_id <vlanid 1-4094>]

config rspan vlan [vlan_name <vlan_name> | vlan_id <vlanid 1-4094>] [redirect [add | delete] ports <portlist> | source {[add | delete] ports <portlist> [rx | tx | both]}]

show rspan {[vlan_name <vlan_name> | vlan_id <vlanid 1-4094>]}

73-1 enable rspan

Description

This command is used to enable all previously entered RSPAN configurations.

Format

enable rspan

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable all previously entered RSPAN configurations:

```
DGS-3000-26TC:admin#enable rspan
Command: enable rspan

Success.

DGS-3000-26TC:admin#
```

73-2 disable rspan

Description

This command is used to disable all previously entered RSPAN configurations.

Format

disable rspan

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable all previously entered RSPAN configurations:

```
DGS-3000-26TC:admin#disable rspan
Command: disable rspan

Success.

DGS-3000-26TC:admin#
```

73-3 create rspan vlan

Description

This command is used to create an RSPAN VLAN. Up to 16 RSPAN VLANs can be created.

Format

create rspan vlan [vlan_name <vlan_name> | vlan_id <vlanid 1-4094>]

Parameters

vlan_name - Create the RSPAN VLAN by VLAN name.

<vlan_name> - Enter the VLAN name.

vlan_id - Create the RSPAN VLAN by VLAN ID.

<vlanid 1-4094> - Enter the VLAN ID between 1 and 4094.

Restrictions

Only Administrators and Operators can issue this command.

Example

To create an RSPAN VLAN entry by VLAN name "v2":

```
DGS-3000-26TC:admin#create rspan vlan vlan_name v2
Command: create rspan vlan vlan_name v2

Success.

DGS-3000-26TC:admin#
```

To create an RSPAN VLAN entry by VLAN ID "3":

```
DGS-3000-26TC:admin#create rspan vlan vlan_id 3
Command: create rspan vlan vlan_id 3

Success.

DGS-3000-26TC:admin#
```

73-4 delete rspan vlan

Description

This command is used to delete RSPAN VLANs.

Format

```
delete rspan vlan [vlan_name <vlan_name> | vlan_id <vlanid 1-4094>]
```

Parameters

vlan_name - Specify the RSPAN VLAN by VLAN name.

<vlan_name> - Enter the VLAN name.

vlan_id - Specify the RSPAN VLAN by VLAN ID.

<vlanid 1-4094> - Enter the VLAN ID between 1 and 4094.

Restrictions

Only Administrators and Operators can issue this command.

Example

To delete an RSPAN VLAN entry by VLAN name "v2":

```
DGS-3000-26TC:admin#delete rspan vlan vlan_name v2
```

```
Command: delete rspan vlan vlan_name v2
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

To delete an RSPAN VLAN entry by VLAN ID "3":

```
DGS-3000-26TC:admin#delete rspan vlan vlan_id 3
```

```
Command: delete rspan vlan vlan_id 3
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

73-5 config rspan vlan

Description

This command is used by the source switch to configure the source setting for the RSPAN VLAN. The redirect command is used by the intermediate or last switch to configure the output port of the RSPAN VLAN packets, and makes sure that the RSPAN VLAN packets can egress to the redirect ports. In addition, the VLAN setting must be correctly configured to make the RSPAN VLAN work correctly. That is, for the intermediate switch, the redirect port must be a tagged member port of the RSPAN VLAN. For the last switch, the redirect port must be either a tagged member port or an untagged member port of the RSPAN VLAN based on the users' requirements. If untagged membership is specified, the RSPAN VLAN tag will be removed. The redirect function will only work when RSPAN is enabled. Multiple RSPAN VLANs can be configured with the redirect setting at the same time.

A RSPAN VLAN can be configured with the source setting and the redirect setting at the same time.

Format

config rspan vlan [vlan_name <vlan_name> | vlan_id <vlanid 1-4094>] [redirect [add | delete] ports <portlist> | source {[add | delete] ports <portlist> [rx | tx | both]]]

Parameters

vlan_name - Specify the RSPAN VLAN by VLAN name. <vlan_name> - Enter the VLAN name.
vlan_id - Specify the RSPAN VLAN by VLAN ID. <vlanid 1-4094> - Enter the VLAN ID between 1 and 4094.
redirect - Specify output port list for the RSPAN VLAN packets. If the redirect port is a Link Aggregation port, the Link Aggregation behavior will apply to the RSPAN packets. add - Specify to add the redirect port. delete - Specify to delete the redirect port. ports - Specify the output port list to add to or delete from the RSPAN packets. <portlist> - Enter a range of ports to be configured.
source - If the ports are not specified by this command, the source of RSPAN will come from the source specified by the mirror command or the flow-based source specified by an ACL. If no parameter is specified for source, it deletes the configured source parameters. add - (Optional) Specify to add source ports. delete - (Optional) Specify to delete source ports. ports - (Optional) Specify source port list to add to or delete from the RSPAN source. <portlist> - Enter a range of ports to be configured. rx - (Optional) Specify to only monitor ingress packets. tx - (Optional) Specify to only monitor egress packets. both - (Optional) Specify to monitor both ingress and egress packets.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure an RSPAN source entry without source target port:

```
DGS-3000-26TC:admin#config rspan vlan vlan_name vlan2 source add ports 2-5 rx
Command: config rspan vlan vlan_name vlan2 source add ports 2-5 rx

Success.

DGS-3000-26TC:admin#
```

To configure an RSPAN source entry for per flow RSPAN, without any source ports:

```
DGS-3000-26TC:admin#config rspan vlan vlan_id 2 source
Command: config rspan vlan vlan_id 2 source

Success.

DGS-3000-26TC:admin#
```

To configure RSPAN redirect for "VLAN 2" to ports 18 and 19:

```
DGS-3000-26TC:admin#config rspan vlan vlan_name vlan2 redirect add ports 18-19
Command: config rspan vlan vlan_name vlan2 redirect add ports 18-19

Success.

DGS-3000-26TC:admin#
```

73-6 show rspan

Description

This command is used to display RSPAN VLAN configuration.

Format

show rspan {[vlan_name <vlan_name> | vlan_id <vlanid 1-4094>]}

Parameters

vlan_name - (Optional)Specify the RSPAN VLAN by VLAN name.

<vlan_name> - Enter the VLAN name.

vlan_id - (Optional)Specify the RSPAN VLAN by VLAN ID.

<vlanid 1-4094> - Enter the VLAN ID between 1 and 4094.

Restrictions

None.

Example

To display specific RSPAN VLAN settings:

```
DGS-3000-26TC:admin#show rspan vlan_id 2
Command: show rspan vlan_id 2

RSPAN      : Enabled

RSPAN VLAN ID : 2
-----
Source Port
  RX          : 10
  TX          : 10
Redirect Port : 11

DGS-3000-26TC:admin#
```

To display all RSPAN VLAN settings:


```
DGS-3000-26TC:admin#show rspan
Command: show rspan

RSPAN    : Enabled

RSPAN VLAN ID  : 2
-----
Source Port
    RX          : 10
    TX          : 10
Redirect Port   : 11

Total RSPAN VLAN :1

DGS-3000-26TC:admin#
```

Chapter 74 Safeguard Engine Command List

```
config safeguard_engine {state [enable | disable]| utilization {rising <20-100> | falling <20-100>} | trap_log
  [enable | disable] | mode [strict | fuzzy]}
```

```
show safeguard_engine
```

74-1 config safeguard_engine

Description

This command is used to configure the CPU protection control for the system.

Format

```
config safeguard_engine {state [enable | disable]| utilization {rising <20-100> | falling <20-100>} | trap_log
  [enable | disable] | mode [strict | fuzzy]}
```

Parameters

state - (Optional) Specify to configure CPU protection state to enable or disable.

enable - Specify that CPU protection will be enabled.

disable - Specify that CPU protection will be enabled.

utilization - (Optional) Specify to configure the CPU protection threshold.

rising - Specify utilization rising threshold. The range is between 20%-100%. If the CPU utilization is over the rising threshold, the Switch enters exhausted mode.

<20-100> - Enter the utilization rising value here. This value must be between 20 and 100.

falling - Specify utilization falling threshold. The range is between 20%-100%. If the CPU utilization is lower than the falling threshold, the Switch enters normal mode.

<20-100> - Enter the utilization falling value here. This value must be between 20 and 100.

trap_log - (Optional) Specify to enable or disable the trap and log mechanism.

enable - Specify that the trap and log mechanism will be enabled.

disable - Specify that the trap and log mechanism will be disabled.

mode - (Optional) Determines the control method of broadcasting traffic.

strict - In strict mode, the Switch will stop receiving all 'IP broadcast' packets, packets from the untrusted IP address, and reduce the bandwidth of 'ARP-not-to-me' packets (the protocol address of the target in the ARP packet is the Switch itself) to the Switch. That means that no matter what the reasons for high CPU utilization are (may not be caused by an ARP storm), the Switch reluctantly processes the specified traffic, mentioned previously in the Exhausted mode.

fuzzy - In fuzzy mode, the Switch will adjust the bandwidth dynamically.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure CPU protection:

```
DGS-3000-26TC:admin#config safeguard_engine state enable utilization rising 50 falling 30
trap_log enable
```

```
Command: config safeguard_engine state enable utilization rising 50 falling 30 trap_log
enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

74-2 show safeguard_engine

Description

This command is used to show safeguard engine information.

Format

show safeguard_engine

Parameters

None.

Restrictions

None.

Example

To show safeguard_engine information:

```
DGS-3000-26TC:admin#show safeguard_engine
Command: show safeguard_engine

Safeguard Engine State      : Disabled
Safeguard Engine Current Status : Normal Mode
=====
CPU Utilization Information:
Rising Threshold   : 30%
Falling Threshold  : 20%
Trap/Log State     : Disabled
Mode                : Fuzzy

DGS-3000-26TC:admin#
```

NOTE: Safeguard engine current status has two modes: exhausted and normal mode.

Chapter 75 Secure Shell (SSH) Command List

config ssh algorithm [3DES AES128 AES192 AES256 arcfour blowfish cast128 twofish128 twofish192 twofish256 MD5 SHA1 RSA DSA] [enable disable]
show ssh algorithm
config ssh authmode [password publickey hostbased] [enable disable]
show ssh authmode
config ssh user <username 15> authmode [hostbased [hostname <domain_name 32> hostname_IP <domain_name 32> [<ipaddr> <ipv6addr>]] password publickey]
show ssh user authmode
config ssh server {maxsession <int 1-8> contimeout <sec 120-600> authfail <int 2-20> rekey [10min 30min 60min never] port <tcp_port_number 1-65535>}
enable ssh
disable ssh
show ssh server

75-1 config ssh algorithm

Description

This command is used to configure SSH service algorithm.

Format

config ssh algorithm [3DES | AES128 | AES192 | AES256 | arcfour | blowfish | cast128 | twofish128 | twofish192 | twofish256 | MD5| SHA1 | RSA | DSA] [enable | disable]

Parameters

3DES - The 3DES cipher is three-key triple-DES (encrypt-decrypt-encrypt), where the first 8 bytes of the key are used for the first encryption, the next 8 bytes for the decryption, and the following 8 bytes for the final encryption.
AES128 - Specify that the AES, 128-bit encryption method will be used.
AES192 - Specify that the AES, 192-bit encryption method will be used.
AES256 - Specify that the AES, 256-bit encryption method will be used.
arcfour - RC4 (also known as ARC4 or ARCFOUR meaning Alleged RC4) is the most widely-used software stream cipher.
blowfish - Blowfish is a keyed, symmetric block cipher.
cast128 - CAST-128 is a 12- or 16-round feistel network with a 64-bit block size and a key size of between 40 to 128 bits.
twofish128 - Specify that the Twofish, 128-bit encryption method will be used.
twofish192 - Specify that the Twofish, 192-bit encryption method will be used.
twofish256 - Specify that the Twofish, 256-bit encryption method will be used.
MD5 - Message-Digest Algorithm 5.
SHA1 - Secure Hash Algorithm.
RSA - RSA encryption algorithm is a non-symmetric encryption algorithm.
DSA - Digital Signature Algorithm.
enable - Enables the algorithm.
disable - Disables the algorithm.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable SSH server public key algorithm:

```
DGS-3000-26TC:admin#config ssh algorithm DSA enable
Command: config ssh algorithm DSA enable

Success.

DGS-3000-26TC:admin#
```

75-2 show ssh algorithm

Description

This command is used to show the SSH service algorithm.

Format

show ssh algorithm

Parameters

None.

Restrictions

None.

Example

To show server algorithm:

```

DGS-3000-26TC:admin#show ssh algorithm
Command: show ssh algorithm

Encryption Algorithm
-----
3DES      : Enabled
AES128    : Enabled
AES192    : Enabled
AES256    : Enabled
Arcfour   : Enabled
Blowfish  : Enabled
Cast128   : Enabled
Twofish128 : Enabled
Twofish192 : Enabled
Twofish256 : Enabled

Data Integrity Algorithm
-----
MD5       : Enabled
SHA1      : Enabled

Public Key Algorithm
-----
RSA       : Enabled
DSA       : Enabled

DGS-3000-26TC:admin#

```

75-3 config ssh authmode

Description

This command is used to configure user authentication method for SSH.

Format

config ssh authmode [password | publickey | hostbased] [enable | disable]

Parameters

password - Specify the user authentication method using password.

publickey - Specify the user authentication method using public key.

hostbased - Specify the user authentication method using host-based.

enable - Enables the user authentication method.

disable - Disables the user authentication method.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure user authentication method:

```
DGS-3000-26TC:admin#config ssh authmode publickey enable
Command: config ssh authmode publickey enable

Success.

DGS-3000-26TC:admin#
```

75-4 show ssh authmode

Description

This command is used to show the user authentication method.

Format

show ssh authmode

Parameters

None.

Restrictions

None.

Example

To show user authentication method:

```
DGS-3000-26TC:admin#show ssh authmode
Command: show ssh authmode

The SSH Authentication Method:
Password      : Enabled
Public Key    : Enabled
Host-based    : Enabled

DGS-3000-26TC:admin#
```

75-5 config ssh user

Description

This command is used to update user information for SSH configuration.

Format

config ssh user <username 15> authmode [hostbased [hostname <domain_name 32> | hostname_IP <domain_name 32> [<ipaddr> | <ipv6addr>]] | password | publickey]

Parameters

<username 15> - Enter the user name. This name can be up to 15 characters long.

authmode - Specify the authentication method.

hostbased - Specify user authentication method.

hostname - Specify host domain name.

<domain_name 32> - Enter the domain name here. This name can be up to 32 characters long.

hostname_IP - Specify host domain name and IP address.

<domain_name 32> - Enter host name if configuring Host-based method.

<ipaddr> - Enter host IP address if configuring Host-based method.

<ipv6addr> - Enter host IPv6 address if configuring Host-based method.

password - Specify user authentication method.

publickey - Specify user authentication method.

Restrictions

Only Administrators can issue this command.

Example

To update user "test" authentication method:

```
DGS-3000-26TC:admin#config ssh user test authmode publickey
Command: config ssh user test authmode publickey
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

75-6 show ssh user authmode

Description

This command is used to show the SSH user information.

Format

show ssh user authmode

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To show user information about SSH configuration:


```
DGS-3000-26TC:admin#show ssh user authmode
```

```
Command: show ssh user authmode
```

```
Current Accounts:
```

User Name	Authentication	Host Name	Host IP
User1	Password		
User2	Public Key		
User3	Host-based	domain.com	10.70.89.111
User4	Password		

```
Total Entries : 4
```

```
DGS-3000-26TC:admin#
```

75-7 config ssh server

Description

This command is used to configure the SSH server general information.

Format

```
config ssh server {maxsession <int 1-8> | contimeout <sec 120-600> | authfail <int 2-20> | rekey [10min | 30min | 60min | never] | port <tcp_port_number 1-65535>}
```

Parameters

maxsession - (Optional) Specify SSH server maximum session at the same time, maximum 8 sessions.

<int 1-8> - Enter the maximum session value here. This value must be between 1 and 8.

contimeout - (Optional) Specify SSH server connection time-out, in the unit of second.

<sec 120-600> - Enter the connection time-out value here. This value must be between 120 and 600 seconds.

authfail - (Optional) Specify user maximum fail attempts.

<int 2-20> - Enter the user maximum fail attempts value here. This value must be between 2 and 20.

rekey - (Optional) Specify time to re-generate session key. There are 10 minutes, 30 minutes, 60 minutes and never for the selection, which the never means do NOT re-generate session key

10min - Specify that the re-generate session key time will be 10 minutes.

30min - Specify that the re-generate session key time will be 30 minutes.

60min - Specify that the re-generate session key time will be 60 minutes.

never - Specify that the re-generate session key time will be set to never.

port - (Optional) Specify the TCP port used to communication between SSH client and server. The default value is 22.

<tcp_port_number 1-65535> - Enter the TCP port number here. This value must be between 1 and 65535.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure SSH server maximum session number is 3:

```
DGS-3000-26TC:admin#config ssh server maxsession 3
Command: config ssh server maxsession 3

Success.

DGS-3000-26TC:admin#
```

75-8 enable ssh

Description

This command is used to enable SSH server services.

Format

enable ssh

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable SSH server:

```
DGS-3000-26TC:admin#enable ssh
Command: enable ssh

Success.

DGS-3000-26TC:admin#
```

75-9 disable ssh

Description

This command is used to disable SSH server services.

Format

disable ssh

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the SSH server services:

```
DGS-3000-26TC:admin#disable ssh
Command: disable ssh

Success.

DGS-3000-26TC:admin#
```

75-10 show ssh server

Description

This command is used to show the SSH server general information.

Format

show ssh server

Parameters

None.

Restrictions

None.

Example

To show SSH server:

```
DGS-3000-26TC:admin#show ssh server
Command: show ssh server

The SSH Server Configuration
Maximum Session           : 8
Connection Timeout       : 120
Authentication Fail Attempts : 2
Rekey Timeout             : Never
TCP Port Number           : 22

DGS-3000-26TC:admin#
```

Chapter 76 Secure Sockets Layer (SSL)

Command List

download ssl certificate {<ipaddr> certfilename <path_filename 64> keyfilename <path_filename 64>}

enable ssl {ciphersuite {RSA_with_RC4_128_MD5 | RSA_with_3DES_EDE_CBC_SHA | DHE_DSS_with_3DES_EDE_CBC_SHA | RSA_EXPORT_with_RC4_40_MD5}}

disable ssl {ciphersuite {RSA_with_RC4_128_MD5 | RSA_with_3DES_EDE_CBC_SHA | DHE_DSS_with_3DES_EDE_CBC_SHA | RSA_EXPORT_with_RC4_40_MD5}}

show ssl {certificate}

show ssl cachetimeout

config ssl cachetimeout <value 60-86400>

76-1 download ssl certificate

Description

This command is used to download the certificate to the device according to the certificate level. The user can download the specified certificate to the device which must, according to desired key exchange algorithm. For RSA key exchange, the user must download RSA type certificate and for DHS_DSS is using the DSA certificate for key exchange.

Format

download ssl certificate {<ipaddr> certfilename <path_filename 64> keyfilename <path_filename 64>}

Parameters

<ipaddr> - (Optional) Enter the TFTP server IP address used for this configuration here.

certfilename - (Optional) Specify the desired certificate file name.

<path_filename 64> - Enter the certificate file path with respect to the TFTP server root path. This can be up to 64 characters long.

keyfilename - (Optional) Specify the private key file name which accompany with the certificate.

<path_filename 64> - Enter the private key file path with respect to the TFTP server root path. This can be up to 64 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To download certificate from TFTP server:

```
DGS-3000-26TC:admin#download ssl certificate 10.55.47.1 certfilename cert.der keyfilename pkey.der
```

```
Command: download ssl certificate 10.55.47.1 certfilename cert.der keyfilename pkey.der
```

```
Certificate Loaded Successfully!
```

```
DGS-3000-26TC:admin#
```

76-2 enable ssl

Description

This command is used to enable SSL status and its ciphersuites. Using “enable ssl” command will enable SSL feature which means enable SSLv3 and TLSv1. For each ciphersuites, user must specify it by this command.

Format

```
enable ssl {ciphersuite {RSA_with_RC4_128_MD5 | RSA_with_3DES_EDE_CBC_SHA |
DHE_DSS_with_3DES_EDE_CBC_SHA | RSA_EXPORT_with_RC4_40_MD5}}
```

Parameters

ciphersuite - (Optional) Specify the cipher suite combination used for this configuration.

RSA_with_RC4_128_MD5 - Indicates RSA key exchange with RC4 128 bits encryption and MD5 hash.

RSA_with_3DES_EDE_CBC_SHA - Indicates RSA key exchange with 3DES_EDE_CBC encryption and SHA hash.

DHE_DSS_with_3DES_EDE_CBC_SHA - Indicates DH key exchange with 3DES_EDE_CBC encryption and SHA hash.

RSA_EXPORT_with_RC4_40_MD5 - Indicates RSA_EXPORT key exchange with RC4 40 bits encryption and MD5 hash.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the SSL ciphersuite for RSA_with_RC4_128_MD5:

```
DGS-3000-26TC:admin#enable ssl
Command: enable ssl

Note: Web will be disabled if SSL is enabled.
Success.

DGS-3000-26TC:admin#
```

To enable SSL:

```
DGS-3000-26TC:admin#enable ssl
Command: enable ssl

Success.

DGS-3000-26TC:admin#
```

NOTE: Web will be disabled when SSL is enabled.

76-3 disable ssl

Description

This command is used to disable SSL feature and supported ciphersuites.

Format

```
disable ssl {ciphersuite {RSA_with_RC4_128_MD5 | RSA_with_3DES_EDE_CBC_SHA |
DHE_DSS_with_3DES_EDE_CBC_SHA | RSA_EXPORT_with_RC4_40_MD5}}
```

Parameters

ciphersuite - (Optional) Specify the cipher suite combination used for this configuration.

RSA_with_RC4_128_MD5 - Indicates RSA key exchange with RC4 128 bits encryption and MD5 hash.

RSA_with_3DES_EDE_CBC_SHA - Indicates RSA key exchange with 3DES_EDE_CBC encryption and SHA hash.

DHE_DSS_with_3DES_EDE_CBC_SHA - Indicates DH key exchange with 3DES_EDE_CBC encryption and SHA hash.

RSA_EXPORT_with_RC4_40_MD5 - Indicates RSA_EXPORT key exchange with RC4 40 bits encryption and MD5 hash.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable SSL ciphersuite for RSA_with_RC4_128_MD5:

```
DGS-3000-26TC:admin#disable ssl ciphersuite RSA_with_RC4_128_MD5
Command: disable ssl ciphersuite RSA_with_RC4_128_MD5

Success.

DGS-3000-26TC:admin#
```

To disable SSL:

```
DGS-3000-26TC:admin#disable ssl
Command: disable ssl

Success.

DGS-3000-26TC:admin#
```

76-4 show ssl**Description**

This command is used to display the certificate status. User must download specified certificate type according to desired key exchange algorithm. The options may be no certificate, RSA type or DSA type certificate

Format

```
show ssl {certificate}
```

Parameters

certificate - (Optional) Specify that the SSL certificate will be displayed.

Restrictions

None.

Example

To show SSL:

```
DGS-3000-26TC:admin#show ssl
Commands: show ssl

SSL Status                               Enabled

RSA_WITH_RC4_128_MD5                     0x0004  Enabled
RSA_WITH_3DES_EDE_CBC_SHA                 0x000A  Enabled
DHE_DSS_WITH_3DES_EDE_CBC_SHA            0x0013  Enabled
RSA_EXPORT_WITH_RC4_40_MD5               0x0003  Enabled

DGS-3000-26TC:admin#
```

To show certificate:

```
DGS-3000-26TC:admin#show ssl certificate
Command: show ssl certificate

Loaded with RSA Certificate!

DGS-3000-26TC:admin#
```

76-5 show ssl cachetimeout**Description**

This command is used to show cache timeout value which is designed for dlktimer library to remove the session id after expired. In order to support the resume session feature, the SSL library keep the session id in web server, and invoking the dlktimer library to remove this session id by cache timeout value.

Format

show ssl cachetimeout

Parameters

None.

Restrictions

None.

Example

To show SSL cache timeout:

```
DGS-3000-26TC:admin#show ssl cachetimeout
Commands: show ssl cachetimeout

Cache timeout is 600 second(s)

DGS-3000-26TC:admin#
```

76-6 config ssl cachetimeout

Description

This command is used to configure cache timeout value which is designed for dlktimer library to remove the session id after expired. In order to support the resume session feature, the SSL library keep the session id in web server, and invoking the dlktimer library to remove this session id by cache timeout value. The unit of argument's value is second and it's boundary is between 60 (1 minute) and 86400 (24 hours). Default value is 600 seconds.

Format

config ssl cachetimeout <value 60-86400>

Parameters

<value 60-86400> - Enter the timeout value here. This value must be between 60 and 86400.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the SSL cache timeout value to 60:

```
DGS-3000-26TC:admin#config ssl cachetimeout 60
Commands: config ssl cachetimeout 60

Success.

DGS-3000-26TC:admin#
```


Chapter 77 Show Technical Support Command List

show tech_support

upload tech_support_toTFTP {<ipaddr> <path_filename 64>}

77-1 show tech_support

Description

This command is especially used by the technical support personnel to dump the device overall operation information.

- Basic System Information
- System Log
- Running Configuration
- Layer 1 Information
- Layer 2 Information
- Storm Control
- Layer 2 Multicast
- Layer 3 Information
- Security
- Application
- OS Status
- Management

This command can be interrupted by Ctrl-C or ESC when it is executing.

Format

show tech_support

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To show the information of technique's support:

```

DGS-3000-26TC:admin#show tech_support
Command: show tech_support

#-----
#
#           DGS-3000-26TC Gigabit Ethernet Switch
#           Technical Support Information
#
#           Firmware: Build 2.00.004
#           Copyright(C) 2016 D-Link Corporation. All rights reserved.
#-----

*****      Basic System Information      *****

[SYS 2016-2-20 03:09:28]

Boot Time           : 20 Feb 2016  00:53:18
RTC Time            : 2016/02/20 03:09:28
Boot PROM Version   : Build 2.00.001
Firmware Version    : Build 2.00.004
Hardware Version     : A2
MAC Address         : 00-01-02-03-04-00
[ERROR_LOG 2016-2-20 03:09:28]

*****
# debug log: 1
# firmware version: 0.00.000
# level: CPU exception
# clock: 9710 ms
# time : 2016-01-01 00:00:10

```

77-2 upload tech_support_toTFTP

Description

This command is used to upload the information of technique's support to TFTP server.

- Basic System Information
- System Log
- Running Configuration
- Layer 1 Information
- Layer 2 Information
- Storm Control
- Layer 2 Multicast
- Layer 3 Information
- Security
- Application
- OS Status
- Management

This command can be interrupted by Ctrl-C or ESC when it is executing.

Format

upload tech_support_toTFTP {<ipaddr> <path_filename 64>}

Parameters

<ipaddr> - (Optional) Enter the IP address of TFTP server.

<path_filename 64> - (Optional) Enter the file name to store the information of technique's support in TFTP server. The max size of the file name is 64.

Restrictions

Only Administrators and Operators can issue this command.

Example

To upload the information of technique's support:

```
DGS-3000-26TC:admin#upload tech_support_toTFTP 10.0.0.66 tech_report.txt
Command: upload tech_support_toTFTP 10.0.0.66 tech_report.txt

Connecting to server..... Done.
Upload techsupport file..... Done.

Success.

DGS-3000-26TC:admin#
```

Chapter 78 Simple Mail Transfer Protocol (SMTP) Command List

enable smtp

disable smtp

config smtp {server <ipaddr> | server_port <tcp_port_number 1-65535> | self_mail_addr <mail_addr 64> | [add mail_receiver <mail_addr 64> | delete mail_receiver <index 1-8>] | server_ipv6 <ipv6addr> | server_port_ipv6 <tcp_port_number 1-65535>}(1)

show smtp

smtp send_testmsg

78-1 enable smtp

Description

This command is used to enable the SMTP status.

Format**enable smtp****Parameters**

None.

Restrictions

Only Administrators can issue this command.

Example

To enable SMTP status:

```
DGS-3000-26TC:admin#enable smtp
Command: enable smtp

Success.

DGS-3000-26TC:admin#
```

78-2 disable smtp

Description

This command is used to disable SMTP status.

Format**disable smtp****Parameters**

None.

Restrictions

Only Administrators can issue this command.

Example

To disable SMTP status:

```
DGS-3000-26TC:admin#disable smtp
Command: disable smtp

Success.

DGS-3000-26TC:admin#
```

78-3 config smtp

Description

This command is used to configure SMTP client parameters.

Format

```
config smtp {server <ipaddr> | server_port <tcp_port_number 1-65535> | self_mail_addr <mail_addr 64> |
[add mail_receiver <mail_addr 64> | delete mail_receiver <index 1-8>] | server_ipv6 <ipv6addr> |
server_port_ipv6 <tcp_port_number 1-65535>}(1)
```

Parameters

server - Specify the SMTP server IP address. <ipaddr> - Enter the SMTP server IP address
server_port - Specify the SMTP server port. <tcp_port_number 1-65535> - Enter the port number between 1 and 65535.
self_mail_addr - Specify the sender's mail address. <mail_addr 64> - Enter the mail address with maximum of 64 characters.
add mail_receiver - Specify to add mail receiver's address. <mail_addr 64> - Enter the mail address with maximum of 64 characters.
delete mail_receiver - Specify to delete mail receiver's address. <index 1-8> - Enter the index number.
server_ipv6 - Specify the SMTP server IPv6 address. <ipv6addr> - Enter the IPv6 server IP address.
server_port_ipv6 - Specify the SMTP IPv6 server's TCP port. <tcp_port_number 1-65535> - Enter the TCP port number.

Restrictions

Only Administrators can issue this command.

Example

To configure an SMTP server IP address, this demonstrates how to configure the server IP to 172.18.208.9 and the TCP port to 25:

```
DGS-3000-26TC:admin# config smtp server 172.18.208.9 server_port 25
Command: config smtp server 172.18.208.9 server_port 25

Success.

DGS-3000-26TC:admin#
```

To configure the mail's sender address as: sender@mail.com:

```
DGS-3000-26TC:admin# config smtp self_mail_addr sender@mail.com
Command: config smtp self_mail_addr sender@mail.com

Success.

DGS-3000-26TC:admin#
```

To configure how to add the mail's receiver address as receiver@mail.com:

```
DGS-3000-26TC:admin# config smtp add mail_receiver receiver@mail.com
Command: config smtp add mail_receiver receiver@mail.com

Success.

DGS-3000-26TC:admin#
```

To demonstrates how to delete a mail receiver address:

```
DGS-3000-26TC:admin# config smtp delete mail_receiver 2
Command: config smtp delete mail_receiver 2

Success.

DGS-3000-26TC:admin#
```

To configure the IPv6 server to 172:18:208::9 and the TCP port to 25:

```
DGS-3000-26TC:admin# config smtp server 172:18:208::9 server_port_ipv6 25
Command: config smtp server 172:18:208::9 server_port_ipv6 25

Success.

DGS-3000-26TC:admin#
```

78-4 show smtp

Description

This command is display the current SMTP information.

Format

show smtp

Parameters

None.

Restrictions

None.

Example

To display the current SMTPv6 information:

```

DGS-3000-26TC:admin#show smtp
Command: show smtp

SMTP Status           : Enabled
SMTP Server Address   : 172.18.208.9
SMTP Server Port      : 25
SMTP IPv6 Server Address: 172:18:208::9
SMTP IPv6 Server Port : 25
Self Mail Address     : Smtplib@30xx.dev

Index           Mail Receiver Address
-----
1               Black@alpha.com
2               Smith@alpha.com
3               Christiana@alpha.com
4               John@alpha.com
5               Bob@alpha.com
6               Alice@alpha.com
7               Julia@alpha.com
8               Rogger@alpha.com

DGS-3000-26TC:admin#

```

78-5 smtp send_testmsg**Description**

This command is used to test whether the SMTP server can be reached.

Format**smtp send_testmsg****Parameters**

None.

Restrictions

Only Administrators can issue this command.

Example

To test whether the SMTP server can be reached:

```
DGS-3000-26TC:admin#smtp send_testmsg
```

```
Command: smtp send_testmsg
```

```
Subject:e-mail heading
```

```
Content:e-mail content
```

```
Sending mail, please wait...
```

```
Success.
```

```
DGS-3000-26TC:admin#
```


Chapter 79 Simple Network Management Protocol (SNMP) Command List

enable community_encryption
disable community_encryption
show community_encryption
create snmp community <community_string 32> view <view_name 32> [read_only read_write]
delete snmp community <community_string 32>
show snmp community {<community_string 32>}
create snmp community_masking view <view_name 32> [read_only read_write]
create snmp user <user_name 32> <groupname 32> {encrypted [by_password auth [md5 <auth_password 8-16> sha <auth_password 8-20>] priv [none des <priv_password 8-16>] by_key auth [md5 <auth_key 32-32> sha <auth_key 40-40>] priv [none des <priv_key 32-32>]]}
delete snmp user <username 32>
show snmp user
create snmp group <groupname 32> [v1 v2c v3 [noauth_nopriv auth_nopriv auth_priv]] {read_view <view_name 32> write_view <view_name 32> notify_view <view_name 32>}
delete snmp group <groupname 32>
show snmp groups
create snmp view <view_name 32> <oid> view_type [included excluded]
delete snmp view <view_name 32> [all <oid>]
show snmp view {<view_name 32>}
create snmp [host <ipaddr> v6host <ipv6addr>] [v1 v2c v3 [noauth_nopriv auth_nopriv auth_priv]] <auth_string 32>
delete snmp [host <ipaddr> v6host <ipv6addr>]
show snmp host {<ipaddr>}
show snmp v6host {<ipv6addr>}
config snmp engineID <snmp_engineID 10-64>
show snmp engineID
enable snmp
disable snmp
config snmp system_name {<sw_name>}
config snmp system_location {<sw_location>}
config snmp system_contact {<sw_contact>}
enable snmp traps
disable snmp traps
enable snmp authenticate_traps
disable snmp authenticate_traps
enable snmp linkchange_traps
disable snmp linkchange_traps
config snmp linkchange_traps ports [all <portlist>] [enable disable]
config snmp coldstart_traps [enable disable]
config snmp warmstart_traps [enable disable]
show snmp traps {linkchange_traps {ports <portlist>}}
config rmon trap {rising_alarm [enable disable] falling_alarm [enable disable]} (1)
show rmon

79-1 enable community_encryption

Description

This command is used to enable the encryption state on the SNMP community string.

Format

enable community_encryption

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable the encryption state on an SNMP community string:

```
DGS-3000-26TC:admin# enable community_encryption
Command: enable community_encryption

Success.

DGS-3000-26TC:admin#
```

79-2 disable community_encryption

Description

This command is used to disable the encryption state on the SNMP community string.

Format

disable community_encryption

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable the encryption state on the SNMP community string:

```
DGS-3000-26TC:admin# disable community_encryption
Command: disable community_encryption

Success.

DGS-3000-26TC:admin#
```

79-3 show community_encryption

Description

This command is used to display the encryption state on the SNMP community string.

Format

show community_encryption

Parameters

None.

Restrictions

None.

Example

To show the encryption state on the SNMP community string:

```
DGS-3000-26TC:admin# show community_encryption
Command: show community_encryption

SNMP Community Encryption State : Enabled

DGS-3000-26TC:admin#
```

79-4 create snmp community

Description

This command is used to create an SNMP community string.

Use an SNMP community string to define the relationship between the SNMP manager and the agent. The community string acts like a password to permit access to the agent on the Switch. You can specify one or more of the following characteristics associated with the string:

An access list of IP addresses of the SNMP managers that are permitted to use the community string to gain access to the agent.

A MIB view, which defines the subset of all MIB objects accessible to the given community.

Read and write or read-only permission for the MIB objects accessible to the community.

Format

create snmp community <community_string 32> view <view_name 32> [read_only | read_write]

Parameters

<community_string 32> - Enter the community string value here. This string can be up to 32 characters long.

view_name - Specify the view name of the MIB.

<view_name 32> - Enter the MIB view name here. This name can be up to 32 characters long.

read_only - Allows the user to use the above mentioned community string to have read-only access to the Switch's SNMP agent. The default read-only community string is public.

read_write - Allows the user to use the above mentioned community string to have read and write access to the Switch's SNMP agent. The default read-write community string is private.

Restrictions

Only Administrators can issue this command.

Example

To create a read-only level SNMP community "System" with a "CommunityView" view:

```
DGS-3000-26TC:admin#create snmp community System view CommunityView read_only
Command: create snmp community System view CommunityView read_only

Success.

DGS-3000-26TC:admin#
```

79-5 delete snmp community

Description

This command is used to delete an SNMP community string.

Format

delete snmp community <community_string 32>

Parameters

<community_string 32> - Enter the community string value here. This value can be up to 32 characters long.

Restrictions

Only Administrators can issue this command.

Example

To delete a SNMP community "System":

```
DGS-3000-26TC:admin#delete snmp community System
Command: delete snmp community System

Success.

DGS-3000-26TC:admin#
```

79-6 show snmp community

Description

This command is used to display the community string configurations.

Format

show snmp community {<community_string 32>}

Parameters

<community_string 32> - (Optional) Enter the Community string.
If no parameter is specified, all community string information will be displayed.

Restrictions

None.

Example

To display SNMP community:

```
DGS-3000-26TC:admin#show snmp community
Command: show snmp community

SNMP Community Table
Community Name          View Name              Access Right
-----
private                 CommunityView          read_write
public                  CommunityView          read_only

Total Entries : 2

DGS-3000-26TC:admin#
```

79-7 create snmp community_masking view

Description

This command is used to choose a security method for creating an SNMP community string, but the community string encrypted or not depends on the SNMP community encryption state.

If users use this command to create an SNMP community string, the community string that the user inputs will be displayed as "*", and the user will have to double input (confirm) the SNMP community string when creating an SNMP community.

Format

create snmp community_masking view <view_name 32> [read_only | read_write]

Parameters

<view_name 32> - Enter the MIB view name used here. This name can be up to 32 characters long.
read_only - Specify that the user, using the community string, will have read only access to the switch's SNMP agent.
read_write - Specify that the user, using the community string, will have read/write access to the switch's SNMP agent.

Restrictions

Only Administrators can issue this command.

Example

To create an SNMP community string called "community123" with the "read_only" security method:

```
DGS-3000-26TC:admin# create snmp community_masking view CommunityView read_only
Command: create snmp community_masking view CommunityView read_only

Enter a case-sensitive community:*****
Enter the community again for confirmation:*****

Success.

DGS-3000-26TC:admin#
```

79-8 create snmp user

Description

This command is used to create a new user to an SNMP group originated by this command.

Format

```
create snmp user <user_name 32> <groupname 32> {encrypted [by_password auth [md5 <auth_password 8-16> | sha <auth_password 8-20>] priv [none | des <priv_password 8-16>] | by_key auth [md5 <auth_key 32-32> | sha <auth_key 40-40>] priv [none | des <priv_key 32-32>]]}
```

Parameters

<user_name 32> - (Optional) Enter the name of the user on the host that connects to the agent. The name can be up to 32 characters long.

<groupname 32> - (Optional) Enter the name of the group to which the user is associated. The name can be up to 32 characters long.

encrypted - Specify whether the password appears in encrypted format.

by_password - Indicates input password for authentication and privacy.

auth - Initiates an authentication level setting session. The options are md5 and sha.

md5 - The HMAC-MD5-96 authentication level.

<auth_password 8-16> - Enter the MD5 authentication password here. This value must be between 8 and 16 characters.

sha - The HMAC-SHA-96 authentication level.

<auth_password 8-20> - Enter the SHA authentication password here. This value must be between 8 and 20 characters.

priv - A privacy key used by DES. It is hex string type.

none - Specify that no encryption will be used for the privacy key.

des - Specify that the DES encryption will be used for the privacy key.

<priv_password 8-16> - Enter the DES password value here. This value must be between 8 and 16 characters long.

by_key - Indicates input key for authentication and privacy.

auth - An authentication string used by MD5 or SHA1.

md5 - An authentication key used by MD5, it is hex string type.

<auth_key 32-32> - Enter the MD5 authentication key here. This value must be 32 characters long.

sha - An authentication key used by SHA1, it is hex string type.

<auth_key 40-40> - Enter the SHA authentication key here. This value must be 32 characters long.

priv - A privacy key used by DES, it is hex string type.

none - Specify that no encryption will be used for the privacy key.

des - Specify that the DES encryption will be used for the privacy key.

<priv_key 32-32> - Enter the DES privacy key here. This value must be 32 characters long.

Restrictions

Only Administrators can issue this command.

Example

To create a SNMP user “user123” with group “group123”:

```
DGS-3000-26TC:admin#create snmp user user123 group123 encrypted by_password auth md5 12345678
priv des 12345678
Command: create snmp user user123 group123 encrypted by_password auth md5 12345678 priv des
12345678

Success.

DGS-3000-26TC:admin#
```

79-9 delete snmp user

Description

This command is used to remove a user from an SNMP group and delete the associated group in SNMP group.

Format

delete snmp user <username 32>

Parameters

<username 32> - Enter the name of the user on the host that connects to the agent. The name can be up to 32 characters long.

Restrictions

Only Administrators can issue this command.

Example

To delete a SNMP user “user123”:

```
DGS-3000-26TC:admin#delete snmp user user123
Command: delete snmp user user123

Success.

DGS-3000-26TC:admin#
```

79-10 show snmp user

Description

This command is used to display information on each SNMP username in the group username table.

Format

show snmp user

Parameters

None.

Restrictions

None.

Example

To show SNMP user:

```

DGS-3000-26TC:admin#show snmp user
Command: show snmp user

Username                               Group Name                               VerAuthPriv
-----                               -
initial                                 initial                                   V3 NoneNone
user123                                 group123                                 V3 MD5 DES

Total Entries : 2

DGS-3000-26TC:admin#

```

79-11 create snmp group

Description

This command is used to create a new SNMP group, or a table that maps SNMP users to SNMP views.

Format

create snmp group <groupname 32> [v1 | v2c | v3 [noauth_nopriv | auth_nopriv | auth_priv]] {read_view <view_name 32> | write_view <view_name 32> | notify_view <view_name 32>}

Parameters

<groupname 32> - Enter the group name here. This name can be up to 32 characters long.
v1 - The least secure of the possible security models.
v2c - The second least secure of the possible security models.
v3 - The most secure of the possible.
noauth_nopriv - Neither support packet authentication nor encrypting.
auth_nopriv - Support packet authentication.
auth_priv - Support packet authentication and encrypting.
read_view - (Optional) Specify that the view name would be read.
<view_name 32> - Enter the read view name here. This name can be up to 32 characters long.
write_view - (Optional) Specify that the view name would be written.
<view_name 32> - Enter the write view name here. This name can be up to 32 characters long.
notify_view - (Optional) Specify that the view name would be notified.
<view_name 32> - Enter the notify view name here. This name can be up to 32 characters long.

Restrictions

Only Administrators can issue this command.

Example

To create SNMP group "group123":


```
DGS-3000-26TC:admin#create snmp group group123 v3 auth_priv read_view CommunityView
write_view CommunityView notify_view CommunityView
Command: create snmp group group123 v3 auth_priv read_view CommunityView write_view
CommunityView notify_view CommunityView

Success.

DGS-3000-26TC:admin#
```

79-12 delete snmp group

Description

This command is used to remove a SNMP group.

Format

delete snmp group <groupname 32>

Parameters

<groupname 32> - Enter the group name to be deleted.

Restrictions

Only Administrators can issue this command.

Example

To delete SNMP group "group123":

```
DGS-3000-26TC:admin#delete snmp group group123
Command: delete snmp group group123

Success.

DGS-3000-26TC:admin#
```

79-13 show snmp groups

Description

This command is used to display the names of groups on the Switch and the security model, level, the status of the different views.

Format

show snmp groups

Parameters

None.

Restrictions

None.

Example

To show SNMP groups:

```

DGS-3000-26TC:admin#show snmp groups
Command: show snmp groups

Vacm Access Table Settings

Group Name      : public
ReadView Name   : CommunityView
WriteView Name  :
Notify View Name : CommunityView
Security Model  : SNMPv1
Security Level   : NoAuthNoPriv

Group Name      : public
ReadView Name   : CommunityView
WriteView Name  :
Notify View Name : CommunityView
Security Model  : SNMPv2
Security Level   : NoAuthNoPriv

Group Name      : initial
ReadView Name   : restricted
WriteView Name  :
Notify View Name : restricted
Security Model  : SNMPv3
Security Level   : NoAuthNoPriv

Group Name      : WriteGroup
ReadView Name   : CommunityView
WriteView Name  : CommunityView
Notify View Name : CommunityView
Security Model  : SNMPv2
Security Level   : NoAuthNoPriv

Total Entries: 10

DGS-3000-26TC:admin#

```

79-14 create snmp view

Description

This command is used to assign views to community strings to limit which MIB objects an SNMP manager can access.

Format

create snmp view <view_name 32> <oid> view_type [included | excluded]

Parameters

<view_name 32> - Enter the view name here. The name can be up to 32 characters long.

<oid> - Enter the object-Identified tree, or MIB tree.

view_type - Specify the access type of the MIB tree in this view.

included - Includes for this view.

excluded - Excludes for this view.

Restrictions

Only Administrators can issue this command.

Example

To create SNMP view "view123":

```
DGS-3000-26TC:admin#create snmp view view123 1.3.6 view_type included
Command: create snmp view view123 1.3.6 view_type included

Success.

DGS-3000-26TC:admin#
```

79-15 delete snmp view

Description

This command is used to remove a view record.

Format

delete snmp view <view_name 32> [all | <oid>]

Parameters

<view_name 32> - Enter the view name to be deleted. The name can be up to 32 characters long.

all - Specify that all view records will be removed.

<oid> - Enter the Object-Identified tree, or MIB tree.

Restrictions

Only Administrators can issue this command.

Example

To delete SNMP view "view123":

```
DGS-3000-26TC:admin#delete snmp view view123 all
Command: delete snmp view view123 all

Success.

DGS-3000-26TC:admin#
```

79-16 show snmp view

Description

This command is used to display the SNMP view record.

Format

show snmp view {<view_name 32>}

Parameters

<view_name 32> - Enter the view name to be displayed. The name can be up to 32 characters long.

Restrictions

None.

Example

To show SNMP view:

```
DGS-3000-26TC:admin#show snmp view
Command: show snmp view

Vacm View Table Settings
View Name          Subtree          View Type
-----
view123            1.3.6            Included
restricted         1.3.6.1.2.1.1   Included
restricted         1.3.6.1.2.1.11  Included
restricted         1.3.6.1.6.3.10.2.1 Included
restricted         1.3.6.1.6.3.11.2.1 Included
restricted         1.3.6.1.6.3.15.1.1 Included
CommunityView     1                Included
CommunityView     1.3.6.1.6.3      Excluded
CommunityView     1.3.6.1.6.3.1    Included

Total Entries: 9

DGS-3000-26TC:admin#
```

79-17 create snmp

Description

This command is used to create a recipient of an SNMP trap operation.

Format

create snmp [host <ipaddr> | v6host <ipv6addr>] [v1 | v2c | v3 [noauth_nopriv | auth_nopriv | auth_priv]] <auth_string 32>

Parameters

host - Specify the recipient for which the traps are targeted.
<ipaddr> - Enter the IP address of the recipient for which the traps are targeted.

v6host - Specify the IPv6 host address to which the trap packet will be sent.
<ipv6addr> - Enter the IPv6 address of the recipient for which the traps are targeted.

v1 - Specify that SNMPv1 will be used. This is the least secure of the possible security models.

v2c - Specify that SNMPv2c will be used. This is the second least secure of the possible security models.

v3 - Specify that SNMPv3 will be used. This is the most secure of the possible security models.
noauth_nopriv - Neither supports packet authentication nor encryption.
auth_nopriv - Supports packet authentication.

auth_priv - Supports packet authentication and encryption.

<auth_string 32> - Enter the authentication string. If the v1 or v2 is specified, the auth_string presents the community string, and it must be one of the entries in the community table. If the v3 is specified, the auth_string presents the user name, and it must be one of the entries in the user table.

Restrictions

Only Administrators can issue this command.

Example

To create SNMP host "10.0.0.1" with community string "public":

```
DGS-3000-26TC:admin#create snmp host 10.0.0.1 v1 public
Command: create snmp host 10.0.0.1 v1 public

Success.

DGS-3000-26TC:admin#
```

79-18 delete snmp

Description

This command is used to delete a recipient of an SNMP trap operation.

Format

delete snmp [host <ipaddr> | v6host <ipv6addr>]

Parameters

host - The IP address of the recipient for which the traps are targeted.

<ipaddr> - Enter the IP address used for the configuration here.

v6host - The IPv6 address of the recipient for which the traps are targeted.

<ipv6addr> - Enter the IPv6 address used for the configuration here.

Restrictions

Only Administrators can issue this command.

Example

To delete SNMP host "10.0.0.1":

```
DGS-3000-26TC:admin#delete snmp host 10.0.0.1
Command: delete snmp host 10.0.0.1

Success.

DGS-3000-26TC:admin#
```

79-19 show snmp host

Description

This command is used to display the recipient for which the traps are targeted.

Format

show snmp host {<ipaddr>}

Parameters

<ipaddr> - (Optional) Enter the IP address of the recipient for which the traps are targeted.
If no parameter specified, all SNMP hosts will be displayed.

Restrictions

None.

Example

To show SNMP host:

```
DGS-3000-26TC:admin#show snmp host
Command: show snmp host

SNMP Host Table
Host IP Address   SNMP Version      Community Name / SNMPv3 User Name
-----
10.90.90.3        V3 noauthnopriv  initial
10.90.90.2        V2c               private
10.90.90.1        V1                public
10.90.90.4        V3 authnopriv    user123
10.90.90.5        V3 authpriv      user234

Total Entries : 5

DGS-3000-26TC:
```

79-20 show snmp v6host

Description

This command is used to display the SNMP version 6 hosts.

Format

show snmp v6host {<ipv6addr>}

Parameters

<ipv6addr> - (Optional) Enter the IPv6 host address used for the configuration here.
If no parameter specified, SNMP version 6 hosts will be displayed.

Restrictions

None.

Example

To show SNMP v6 host:

```

DGS-3000-26TC:admin#show snmp v6host
Command: show snmp v6host

SNMP Host Table
-----
Host IPv6 Address : 3FFE::3
SNMP Version      : V3 na/np
Community Name/SNMPv3 User Name : initial

Host IPv6 Address : 3FFE::2
SNMP Version      : V2c
Community Name/SNMPv3 User Name : private

Host IPv6 Address : 3FFE::1
SNMP Version      : V1
Community Name/SNMPv3 User Name : public

Host IPv6 Address : 3FFE::3
SNMP Version      : V3 a/np
Community Name/SNMPv3 User Name : user123

Host IPv6 Address : 3FFE::3
SNMP Version      : V3 a/ p
Community Name/SNMPv3 User Name : user234

Total Entries: 5

DGS-3000-26TC:admin#

```

79-21 config snmp engineID

Description

This command is used to configure a identifier for the SNMP engine on the Switch.

Format

config snmp engineID <snmp_engineID 10-64>

Parameters

<snmp_engineID 10-64> - Enter the SNMP engine ID here. It is octet string type. It accepts the hex number directly. This value must be between 10 and 64.

Restrictions

Only Administrators can issue this command.

Example

To configure SNMP engine ID to "1023457890":

```
DGS-3000-26TC:admin#config snmp engineID 1023457890
Command: config snmp engineID 1023457890

Success.

DGS-3000-26TC:admin#
```

79-22 show snmp engineID

Description

This command is used to display the ID of the SNMP engine on the Switch. This ID consists out of 11 hexadecimal octets. The default value is suggested in RFC 2271. The first bit is 1 and the first four octets are set to the binary equivalent of the agent's SNMP management private enterprise number as assigned by IANA, D-Link is 171. The fifth octet is 03 to indicate that the MAC address of the Switch will be used in octets 6 to 11.

Format

show snmp engineID

Parameters

None.

Restrictions

None.

Example

To show SNMP engine ID:

```
DGS-3000-26TC:admin#show snmp engineID
Command: show snmp engineID

SNMP Engine ID : 800000ab03f07d68300020

DGS-3000-26TC:admin#
```

79-23 enable snmp

Description

This command is used to enable the SNMP function.

Format

enable snmp

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable SNMP:

```
DGS-3000-26TC:admin#enable snmp
Command: enable snmp

Success.

DGS-3000-26TC:admin#
```

79-24 disable snmp

Description

This command is used to disable the SNMP function.

Format

disable snmp

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable SNMP:

```
DGS-3000-26TC:admin#disable snmp
Command: disable snmp

Success.

DGS-3000-26TC:admin#
```

79-25 config snmp system_name

Description

This command is used to configure the name for the Switch.

Format

config snmp system_name {<sw_name>}

Parameters

<sw_name> - (Optional) Enter the SNMP system name used here. This name can be up to 255 characters long.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the Switch name for "DGS-30xx":

```
DGS-3000-26TC:admin#config snmp system_name DGS-30xx
Command: config snmp system_name DGS-30xx

Success.

DGS-3000-26TC:admin#
```

79-26 config snmp system_location

Description

This command is used to enter a description of the location of the Switch.

Format

config snmp system_location {<sw_location>}

Parameters

<sw_location> - (Optional) Enter the SNMP system location string here. This string can be up to 255 characters long.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the Switch location for "HQ 5F":

```
DGS-3000-26TC:admin#config snmp system_location HQ 5F
Command: config snmp system_location HQ 5F

Success.

DGS-3000-26TC:admin#
```

79-27 config snmp system_contact

Description

This command is used to enter the name of a contact person who is responsible for the Switch.

Format

config snmp system_contact {<sw_contact>}

Parameters

<sw_contact> - (Optional) Enter the SNMP system contact string here. This name can be up to 255 characters long.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the Switch contact to "MIS Department II":

```
DGS-3000-26TC:admin#config snmp system_contact "MIS Department II"
Command: config snmp system_contact "MIS Department II"

Success.

DGS-3000-26TC:admin#
```

79-28 enable snmp traps

Description

This command is used to enable SNMP trap support.

Format

enable snmp traps

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable SNMP trap support:

```
DGS-3000-26TC:admin#enable snmp traps
Command: enable snmp traps

Success.

DGS-3000-26TC:admin#
```

79-29 disable snmp traps

Description

This command is used to disable SNMP trap support on the Switch.

Format

disable snmp traps

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To prevent SNMP traps from being sent from the Switch:

```
DGS-3000-26TC:admin#disable snmp traps
Command: disable snmp traps

Success.

DGS-3000-26TC:admin#
```

79-30 enable snmp authenticate_traps

Description

This command is used to enable SNMP authentication failure trap support.

Format

enable snmp authenticate_traps

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable SNMP authentication trap support:

```
DGS-3000-26TC:admin#enable snmp authenticate_traps
Command: enable snmp authenticate_traps

Success.

DGS-3000-26TC:admin#
```

79-31 disable snmp authenticate_traps

Description

This command is used to disable SNMP authentication failure trap support.

Format

disable snmp authenticate_traps

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable SNMP authentication trap support:

```
DGS-3000-26TC:admin#disable snmp authenticate_traps
Command: disable snmp authenticate_traps

Success.

DGS-3000-26TC:admin#
```

79-32 enable snmp linkchange_traps

Description

This command is used to configure the sending of linkchange traps.

Format

enable snmp linkchange_traps

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable the sending of linkchange traps:

```
DGS-3000-26TC:admin#enable snmp linkchange_traps
Command: enable snmp linkchange_traps

Success.

DGS-3000-26TC:admin#
```

79-33 disable snmp linkchange_traps

Description

This command is used to configure the sending of linkchange traps.

Format

disable snmp linkchange_traps

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable the sending of linkchange traps:

```
DGS-3000-26TC:admin#disable snmp linkchange_traps
Command: disable snmp linkchange_traps

Success.

DGS-3000-26TC:admin#
```

79-34 config snmp linkchange_traps ports

Description

This command is used to configure the sending of linkchange traps and per port control for sending of change trap.

Format

config snmp linkchange_traps ports [all | <portlist>] [enable | disable]

Parameters

all - Specify that all ports will be used.

<portlist> - Enter the range of ports used.

enable - Enables the sending of the link change trap for this port.

disable - Disables the sending of the link change trap for this port.

Restrictions

Only Administrators can issue this command.

Example

To configure the sending of linkchange traps:

```
DGS-3000-26TC:admin#config snmp linkchange_traps ports 1-4 enable
Command: config snmp linkchange_traps ports 1-4 enable

Success.

DGS-3000-26TC:admin#
```

79-35 config snmp coldstart_traps

Description

This command is used to configure the trap for coldstart event.

Format

config snmp coldstart_traps [enable | disable]

Parameters

enable - Enables the trap of the coldstart event. The default state is enabled.

disable - Disables the trap of the coldstart event.

Restrictions

Only Administrators can issue this command.

Example

To configure the trap for coldstart event:

```
DGS-3000-26TC:admin#config snmp coldstart_traps enable
Command: config snmp coldstart_traps enable

Success.

DGS-3000-26TC:admin#
```

79-36 config snmp warmstart_traps

Description

This command is used to configure the trap state for warmstart event.

Format

config snmp warmstart_traps [enable | disable]

Parameters

enable - Enables the trap of the warmstart event. The default state is enabled.

disable - Disables the trap of the warmstart event.

Restrictions

Only Administrators can issue this command.

Example

To configure the trap state for warmstart event:

```
DGS-3000-26TC:admin#config snmp warmstart_traps enable
Command: config snmp warmstart_traps enable

Success.

DGS-3000-26TC:admin#
```

79-37 show snmp traps

Description

This command is used to display the SNMP trap sending status.

Format

show snmp traps {linkchange_traps {ports <portlist>}}

Parameters

linkchange_traps - (Optional) Specify that the SNMP trap sending status will be displayed.

ports - (Optional) Specify the ports for the display.

<portlist> - Enter the list of ports used for the display here.

Restrictions

None.

Example


```
DGS-3000-26TC:admin#show snmp traps
Command: show snmp traps

SNMP Traps          : Enabled
Authenticate Trap   : Enabled
Linkchange Traps    : Enabled
Coldstart Traps     : Enabled
Warmstart Traps     : Enabled

DGS-3000-26TC:admin#
```

79-38 config rmon trap

Description

This command is used to configure the trap state for RMON events.

Format

config rmon trap {rising_alarm [enable | disable] | falling_alarm [enable | disable]} (1)

Parameters

rising_alarm - Specify the trap state for rising alarm. The default state is enabled.

enable - Specify that the rising alarm function will be enabled.

disable - Specify that the rising alarm function will be disabled.

falling_alarm - Specify the trap state for falling alarm. The default state is enabled.

enable - Specify that the falling alarm function will be enabled.

disable - Specify that the falling alarm function will be disabled.

Restrictions

Only Administrators can issue this command.

Example

To configure the trap state for RMON events:

```
DGS-3000-26TC:admin#config rmon trap rising_alarm disable
Command: config rmon trap rising_alarm disable

Success.

DGS-3000-26TC:admin#
```

79-39 show rmon

Description

This command is used to display the RMON related setting.

Format

show rmon

Parameters

None.

Restrictions

None.

Example

To display the RMON related setting:

```
DGS-3000-26TC:admin#show rmon
Command: show rmon

RMON Rising Alarm Trap      : Enabled
RMON Falling Alarm Trap     : Enabled

DGS-3000-26TC:admin#
```

Chapter 80 Simple RED Command List

enable sred

disable sred

config sred [<portlist> | all] [<class_id 0-7> | all] {threshold {low <value 0-100> | high <value 0-100>} | drop_rate {low <value 1-8> | high <value 1-8>} | drop_green [enable | disable]}

show sred {<portlist> {<class_id 0-7>}}

show sred drop_counter {<portlist>}

80-1 enable sred

Description

This command is used to enable the sRED function. By default, sRED is disabled.

Format

enable sred

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable sRED:

```
DGS-3000-26TC:admin#enable sred
Command: enable sred

Success.

DGS-3000-26TC:admin#
```

80-2 disable sred

Description

This command is used to disable the sRED function.

Format

disable sred

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable sRED:

```
DGS-3000-26TC:admin#disable sred
Command: disable sred

Success.

DGS-3000-26TC:admin#
```

80-3 config sred

Description

This command is used to configure the sRED port's queue settings.

Format

```
config sred [<portlist> | all] [<class_id 0-7> | all] {threshold {low <value 0-100> | high <value 0-100>} |
drop_rate {low <value 1-8> | high <value 1-8>} | drop_green [enable | disable]}
```

Parameters

<portlist> - Enter the list of ports, used for this configuration, here.
all - Specify that all the ports will be used.
<class_id 0-7> - Enter the CoS Class ID used here. This value must be between 0 and 7.
all - Specify that all the CoS Class ID will be used.
threshold - (Optional) Specify the threshold of the percent of space utilized.
low - (Optional) Specify the low threshold value used.
<value 0-100> - Enter the low threshold value used here. This value must be between 0 and 100.
high - (Optional) Specify the high threshold value used.
<value 0-100> - Enter the high threshold value used here. This value must be between 0 and 100.
drop_rate - (Optional) Specify the drop rate value used.
low - (Optional) Specify the low drop rate value used.
<value 1-8> - Enter the low drop rate value used here. This value must be between 1 and 8.
high - (Optional) Specify the high drop rate value used.
<value 1-8> - Enter the high drop rate value used here. This value must be between 1 and 8. (Note: There are 8 drop rates: 1=100%; 2=6.25%; 3=3.125%; 4= 1.5625%; 5= 0.78125%; 6=0.390625%; 7= 0.1953125%; 8= 0.09765625%)
drop_green - (Optional) Specify the drop green parameters.
enable - Probabilistic drop yellow and red colored packets if the queue depth is above the low threshold, and probabilistic drop green colored packets if the queue depth is above the high threshold.
disable - Probabilistic drop red colored packets if the queue depth is above the low threshold, and probabilistic drop yellow colored packets if the queue depth is above the high threshold.

Restrictions

Only Administrators, Operators and Power users can issue this command.

Example

To configure sRED:

```
DGS-3000-26TC:admin#config sred all all threshold low 64 high 80 drop_rate low 8 high 8
drop_green disable
Command: config sred all all threshold low 64 high 80 drop_rate low 8 high 8 drop_green
disable

Success.

DGS-3000-26TC:admin#
```

80-4 show sred

Description

This command is used to display the current thresholds (per port and per queue) parameters in use on the Switch

Format

show sred {<portlist> {<class_id 0-7>}}

Parameters

<portlist> - (Optional) Enter the list of port used for the display.

<class_id 0-7> - (Optional) Enter which of the hardware CoS queues to display.

If no parameter is specified, then all information will be displayed.

Restrictions

None.

Example

To display sRED information:

```

DGS-3000-26TC:admin#show sred
Command: show sred

Simple RED Global Status: Enabled

Port Class Drop Green Threshold Drop Rate
          Low  High Low  High
-----
1      0      Disabled 64  80  8  8
1      1      Disabled 64  80  8  8
1      2      Disabled 64  80  8  8
1      3      Disabled 64  80  8  8
1      4      Disabled 64  80  8  8
1      5      Disabled 64  80  8  8
1      6      Disabled 64  80  8  8
1      7      Disabled 64  80  8  8
2      0      Disabled 64  80  8  8
2      1      Disabled 64  80  8  8
2      2      Disabled 64  80  8  8
2      3      Disabled 64  80  8  8
2      4      Disabled 64  80  8  8
2      5      Disabled 64  80  8  8
2      6      Disabled 64  80  8  8
2      7      Disabled 64  80  8  8
3      0      Disabled 64  80  8  8
CTRL+C  ESC  c Quit  SPACE  n Next Page  ENTER Next Entry  a All

```

80-5 show sred drop_counter

Description

This command is used to display the dropped packet count of egress ports.

Format

show sred drop_counter {<portlist>}

Parameters

<portlist> - (Optional) Enter the list of port used for the display.

If no parameter is specified, then all information will be displayed.

Restrictions

None.

Example

To display the dropped packet count of egress ports:

```
DGS-3000-26TC:admin#show sred drop_counter
```

```
Command: show sred drop_counter
```

Port	Yellow	Red
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0

```
DGS-3000-26TC:admin#
```

Chapter 81 Single IP Management Command List

enable sim
disable sim
show sim {[candidates {<candidate_id 1-100>} members{<member_id 1-32>} group {commander_mac <macaddr>} neighbor}]
reconfig {member_id <value 1-32> exit}
config sim_group [add <candidate_id 1-100> {<password>} delete <member_id 1-32>]
config sim [[commander {group_name <groupname 64>} candidate] dp_interval <sec 30-90> hold_time <sec 100-255>]
download sim_ms [firmware_from_tftp configuration_from_tftp] {[<ipaddr> <ipv6addr>] <path_filename> {[members <mslist 1-32> all]}}
upload sim_ms [configuration_to_tftp log_to_tftp] {[<ipaddr> <ipv6addr>] <path_filename> {[members <mslist> all]}}
config sim trap [enable disable]

81-1 enable sim

Description

This command is used to configure the single IP management on the Switch as enabled.

Format

enable sim

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable SIM:

```
DGS-3000-26TC:admin#enable sim
Command: enable sim

Success.

DGS-3000-26TC:admin#
```

81-2 disable sim

Description

This command is used to disable single IP management on the Switch.

Format**disable sim****Parameters**

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable SIM:

```
DGS-3000-26TC:admin#disable sim
Command: disable sim

Success.

DGS-3000-26TC:admin#
```

81-3 show sim

Description

This command is used to display the current information of the specific sort of devices.

Format

show sim {[**candidates** {<candidate_id 1-100>} | **members**{<member_id 1-32>} | **group** {**commander_mac** <macaddr>} | **neighbor**}]

Parameters**candidates** - (Optional) Specify the candidate devices.**<candidate_id 1-100>** - (Optional) Enter the candidate device ID here. This value must be between 1 and 100.**members** - (Optional) Specify the member devices.**<member_id 1-32>** - (Optional) Enter the member device ID here. This value must be between 1 and 32.**group** - (Optional) Specify other group devices.**commander_mac** - (Optional) Specify the commander MAC address used.**<macaddr>** - Enter the commander MAC address used here.**neighbor** - (Optional) Specify other neighbor devices.**Restrictions**

None.

Example

To show the SIM information in detail:

```
DGS-3000-26TC:admin#show sim
Command: show sim

SIM Version      : VER-1.61
Firmware Version : 2.00.004
Device Name      :
MAC Address      : 00-01-02-03-04-00
Capabilities     : L2
Platform        : DGS-3000-26TC L2 Switch
SIM State       : Disabled
Role State      : Candidate
Discovery Interval : 30 sec
Hold Time       : 100 sec

DGS-3000-26TC:admin#
```

To show the candidate information in summary, if user specify candidate id, it would show information in detail:

```
DGS-3000-26TC:admin#show sim candidates
Command: show sim candidates

ID  MAC Address      Platform /
    MAC Address      Capability      Hold Time  Firmware Version  Device Name
---  -
1   00-01-02-03-04-00 DGS-3000-26TC L2 Switch  40        2.00.004  Device
2   00-55-55-00-55-00 DGS-3000-26TC L2 Switch  140       2.00.004  Device2

Total Entries: 2

DGS-3000-26TC:admin#
```

To show the member information in summary, if user specify member id, it will show information in detail:

```
DGS-3000-26TC:admin#show sim members
Command: show sim members

ID  MAC Address      Platform /
    MAC Address      Capability      Hold Time  Firmware Version  Device Name
---  -
1   00-01-02-03-04-00 DGS-3000-26TC L2 Switch  40        2.00.004  Device
2   00-55-55-00-55-00 DGS-3000-26TC L2 Switch  140       2.00.004  Device2

Total Entries: 2

DGS-3000-26TC:admin#
```

To show other groups information in summary, if user specify group name, it will show information in detail:

```
DGS-3000-26TC:admin#show sim group
Command: show sim group

SIM Group Name : default

ID  MAC Address          Platform /           Hold  Firmware Device Name
Capability              Time  Version
-----
*1  00-01-02-03-04-00 DGS-3000-26TC L2 Switch  40    2.00.004  Device
   2  00-55-55-00-55-00

SIM Group Name : SIM2

ID  MAC Address          Platform /           Hold  Firmware Device Name
Capability              Time  Version
-----
*1  00-01-02-03-04-00 DGS-3000-26TC L2 Switch  40    2.00.004  Device
   2  00-55-55-00-55-00
   3  00-55-55-00-55-11

Total Entries: 2

DGS-3000-26TC:admin#
```

To show neighbor table of SIM:

```
DGS-3000-26TC:admin#show sim neighbor
Command: show sim neighbor

Neighbor Table

Port    MAC Address          Role
-----
23      00-35-26-00-11-99  Commander
23      00-35-26-00-11-91  Member
24      00-35-26-00-11-90  Candidate

Total Entries: 3

DGS-3000-26TC:admin#
```

81-4 reconfig

Description

This command is used to re-Telnet to member.

Format

reconfig {member_id <value 1-32> | exit}

Parameters

-
- member_id** - (Optional) Specify the serial number of the member.
 - <value 1-32>** - Enter the serial number of the member here.
 - exit** - (Optional) Specify to exit from the Telnet session.
-

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To re-Telnet to member:

```
DGS-3000-26TC:admin#reconfig member_id 1
Command: reconfig member_id 1

DGS-3000-26TC:admin#
Login:
```

81-5 config sim_group

Description

This command is used to configure group information.

Format

config sim_group [add <candidate_id 1-100> {<password>} | delete <member_id 1-32>]

Parameters

add - Specify to add a specific candidate to the group.
<candidate_id 1-100> - Enter the candidate ID to be added to the group here. This value must be between 1 and 100.
<password> - (Optional) Enter the password of candidate if necessary.

delete - Specify to delete a member from the group.
<member_id 1-32> - Enter the member ID of the member to be removed from the group here. This value must be between 1 and 32.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a member:

```
DGS-3000-26TC:admin#config sim_group add 2
Command: config sim_group add 2

Please wait for ACK !!!
SIM Configure Success !!!

Success.

DGS-3000-26TC:admin#
```

To delete a member:

```
DGS-3000-26TC:admin#config sim_group delete 1
Command: config sim_group delete 1

Please wait for ACK !!!
SIM Configure Success !!!

Success.

DGS-3000-26TC:admin#
```

81-6 config sim

Description

This command is used to configure the role state and the parameters of the discovery protocol on the Switch.

Format

```
config sim [[commander {group_name <groupname 64>} | candidate] | dp_interval <sec 30-90> | hold_time <sec 100-255>]
```

Parameters

commander - Specify to transfer the role to the commander.

group_name - (Optional) Specify that if the user is the commander, the user can update the name of group.
<groupname 64> - Enter the group name here. This name can be up to 64 characters long.

candidate - Specify to transfer the role to the candidate.

dp_interval - The time in seconds between discoveries.

<sec 30-90> - Enter the discovery time here in seconds. This value must be between 30 and 90 seconds.

hold_time - The time in seconds the device holds the discovery result.

<sec 100-255> - Enter the hold time here in seconds. This value must be between 100 and 255.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To transfer to commander:

```
DGS-3000-26TC:admin#config sim commander
Command: config sim commander

Success.

DGS-3000-26TC:admin#
```

To transfer to candidate:

```
DGS-3000-26TC:admin#config sim candidate
Command: config sim candidate

Success.

DGS-3000-26TC:admin#
```

To update name of group:

```
DGS-3000-26TC:admin#config sim commander group_name mygroup
Command: config sim commander group_name mygroup

Success.

DGS-3000-26TC:admin#
```

To change the time interval of discovery protocol:

```
DGS-3000-26TC:admin#config sim dp_interval 30
Command: config sim dp_interval 30

Success.

DGS-3000-26TC:admin#
```

To change the hold time of discovery protocol:

```
DGS-3000-26TC:admin#config sim hold_time 200
Command: config sim hold_time 200

Success.

DGS-3000-26TC:admin#
```

81-7 download sim_ms

Description

This command is used to download firmware or configuration from TFTP server to indicated devices.

Format

```
download sim_ms [firmware_from_tftp | configuration_from_tftp] [{<ipaddr> | <ipv6addr>} <path_filename>
{[members <mslist 1-32> | all]}]
```

Parameters

firmware_from_tftp - Specify to download firmware from a TFTP server.
configuration_from_tftp - Specify to download configuration from a TFTP server.
<ipaddr> - (Optional) Enter the IP address of the TFTP server.
<ipv6addr> - (Optional) Enter the IPv6 address of TFTP server.
<path_filename> - (Optional) Enter the file path of firmware or configuration in the TFTP server.
members - (Optional) Specify a range of members which download this firmware or configuration.
<mslist 1-32> - Enter a range of members which download this firmware or configuration.
all - (Optional) Specify all members which download this firmware or configuration.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To download firmware:

```
DGS-3000-26-TCS:admin# download sim_ms firmware_from_tftp 10.55.47.1 D:\firmware.had members 1
Commands: download sim_ms firmware_from_tftp 10.55.47.1 D:\firmware.had members 1

This device is updating firmware. Please wait...

Download Status :
```

ID	MAC Address	Result
1	00-01-02-03-04-00	Success
2	00-07-06-05-04-03	Fail

```
DGS-3000-26TC:admin#
```

To download configuration:

```
DGS-3000-25TC:admin# download sim_ms configuratin_from_tftp 10.55.47.1 D:\config.cfg 1
Commands: download sim_ms configuratin_from_tftp 10.55.47.1 D:\config.cfg 1

This device is updating configuration. Please wait...

Download Status :
```

ID	MAC Address	Result
1	00-01-02-03-04-00	Success
2	00-07-06-05-04-03	Fail
3	00-07-06-05-04-03	Fail

```
DGS-3000-26TC:admin#
```

To download configuration via IPv6:

```
DGS-3000-26TC:admin# download sim_ms configuratin_from_tftp 2001::1234 D:\config.cfg 1
Commands: download sim_ms configuratin_from_tftp 2001::1234 D:\config.cfg 1

This device is updating configuration. Please wait several minutes ...

Download Status :
```

ID	MAC Address	Result
1	00-01-02-03-04-00	Success
2	00-07-06-05-04-03	Fail

```
DGS-3000-26TC:admin#
```

81-8 upload sim_ms

Description

This command is used to upload configuration or logs from indicated devices to the TFTP server.

Format

```
upload sim_ms [configuration_to_tftp | log_to_tftp] {[<ipaddr> | <ipv6addr>] <path_filename> {[ members
<mslist> | all]}}
```

Parameters

configuration_to_tftp - Specify to upload configuration to a TFTP server.

log_to_tftp - Specify to upload a log to a TFTP server.

<ipaddr> - (Optional) Enter the IPv4 address of TFTP server.

<ipv6addr> - (Optional) Enter the IPv6 address of TFTP server.

<path_filename> - (Optional) Enter the file path to store configuration in TFTP server.

members - (Optional) Specify the members which upload its configuration.

<mslist> - Enter the members which upload its configuration. The value is from 1 to 32.

all - (Optional) Specify all members which upload its configuration.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To upload configuration:

```
DGS-3000-26TC:admin#upload sim_ms configuration_to_tftp 10.55.47.1 D:\config.cfg members 1
Command: upload sim_ms configuration_to_tftp 10.55.47.1 D:\config.cfg members 1

Done.

DGS-3000-26TC:admin#
```

To upload log via IPv6:

```
DGS-3000-26TC:admin#upload sim_ms log_to_tftp 2001::1234 D:\log.txt members 1
Command: upload sim_ms log_to_tftp 2001::1234 D:\log.txt members 1

This device is uploading log. Please wait several minutes ...

Upload Status :

ID      MAC Address      Result
---      -
00-01-02-03-04-00 Success

DGS-3000-26TC:admin
```

81-9 config sim trap**Description**

This command is used to control sending of traps issued from the member switch.

Format

```
config sim trap [enable | disable]
```


Parameters

enable - Enable the trap state.

disable - Disable the trap state.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable SIM trap:

```
DGS-3000-26TC:admin#config sim trap enable
```

```
Command: config sim trap enable
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

Chapter 82 Super VLAN Command List

```

create super_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>] {sub_vlan <vidlist>}
config super_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>] [add | delete] sub_vlan <vidlist>
delete super_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>]
config sub_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>] [add | delete] ip_range <ipaddr> to <ipaddr>
show super_vlan [{<vlan_name 32> | vlanid <vlanid 1-4094>}]
show sub_vlan [{<vlan_name 32> | vlanid <vidlist>}]

```

82-1 create super_vlan

Description

This command is used to create a super VLAN. The specified VLAN must be an 802.1Q VLAN. If the specified VLAN does not exist, the operation will fail.

NOTE: A Layer 3 Routing Protocol, like VRRP, the Multicast Protocol, and the IPv6 Protocol cannot run on a super VLAN interface.

Super VLANs are used to aggregate multiple sub-VLANs in the same IP subnet. A sub-VLAN is a Layer 2, separated broadcast domain. The super VLAN cannot have any physical member ports and hosts that resides within any sub-VLANs. Once an IP interface is bound to a super VLAN, the proxy ARP will be enabled automatically on the specified interface for the communication between its sub-VLANs. If an IP interface is bound to a super VLAN, it cannot be bound to any other VLANs. A super VLAN cannot be a sub-VLAN of other super VLANs.

Format

```
create super_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>] {sub_vlan <vidlist>}
```

Parameters

<vlan_name 32> - Enter the VLAN name used here. This name can be up to 32 characters long.

vlanid - Specify the VLAN ID used.

<vlanid 1-4094> - Enter the VLAN ID used here. This value must be between 1 and 4094.

sub_vlan - (Optional) Specify the sub-VLANs of the super VLAN. By default, a new created super VLAN has no sub-VLANs configured.

<vidlist> - Enter the VLAN ID of the sub-VLAN used here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create super VLAN 10:

```

DGS-3000-26TC:admin# create super_vlan vlanid 10
Command: create super_vlan vlanid 10

Success.

DGS-3000-26TC:admin#

```

82-2 config super_vlan

Description

This command is used to configure the sub-VLANs of a super VLAN. A sub-VLAN only can belong to one super VLAN and you cannot bind an IP interface on it.

Format

config super_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>] [add | delete] sub_vlan <vidlist>

Parameters

<vlan_name 32>	- Enter the VLAN name used here. This name can be up to 32 characters long.
vlanid	- Specify the VLAN ID used.
<vlanid 1-4094>	- Enter the VLAN ID used here. This value must be between 1 and 4094.
add	- Specify the sub-VLAN ID list to add to the super VLAN. The sub-VLAN shall be an existent 802.1Q VLAN.
delete	- Specify the sub-VLAN ID list to delete from the super VLAN.
sub_vlan	- Specify the sub-VLANs of the super VLAN. By default, a new created super VLAN has no sub-VLANs configured.
<vidlist>	- Enter the VLAN ID of the sub-VLAN used here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add sub VLAN 2-4 into super VLAN 10:

```
DGS-3000-26TC:admin# config super_vlan 10 add sub_vlan 2-4
Command: config super_vlan 10 add sub_vlan 2-4

Success.

DGS-3000-26TC:admin#
```

82-3 delete super_vlan

Description

This command is used to delete a super VLAN.

Format

delete super_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>]

Parameters

<vlan_name 32>	- Enter the VLAN name used here. This name can be up to 32 characters long.
vlanid	- Specify the VLAN ID used.
<vlanid 1-4094>	- Enter the VLAN ID used here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete the super VLAN by specify the VLAN ID 10:

```
DGS-3000-26TC:admin# delete super_vlan vlanid 10
Command: delete super_vlan vlanid 10

Success.

DGS-3000-26TC:admin#
```

82-4 config sub_vlan

Description

This command is used to configure the IP range of the sub-VLAN.

A sub-VLAN can has one or more IP ranges. Configuring IP range of sub-VLAN can reduce the ARP traffic in the super VLAN. That is multiple IP (ranges) is allowed to map to one sub-VLAN. One IP can not map to multiple sub-VLANs, if one IP is mapped to multiple VLAN it may cause traffic forwarding to the wrong VLAN.

Format

config sub_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>] [add | delete] ip_range <ipaddr> to <ipaddr>

Parameters

<vlan_name 32> - Enter the VLAN name used here. This name can be up to 32 characters long.

vlanid - Specify the VLAN ID used.

<vlanid 1-4094> - Enter the VLAN ID used here. This value must be between 1 and 4094.

add - Specify the IP range of the sub-VLAN that will be added.

delete - Specify the IP range of the sub-VLAN that will be deleted.

ip_range - Specify the IP range of the sub-VLAN that will be used.

<ipaddr> - Enter the starting IP address used here.

to - Specify that the next IP address will be the ending IP address.

<ipaddr> - Enter the ending IP address used here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure IP range of sub VLAN 1 to 10.1.1.1-10.1.1.3:

```
DGS-3000-26TC:admin# config sub_vlan vlanid 1 add ip_range 10.1.1.1 to 10.1.1.3
Command: config sub_vlan vlanid 1 add ip_range 10.1.1.1 to 10.1.1.3

Success.

DGS-3000-26TC:admin#
```

82-5 show super_vlan

Description

This command is used to display the super VLAN parameters.

Format

show super_vlan {[<vlan_name 32> | vlanid <vlanid 1-4094>]}

Parameters

<vlan_name 32> - (Optional) Enter the super VLAN name used here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the super VLAN ID used.

<vlanid 1-4094> - Enter the super VLAN ID used here. This value must be between 1 and 4094. If the super VLAN is not specified, all super VLANs will be displayed

Restrictions

None.

Example

To show super VLAN:

```
DGS-3000-26TC:admin# show super_vlan
Command: show super_vlan

Super VID : 3
VLAN Name : super3
IP Subnet : 172.6.0.254/16
Status    : Inactive
Sub VID   : 200-204

Total Entries: 1

DGS-3000-26TC:admin#
```

82-6 show sub_vlan

Description

This command is used to show sub_VLAN.

Format

show sub_vlan {[<vlan_name 32> | vlanid <vidlist>]}

Parameters

<vlan_name 32> - (Optional) Enter the sub_VLAN name used here. This name can be up to 32 characters long.

vlanid - (Optional) Specify the sub_VLAN ID used.

<vidlist> - Enter the sub_VLAN ID used here. This value must be between 1 and 4094. If the sub_vlan VLAN is not specified, all sub_vlans will be displayed.

Restrictions

None.

Example

To show all sub_VLAN:

```
DGS-3000-26TC:admin# show sub_vlan
```

```
Command: show sub_vlan
```

Sub VID	Status	Super VID	IP Range
1	Active	10	10.1.1.1-10.1.1.10 10.1.2.1-10.1.2.20
2	Active	10	10.1.3.0-10.1.3.100
3	Inactive	10	10.1.4.0-10.1.4.255
4	Active	20	10.1.5.0-10.1.5.255
5	Inactive	20	10.1.6.0-10.1.6.255

```
Total Entries: 5
```

```
DGS-3000-26TC:admin#
```

Chapter 83 Syslog and Trap Source-interface Command List

```
config syslog source_ipif [<ipif_name 12> {<ipaddr> | <ipv6addr> } | none]
```

```
show syslog source_ipif
```

```
config trap source_ipif [<ipif_name 12> {<ipaddr> | <ipv6addr> } | none]
```

```
show trap source_ipif
```

83-1 config syslog source_ipif

Description

This command is used to configure syslog source IP interface.

Format

```
config syslog source_ipif [<ipif_name 12> {<ipaddr> | <ipv6addr> } | none]
```

Parameters

<ipif_name 12> - Enter the IP interface name. If only specify this parameter, the least IPv4 address and the smallest IPv6 address of ipif_name will be used as source IP addresses. This name can be up to 12 characters long.

<ipaddr> - (Optional) Enter the IP address used for the configuration here.

<ipv6addr> - (Optional) Enter the IPv6 address used for the configuration here.

none - Specify to clear the configured source IP interface.

Restrictions

Only Administrators and Operators can issue this command.

Example

Configure syslog source IP interface:

```
DGS-3000-26TC:admin#config syslog source_ipif ipif3 14.0.0.5
Command: config syslog source_ipif ipif3 14.0.0.5
```

```
Success
```

```
DGS-3000-26TC:admin#
```

To clear the configured source IP interface for syslog:

```
DGS-3000-26TC:admin#config syslog source_ipif none
Command: config syslog source_ipif none
```

```
Success
```

```
DGS-3000-26TC:admin#
```

83-2 show syslog source_ipif

Description

This command is used to display the syslog source IP interface.

Format

show syslog source_ipif

Parameters

None.

Restrictions

None.

Example

Show syslog source IP interface:

```
DGS-3000-26TC:admin#show syslog source_ipif
Command: show syslog source_ipif

Syslog Source IP Interface Configuration:

IP Interface           : ipif3
IPv4 Address           : 14.0.0.5
IPv6 Address           : None

DGS-3000-26TC:admin#
```

83-3 config trap source_ipif

Description

This command is used to configure trap source IP interface.

Format

config trap source_ipif [<ipif_name 12> {<ipaddr> | <ipv6addr> } | none]

Parameters

<ipif_name 12> - Enter the IP interface name here. This name can be up to 12 characters long.

<ipaddr> - (Optional) Enter the IP address used for the configuration here.

<ipv6addr> - (Optional) Enter the IPv6 address used for the configuration here.

none - Specify to clear the configured source IP interface.

Restrictions

Only Administrators and Operators can issue this command.

Example

Configure trap source IP interface:


```
DGS-3000-26TC:admin#config trap source_ipif System
Command: config trap source_ipif System

Success

DGS-3000-26TC:admin#
```

To clear the configured trap source IP interface:

```
DGS-3000-26TC:admin#config trap source_ipif none
Command: config trap source_ipif none

Success

DGS-3000-26TC:admin#
```

83-4 show trap source_ipif

Description

This command is used to display the trap source IP interface.

Format

show trap source_ipif

Parameters

None.

Restrictions

None.

Example

Show trap source IP interface:

```
DGS-3000-26TC:admin#show trap source_ipif
Command: show trap source_ipif

Trap Source IP Interface Configuration:

IP Interface           : System
IPv4 Address           : None
IPv6 Address           : None

DGS-3000-26TC:admin#
```

Chapter 84 System Log Command List

clear log
show log {[index <value_list> severity {module <module_list>} {emergency alert critical error warning notice informational debug <level_list 0-7>} module<module_list>}]
show log_software_module
enable syslog
disable syslog
show syslog
create syslog host <index 1-4> ipaddress [<ipaddr> <ipv6addr>] {severity [emergency alert critical error warning notice informational debug <level 0-7>] facility [local0 local1 local2 local3 local4 local5 local6 local7] udp_port <udp_port_number> state [enable disable]}
config syslog host [<index> all] {severity [emergency alert critical error warning notice informational debug <level 0-7>] facility [local0 local1 local2 local3 local4 local5 local6 local7] udp_port <udp_port_number> ipaddress [<ipaddr> <ipv6addr>] state [enable disable]}(1)
delete syslog host [<index 1-4> all]
show syslog host {<index 1-4>}
config log_save_timing [time_interval <min 1-65535> on_demand log_trigger]
show log_save_timing
show attack_log {index <value_list>}
clear attack_log

84-1 clear log

Description

This command is used to clear the Switch's history log.

Format

```
clear log
```

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To clear the Switch's history log:

```
DGS-3000-26TC:admin#clear log
Command: clear log

Success.

DGS-3000-26TC:admin#
```

84-2 show log

Description

This command is used to display the Switch's history log.

Format

show log {[**index** <value_list> | **severity** {**module** <module_list>} {**emergency** | **alert** | **critical** | **error** | **warning** | **notice** | **informational** | **debug** | <level_list 0-7>} | **module**<module_list>]}

Parameters

-
- index** - (Optional) Specify the index value of log entries that will be displayed. For example, specifying 1-5 will display the history log from 1 to 5.
<value_list> - Enter the index value here.
-
- severity** - (Optional) Specify the severity level used.
module - (Optional) Specify the modules which are to be displayed. The module can be obtained by using the show log_software_module command. Use a comma to separate multiple modules.
<module_list> - Enter the module list value here.
emergency - (Optional) Severity level 0.
alert - (Optional) Severity level 1.
critical - (Optional) Severity level 2.
error - (Optional) Severity level 3.
warning - (Optional) Severity level 4.
notice - (Optional) Severity level 5.
informational - (Optional) Severity level 6.
debug - (Optional) Severity level 7.
<level_list 0-7> - Enter a list of severity level which is to be displayed. If there is more than one severity level, please separate them by comma. The level number is from 0 to 7.
-
- module** - (Optional) Specify the modules which are to be displayed. The module can be obtained by using the show log_software_module command. Use a comma to separate multiple modules.
<module_list> - Enter the module list value here.
-
- If no parameter is specified, all history log entries will be displayed.
-

Restrictions

None.

Example

To display the Switch's history log:

```
DGS-3000-26TC:admin#show log index 1-3
Command: show log index 1-3

Index Date          Time          Level   Log Text
-----
3      2000-01-01 00:00:40 CRIT(2) System started up
2      2000-01-01 00:00:40 CRIT(2) System cold start
1      2000-01-01 01:49:30 INFO(6) Anonymous: execute command "reset system".

DGS-3000-26TC:admin#
```

84-3 show log_software_module

Description

This command is used to display the protocols or applications that support the enhanced log. The enhanced log adds the module name and module ID. Network administrators can display logs by module name or module ID.

Format

show log_software_module

Parameters

None.

Restrictions

None.

Example

To display the protocols or applications that support the enhanced log:

```
DGS-3000-26TC:admin#show log_software_module
Command: show log_software_module

ERPS                ERROR_LOG          MSTP

DGS-3000-26TC:admin#
```

84-4 enable syslog

Description

This command is used to enable the sending of syslog messages.

Format

enable syslog

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To enable the sending of syslog messages:

```
DGS-3000-26TC:admin#enable syslog
Command: enable syslog

Success.

DGS-3000-26TC:admin#
```

84-5 disable syslog

Description

This command is used to disable the sending of syslog messages.

Format

disable syslog

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To disable the sending of syslog messages:

```
DGS-3000-26TC:admin#disable syslog
Command: disable syslog

Success.

DGS-3000-26TC:admin#
```

84-6 show syslog

Description

This command is used to display the syslog protocol global state.

Format

show syslog

Parameters

None.

Restrictions

None.

Example

To display the syslog protocol global state:

```
DGS-3000-26TC:admin#show syslog
Command: show syslog

Syslog Global State: Enabled

DGS-3000-26TC:admin#
```

84-7 create syslog host

Description

This command is used to create a new syslog host. The user can choose and report specific levels of messages to a specific host. When the user chooses a specific level for a specific host, messages which are at that severity level or higher will be reported to that host.

Format

create syslog host <index 1-4> **ipaddress** [<ipaddr> | <ipv6addr>] {**severity** [emergency | alert | critical | error | warning | notice | informational | debug | <level 0-7>] | **facility** [local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7] | **udp_port** <udp_port_number> | **state** [enable | disable]}

Parameters

<index 1-4>	- Enter the host index value here.
ipaddress	- Specify the IP address for the host.
<ipaddr>	- Enter the IP address for the host.
<ipv6addr>	- Enter the IPv6 address for the host.
severity	- (Optional) Specify the severity level.
emergency	- Severity level 0.
alert	- Severity level 1.
critical	- Severity level 2.
error	- Severity level 3.
warning	- Severity level 4.
notice	- Severity level 5.
informational	- Severity level 6.
debug	- Severity level 7.
<level 0-7>	- Enter the severity level value here. This value must be between 0 and 7.
facility	- (Optional) Some of the operating system daemons and processes have been assigned Facility values. Processes and daemons that have not been explicitly assigned a Facility may use any of the "local use" facilities or they may use the "user-level" Facility. Those Facilities that have been designated are shown below. This facility setting will be put in the syslog packet when it is sent to a specific syslog server.
local0	- Specify that the user-defined facility will be set to local 0.
local1	- Specify that the user-defined facility will be set to local 1.
local2	- Specify that the user-defined facility will be set to local 2.
local3	- Specify that the user-defined facility will be set to local 3.
local4	- Specify that the user-defined facility will be set to local 4.
local5	- Specify that the user-defined facility will be set to local 5.
local6	- Specify that the user-defined facility will be set to local 6.
local7	- Specify that the user-defined facility will be set to local 7.
udp_port	- (Optional) Specify the UDP port number.
<udp_port_number>	- Enter the UDP port number used here.
state	- (Optional) The syslog protocol is used for the transmission of event notification messages across networks to a host. The option enables or disables the host to receive such messages.
enable	- Specify that the host to receive such messages will be enabled.
disable	- Specify that the host to receive such messages will be disabled.

Restrictions

Only Administrators and Operators can issue this command.

Example

Adds a new syslog host:

```
DGS-3000-26TC:admin#create syslog host 1 ipaddress 10.90.90.1 severity debug facility local0
Command: create syslog host 1 ipaddress 10.90.90.1 severity debug facility local0

Success.

DGS-3000-26TC:admin#
```

84-8 config syslog host

Description

This command is used to configure the syslog host configurations. The user can choose and report a specific level of messages to a specific host. When the user chooses a specific level for a specific host, messages which are at that severity level or higher will be reported to the specified host.

Format

```
config syslog host [<index> | all] {severity [emergency | alert | critical | error | warning | notice |
informational | debug] <level 0-7>} | facility [local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7] |
udp_port <udp_port_number> | ipaddress [<ipaddr> | <ipv6addr>] | state [enable | disable]}(1)
```

Parameters

<index> - Enter the host index value here.
all - Specify that all the host indexes will be used.
severity - Specify the severity level.
emergency - Severity level 0.
alert - Severity level 1.
critical - Severity level 2.
error - Severity level 3.
warning - Severity level 4.
notice - Severity level 5.
informational - Severity level 6.
debug - Severity level 7.
<level 0-7> - Enter the severity level value here. This value must be between 0 and 7.
facility - Some of the operating system daemons and processes have been assigned Facility values. Processes and daemons that have not been explicitly assigned a Facility may use any of the "local use" facilities or they may use the "user-level" Facility. Those Facilities that have been designated are shown below. This facility setting will be put in the syslog packet when it is sent to a specific syslog server.
local0 - Specify that the user-defined facility will be set to local 0.
local1 - Specify that the user-defined facility will be set to local 1.
local2 - Specify that the user-defined facility will be set to local 2.
local3 - Specify that the user-defined facility will be set to local 3.
local4 - Specify that the user-defined facility will be set to local 4.
local5 - Specify that the user-defined facility will be set to local 5.
local6 - Specify that the user-defined facility will be set to local 6.
local7 - Specify that the user-defined facility will be set to local 7.
udp_port - Specify the UDP port number.
<udp_port_number> - Enter the UDP port number used here.
ipaddress - Specify IP address for the host.
<ipaddr> - Enter the IP address used for the configuration here.
<ipv6addr> - Enter the IPv6 address used for the configuration here.
state - The syslog protocol is used for the transmission of event notification messages across networks to a host.

The option enables or disables the host to receive such messages.

enable - Specify that the host to receive such messages will be enabled.

disable - Specify that the host to receive such messages will be disabled.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the syslog host configuration:

```
DGS-3000-26TC:admin#config syslog host all severity debug facility local0
```

```
Command: config syslog host all severity debug facility local0
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

84-9 delete syslog host

Description

This command is used to delete the syslog host(s).

Format

delete syslog host [<index 1-4> | all]

Parameters

<index> - Enter the host index value here.

all - Specify that all the host indexes will be used.

Restrictions

Only Administrators and Operators can issue this command.

Example

To delete the specific syslog host:

```
DGS-3000-26TC:admin#delete syslog host 4
```

```
Command: delete syslog host 4
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

84-10 show syslog host

Description

This command is used to display the syslog host configurations.

Format**show syslog host {<index 1-4>}****Parameters**

<index> - (Optional) Enter the host index value here.
 If no parameter is specified, all hosts will be displayed.

Restrictions

None.

Example

To show the syslog host information:

```
DGS-3000-26TC:admin#show syslog host
Command: show syslog host

Syslog Global State: Disabled

Host 1
  IP Address       : 10.90.90.1
  Severity        : Debug(7)
  Facility        : Local0
  UDP Port        : 514
  Status          : Disabled

Total Entries : 1

DGS-3000-26TC:admin#
```

84-11 config log_save_timing**Description**

This command is used to set the method for saving the log.

Format**config log_save_timing [time_interval <min 1-65535> | on_demand | log_trigger]****Parameters**

time_interval - Specify the time interval used for saving the log. If there is no new log event during this time interval, the Switch will not save any log entries.
<min 1-65535> - Enter the time interval value here. This value must be between 1 and 65535 minutes.

on_demand - Specify that the log will only be saved when an on-demand event occurs. For example, issuing the command **save all** or **save log**. This is the default option.

log_trigger - Specify that the log will be saved when a new log event is triggered.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the method for saving a log as on demand:

```
DGS-3000-26TC:admin#config log_save_timing on_demand
Command: config log_save_timing on_demand

Success.

DGS-3000-26TC:admin#
```

84-12 show log_save_timing

Description

This command is used to show the method for saving the log.

Format

show log_save_timing

Parameters

None.

Restrictions

None.

Example

To show the timing method used for saving the log:

```
DGS-3000-26TC:admin#show log_save_timing
Command: show log_save_timing

Saving Log Method: On_demand

DGS-3000-26TC:admin#
```

84-13 show attack_log

Description

This command is used to display the attack log messages. The attack log message refers to log messages driven by modules such as DOS. This type of log message may generate a large amount of messages and quickly cause the system to run out of system log storage. Therefore, for this type of log messages only the first log that is generated each minute can be stored in the system log, with the rest of them being stored in a separate table named attack log.

Format

show attack_log {index <value_list>}

Parameters

index - (Optional) Specify the list of index numbers of the entries that need to be displayed. For example, the

index 1-5 will display the attack log messages from 1 to 5.

<value_list> - Enter the index numbers of the entries that needs to be displayed here.

If no parameter is specified, all entries in the attack log will be displayed.

Restrictions

None.

Example

To show dangerous messages on the master:

```
DGS-3000-26TC:admin#show attack_log index 1
Command: show attack_log index 1

Index      Date       Time       Level      Log Text
-----
1          2016-05-10 15:00:14 CRIT(2)    Possible spoofing attack from IP: , MAC:
                                         0A-00-00-5A-00-01, port: 3

DGS-3000-26TC:admin#
```

84-14 clear attack_log

Description

This command is used to clear the attack log.

Format

clear attack_log

Parameters

None.

Restrictions

Only Administrators and Operators can issue this command.

Example

To clear the master's attack log:

```
DGS-3000-26TC:admin#clear attack_log
Command: clear attack_log

Success.

DGS-3000-26TC:admin#
```

Chapter 85 System Severity Command List

```
config system_severity [trap | log | all] [emergency | alert| critical | error | warning | notice | information | debug |
<level 0-7>]
```

```
show system_severity
```

85-1 config system_severity

Description

This command is used to configure the severity level control for the system.

When the user chooses a specific level to log or trap, messages at that severity level or more will be logged or trapped to SNMP managers.

Format

```
config system_severity [trap | log | all] [emergency | alert| critical | error | warning | notice | information |
debug | <level 0-7>]
```

Parameters

trap - Specify the severity level control for traps.

log - Specify the severity level control for the log.

all - Specify the severity level control for traps and the log.

emergency - Severity level 0.

alert - Severity level 1.

critical - Severity level 2.

error - Severity level 3.

warning - Severity level 4.

notice - Severity level 5.

information - Severity level 6.

debug - Severity level 7.

<level 0-7> - Enter the severity level here. This value must be between 0 and 7.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure severity level control as information level for trap:

```
DGS-3000-26TC:admin#config system_severity trap warning
Command: config system_severity trap warning
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

85-2 show system_severity

Description

This command is used to display the severity level controls for the system.

Format

show system_severity

Parameters

None.

Restrictions

None.

Example

To show severity level control for system:

```
DGS-3000-26TC:admin#show system_severity
Command: show system_severity

System Severity Trap : warning(4)
System Severity Log  : information(6)

DGS-3000-26TC:admin#
```

Chapter 86 Telnet Client Command List

telnet [<ipaddr> | <domain_name 255> |<ipv6addr>] {tcp_port <value 1-65535>}

86-1 telnet

Description

This command is used to start the Telnet client to connect to the specific Telnet server. The parameters specified by the command will only be used for the establishment of this specific session. They will not affect the establishment of other sessions.

Format

telnet [<ipaddr> | <domain_name 255> |<ipv6addr>] {tcp_port <value 1-65535>}

Parameters

<ipaddr> - Enter the IP address of the Telnet server.

<domain_name 255> - Enter the domain name of the Telnet server.

<ipv6addr> - Enter the IPv6 address of the Telnet server.

tcp_port - (Optional) Specify the Telnet server port number to be connected. If not specified, the default port is 23.

<value 1-65535> - Enter the TCP port number used here. This value must be between 1 and 65535.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Telnet to a Switch by specifying the IP address:

```
DGS-3000-26TC:admin#telnet 10.90.90.90
Command: telnet 10.90.90.90

          DGS-3000-26TC Gigabit Ethernet Switch
          Command Line Interface

          Firmware: Build 2.00.004
          Copyright(C) 2016 D-Link Corporation. All rights reserved.

UserName:
```

Chapter 87 TFTP Client Command List

```
download [firmware_fromTFTP {[<ipaddr> | <ipv6addr> | <domain_name 255>] src_file <path_filename 64>
  {dest_file <pathname 64>} {boot_up}} | cfg_fromTFTP{ [<ipaddr> | <ipv6addr> | <domain_name 255>] src_file
  <path_filename 64> {dest_file <pathname 64>}}]
```

```
upload [cfg_toTFTP {[<ipaddr> | <ipv6addr> | <domain_name 255>] dest_file <path_filename 64> {src_file
  <pathname 64>} {[include | exclude | begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include |
  exclude | begin ] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include | exclude | begin ]
  <filter_string 80> {<filter_string 80> {<filter_string 80>}}}}] | log_toTFTP{[<ipaddr> | <ipv6addr> |
  <domain_name 255>] dest_file <path_filename 64>} | attack_log_toTFTP {[<ipaddr> | <ipv6addr> |
  <domain_name 255>] dest_file <path_filename 64>} | firmware_toTFTP {[<ipaddr> | <ipv6addr> |
  <domain_name 255>] dest_file <path_filename 64> {src_file <path_filename 64>}}]
```

```
config tftp {server <ipaddr> | firmware_file <path_filename 64> | cfg_file <path_filename 64> | log_file
  <path_filename 64> | attack_log_file <path_filename 64> | certificate_file <path_filename 64> | key_file
  <path_filename 64> | tech_support_file <path_filename 64> | debug_error_log_file <path_filename 64> |
  sim_firmware_file <path_filename 64> | sim_cfg_file <path_filename 64> | sim_log_file <path_filename 64>}
```

```
show tftp
```

87-1 download

Description

This command is used to download a new firmware or a switch configuration file.

Format

```
download [firmware_fromTFTP {[<ipaddr> | <ipv6addr> | <domain_name 255>] src_file <path_filename 64>
  {dest_file <pathname 64>} {boot_up}} | cfg_fromTFTP{[<ipaddr> | <ipv6addr> | <domain_name 255>]
  src_file <path_filename 64> {dest_file <pathname 64>}}]
```

Parameters

firmware_fromTFTP - Download and install new firmware on the switch from a TFTP server.

<ipaddr> - (Optional) Enter the IP address of the TFTP server.

<ipv6addr> - (Optional) Enter the IPv6 address of the TFTP server.

<domain_name 255> - (Optional) Enter the domain name of the TFTP server. This name can be up to 255 characters long.

src_file - (Optional) Specify the path name and file name of the TFTP server. It can be a relative path name or an absolute path name. If path name is not specified, it refers to the TFTP server path. The maximum length is 64 characters.

<path_filename 64> - Enter the path name and file name of the TFTP server. It can be a relative path name or an absolute path name. If path name is not specified, it refers to the TFTP server path. The maximum length is 64 characters.

dest_file - (Optional) Specify an absolute path name on the device file system. If path name is not specified, it overwrites the boot-up image on the Switch.

<pathname 64> - Enter an absolute path name on the device file system.

boot_up - (Optional) Specify as boot-up file.

cfg_fromTFTP - Download and install new configuration file on the switch from a TFTP server.

<ipaddr> - (Optional) Enter the IP address of the TFTP server.

<ipv6addr> - (Optional) Enter the IPv6 address of the TFTP server.

<domain_name 255> - (Optional) Enter the domain name of the TFTP server. This name can be up to 255 characters long.

src_file - Specify the path name and file name of the FTP server. It can be a relative path name or an absolute path name. If path name is not specified, it refers to the TFTP server path. The maximum length is 64 characters.

<path_filename 64> - Enter the path name and file name of the FTP server. It can be a relative path name or an absolute path name. If path name is not specified, it refers to the TFTP server path. The maximum length is 64 characters.

dest_file - (Optional) Specify an absolute path name on the device. If path name is not specified, it refers to

the boot-up configuration file.

<pathname 64> - Enter an absolute path name on the device.

Restrictions

Only Administrator-level users can issue this command.

Example

To download runtime firmware from a TFTP server:

```
DGS-3000-26TC:admin#download firmware_fromTFTP 10.0.0.66 src_file runtime.had dest_file
runtime.had
Command: download firmware_fromTFTP 10.0.0.66 src_file runtime.had dest_file runtime.had

Connecting to server..... Done.
Download firmware..... Done. Do not power off!
Please wait, programming flash..... Done.

DGS-3000-26TC:admin#
```

87-2 upload

Description

This command is used to upload the firmware, configuration file, system log, or attack log to the TFTP server.

Format

```
upload [cfg_toTFTP [{<ipaddr> | <ipv6addr> | <domain_name 255>] dest_file <path_filename 64> {src_file
<pathname 64>} {[include | exclude | begin] <filter_string 80> {<filter_string 80> {<filter_string 80>}}
{[include | exclude | begin ] <filter_string 80> {<filter_string 80> {<filter_string 80>}} {[include | exclude |
begin ] <filter_string 80> {<filter_string 80> {<filter_string 80>}}}] | log_toTFTP[{<ipaddr> | <ipv6addr> |
<domain_name 255>] dest_file <path_filename 64>} | attack_log_toTFTP [{<ipaddr> | <ipv6addr> |
<domain_name 255>] dest_file <path_filename 64>} | firmware_toTFTP [{<ipaddr> | <ipv6addr> |
<domain_name 255>] dest_file <path_filename 64> {src_file <path_filename 64>}]
```

Parameters

cfg_toTFTP - Used to upload a configuration file from the Switch to the TFTP server.

- <ipaddr>** - (Optional) Enter the IP address of the TFTP server.
- <ipv6addr>** - (Optional) Enter the IPv6 address of the TFTP server.
- <domain_name 255>** - (Optional) Enter the domain name of the TFTP server here. This name can be up to 255 characters long.
- dest_file** - (Optional) Specify the path name on the TFTP server.
 - <path_filename 64>** - Enter the location of the Switch configuration file on the TFTP server. This file will be replaced by the uploaded file from the Switch. The maximum length is 64 characters.
- src_file** - (Optional) Specify the source file's path name on the Switch file system. If the path name is not specified, it refers to the boot-up configuration file.
 - <path_filename 64>** - Enter the location of the Switch configuration file on device. The maximum length is 64 characters.
- include** - (Optional) Includes lines that contain the specified filter string.
- exclude** - (Optional) Excludes lines that contain the specified filter string.
- begin** - (Optional) The first line that contains the specified filter string will be the first line of the output.
 - <filter_string 80>** - (Optional) Enter a filter string enclosed by the quotation mark symbol. Thus, the filter string itself cannot contain the quotation mark character. The filter string is case sensitive.
 - <filter_string 80>** - (Optional) Enter a filter string enclosed by the quotation mark symbol.
 - <filter_string 80>** - (Optional) Enter a filter string enclosed by the quotation mark symbol.
- include** - (Optional) Includes lines that contain the specified filter string.
- exclude** - (Optional) Excludes lines that contain the specified filter string.

begin - (Optional) The first line that contains the specified filter string will be the first line of the output.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol. Thus, the filter string itself cannot contain the quotation mark character. The filter string is case sensitive.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.
<filter_string 80> - (Optional) Enter a filter string enclosed by the quotation mark symbol.

log_toTFTP - Used to upload the log file from the Switch to the TFTP server.

<ipaddr> - Enter the IP address of the TFTP server.
<ipv6addr> - Enter the IPv6 address of the TFTP server.
<domain_name 255> - Enter the domain name of the TFTP server here. This name can be up to 255 characters long.
dest_file - Specify the path name to the TFTP server.
<path_filename 64> - Enter the path name to the TFTP server.

attack_log_toTFTP - Used to upload the attack log from the Switch to the TFTP server.

<ipaddr> - Enter the IP address of the TFTP server.
<ipv6addr> - Enter the IPv6 address of the TFTP server.
<domain_name 255> - Enter the domain name of the TFTP server here. This name can be up to 255 characters long.

firmware_toTFTP - Used to upload firmware from the Switch to the TFTP server.

<ipaddr> - Enter the IP address of the TFTP server.
<ipv6addr> - Enter the IPv6 address of the TFTP server.
<domain_name 255> - Enter the domain name of the TFTP server here. This name can be up to 255 characters long.
dest_file - Specify the path name to the TFTP server.
<path_filename 64> - Enter the path name to the TFTP server.
src_file - (Optional) Specify the source file's path name on the Switch file system. If the path name is not specified, it refers to the boot-up image.
<pathname> - Enter the source file's path name on the Switch file system. If the path name is not specified, it refers to the boot-up image.

Restrictions

Only Administrators and Operators can issue this command.

Example

To upload firmware from a file system device to a TFTP server:

```
DGS-3000-26TC:admin#upload firmware_toTFTP 10.90.90.10 dest_file d:\firmware.had

Command: upload firmware_toTFTP 10.90.90.10 dest_file d:\firmware.had

Connecting to server..... Done.
Upload firmware..... Done.
Success.

DGS-3000-26TC:admin#
```

To display a scenario where the uploading of the firmware to the TFTP server failed, because of an incorrect or missing filename from the source. This error can also be found if the directory, on the source, does not exist.

```
DGS-3000-26TC:admin#upload firmware_toTFTP 10.90.90.10 dest_file D:/firmware.had src_file
4.00.020.had
Command: upload firmware_toTFTP 10.90.90.10 dest_file D:/firmware.had src_file 4.00.020.had

No such file or directory.

Fail!

DGS-3000-26TC:admin#
```

To upload configuration from TFTP:

```
DGS-3000-26TC:admin#upload cfg_toTFTP 10.90.90.10 dest_file d:\config.cfg
Command: upload cfg_toTFTP 10.90.90.10 dest_file d:\config.cfg

Connecting to server..... Done.
Upload configuration..... Done.
Success.

DGS-3000-26TC:admin#
```

To display a scenario where the uploading of the config file to the TFTP server failed, because of an incorrect or missing filename from the source. This error can also be found if the directory, on the source, does not exit.

```
DGS-3000-26TC:admin#upload cfg_toTFTP 10.90.90.10 dest_file d:\config.cfg src_file
missing.cfg
Command: upload cfg_toTFTP 10.90.90.10 dest_file d:\config.cfg src_file missing.cfg

No such file or directory.

Fail!

DGS-3000-26TC:admin#
```

To upload the attack log from the Switch to the TFTP server:

```
DGS-3000-26TC:admin#upload attack_log_toTFTP 10.90.90.10 dest_file d:\attack.txt
Command: upload attack_log_toTFTP 10.90.90.10 dest_file d:\attack.txt

Success.

DGS-3000-26TC:admin#
```

87-3 config tftp

Description

This command is used to configure the TFTP server and file pathname on the TFTP server.

Format

```
config tftp {server <ipaddr> | firmware_file <path_filename 64> | cfg_file <path_filename 64> | log_file
<path_filename 64> | attack_log_file <path_filename 64> | certificate_file <path_filename 64> | key_file
<path_filename 64> | tech_support_file <path_filename 64> | debug_error_log_file <path_filename 64> |
sim_firmware_file <path_filename 64> | sim_cfg_file <path_filename 64> | sim_log_file <path_filename
64>}(1)
```

Parameters

server - Specify the IP address of the TFTP server.

<ipaddr> - Enter the IP address of the TFTP server.

firmware_file - Specify the path and name of the firmware file that will be used for the upload and download.

<path_filename 64> - Enter the path and name of the firmware file that will be used for the upload and download. This name can be up to 64 characters long.

cfg_file - Specify the path and name of the configuration file that will be used for the upload and download.

<path_filename 64> - Specify the path and name of the configuration file that will be used for the upload and download. This name can be up to 64 characters long.

log_file - Specify the path and name of the system log file that will be used for the upload and download. <path_filename 64> - Enter the path and name of the system log file that will be used for the upload and download. This name can be up to 64 characters long.
attack_log_file - Specify the path and name of the attack log file that will be used for the upload and download. <path_filename 64> - Enter the path and name of the attack log file that will be used for the upload and download. This name can be up to 64 characters long.
certificate_file - Specify the path and name of the SSL certificate file that will be used for the upload and download. <path_filename 64> - Enter the path and name of the SSL certificate file that will be used for the upload and download. This name can be up to 64 characters long.
key_file - Specify the path and name of the SSL certificate key file that will be used for the upload and download. <path_filename 64> - Enter the path and name of the SSL certificate key file that will be used for the upload and download. This name can be up to 64 characters long.
tech_support_file - Specify the path and name of the technical support file that will be used for the upload. <path_filename 64> - Enter the path and name of the technical support file that will be used for the upload. This name can be up to 64 characters long.
debug_error_log_file - Specify the path and name of the debugged error log file that will be used for the upload. <path_filename 64> - Enter the path and name of the debugged error log file that will be used for the upload. This name can be up to 64 characters long.
sim_firmware_file - Specify the path and name of the SIM firmware file that will be used for the upload and download. <path_filename 64> - Enter the path and name of the SIM firmware file that will be used for the upload and download. This name can be up to 64 characters long.
sim_cfg_file - Specify the path and name of the SIM configuration file that will be used for the upload and download. <path_filename 64> - Enter the path and name of the SIM configuration file that will be used for the upload and download. This name can be up to 64 characters long.
sim_log_file - Specify the path and name of the SIM system log file that will be used for the upload and download. <path_filename 64> - Enter the path and name of the SIM system log file that will be used for the upload and download. This name can be up to 64 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the IP address of the TFTP server:

```
DGS-3000-26TC:admin#config tftp server 10.90.90.10
Command: config tftp server 10.90.90.10

Success.

DGS-3000-26TC:admin#
```

To configure the TFTP server and specify the pre-defined firmware and log filenames:

```
DGS-3000-26TC:admin#config tftp server 10.90.90.1 firmware_file runtime.had cfg_file log_tmp
Command: config tftp server 10.90.90.1 firmware_file runtime.had cfg_file log_tmp

Success.

DGS-3000-26TC:admin#
```

87-4 show tftp

Description

This command is used to display the TFTP server's settings.

Format

show tftp

Parameters

None.

Restrictions

None.

Example

To display the TFTP server's settings:

```
DGS-3000-26TC:admin#show tftp
Command: show tftp

TFTP Server Settings
IPv4 Address :

File Type          Path_filename
-----          -
firmware_file
cfg_file
log_file
attack_log_file
certificate_file
key_file
tech_support_file
debug_error_log_file
sim_firmware_file
sim_cfg_file
sim_log_file

DGS-3000-26TC:admin#
```

Chapter 88 Time and SNTP Command List

config sntp {primary <ipaddr> secondary <ipaddr> poll-interval <int 30-99999>}(1)
config sntp ipv6server {primary <ipv6addr> secondary <ipv6addr> }(1)
show sntp
enable sntp
disable sntp
config time <date ddmthyyyy> <time hh:mm:ss>
config time_zone {operator [+ -] hour <gmt_hour 0-13> min <minute 0-59>}
config dst [disable repeating {s_week <start_week 1-4,last> s_day <start_weekday sun-sat> s_mth <start_mth 1-12> s_time <start_time hh:mm> e_week <end_week 1-4,last> e_day <end_weekday sun-sat> e_mth <end_mth 1-12> e_time <end_time hh:mm> offset [30 60 90 120]} annual {s_date <start_date 1-31> s_mth<start_mth 1-12> s_time <start_time hh:mm> e_date <end_date 1-31> e_mth <end_mth 1-12> e_time <end_time hh:mm> offset [30 60 90 120]}]
show time

88-1 config sntp

Description

This command is used to change SNTP configurations.

Format

config sntp {primary <ipaddr> | secondary <ipaddr> | poll-interval <int 30-99999>}(1)

Parameters

primary - SNTP primary server IP address. <ipaddr> - Enter the IP address used for this configuration here.
secondary - SNTP secondary server IP address. <ipaddr> - Enter the IP address used for this configuration here.
poll-interval - Specify the polling interval range seconds. <int 30-99999> - Enter the polling interval range here. This value must be between 30 and 99999 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure SNTP:

```
DGS-3000-26TC:admin#config sntp primary 10.1.1.1 secondary 10.1.1.2 poll-interval 30
Command: config sntp primary 10.1.1.1 secondary 10.1.1.2 poll-interval 30

Success.

DGS-3000-26TC:admin#
```

88-2 config sntp ipv6server

Description

This command is used to configure the SNTP IPv6 server information.

Format

config sntp ipv6server {primary <ipv6addr> | secondary <ipv6addr> }(1)

Parameters

primary - SNTP primary IPv6 server address.

<ipv6addr> - Enter the IPv6 address of the Primary SNTP IPv6 server.

secondary - SNTP secondary IPv6 server address.

<ipv6addr> - Enter the IPv6 address of the Secondary SNTP IPv6 server.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure SNTP (primary IPv6 server: 1000::1, secondary IPv6 server: 1000::2):

```
DGS-3000-26TC:admin#config sntp ipv6server primary 1000::1 secondary 1000::2
```

```
Command: config sntp ipv6server primary 1000::1 secondary 1000::2
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

88-3 show sntp

Description

This command is used to display SNTP current time source and configuration.

Format

show sntp

Parameters

None.

Restrictions

None.

Example

To show SNTP:

```
DGS-3000-26TC:admin#show sntp
Command: show sntp

Current Time Source   : System Clock
SNTP                  : Disabled
IPv4 Primary SNTP Server : 10.1.1.1
IPv4 Secondary SNTP Server: 10.1.1.2
IPv6 Primary SNTP Server  : ::
IPv6 Secondary SNTP Server: ::
SNTP Poll Interval     : 30 sec

DGS-3000-26TC:admin#
```

88-4 enable sntp

Description

This command is used to turn on SNTP support.

Format

enable sntp

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable SNTP:

```
DGS-3000-26TC:admin#enable sntp
Command: enable sntp

Success.

DGS-3000-26TC:admin#
```

88-5 disable sntp

Description

This command is used to turn off SNTP support.

Format

disable sntp

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable SNTP:

```
DGS-3000-26TC:admin#disable sntp
Command: disable sntp

Success.

DGS-3000-26TC:admin#
```

88-6 config time

Description

This command is used to configure time and date settings of the device.

Format

config time <date ddmthyyyy> <time hh:mm:ss>

Parameters

<date ddmthyyyy> - Enter the system clock date. An example would look like this: '30jun2010'.

<time hh:mm:ss> - Enter the system clock time. An example would look like this: '12:00:00'.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure time:

```
DGS-3000-26TC:admin#config time 30jan2016 16:30:30
Command: config time 30jan2016 16:30:30

Success.

DGS-3000-26TC:admin#
```

88-7 config time_zone

Description

This command is used to configure time zone of the device.

Format

config time_zone {operator [+ | -] | hour <gmt_hour 0-13> | min <minute 0-59>}

Parameters

operator - (Optional) Specify the operator of time zone.

[+ | -] - Specify that time should be added or subtracted to or from the GMT.

hour - (Optional) Specify the hour of time zone.

<gmt_hour 0-13> - Enter the hour value of the time zone here. This value must be between 0 and 13.

min - (Optional) Specify the minute of time zone.

<minute 0-59> - Enter the minute value of the time zone here. This value must be between 0 and 59.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure time_zone:

```
DGS-3000-26TC:admin#config time_zone operator + hour 2 min 30
Command: config time_zone operator + hour 2 min 30

Success.

DGS-3000-26TC:admin#
```

88-8 config dst

Description

This command is used to configure Daylight Saving Time of the device.

Format

```
config dst [disable | repeating {s_week <start_week 1-4,last> | s_day <start_weekday sun-sat> | s_mth
<start_mth 1-12> | s_time <start_time hh:mm> | e_week <end_week 1-4,last> | e_day <end_weekday sun-
sat> | e_mth <end_mth 1-12> | e_time <end_time hh:mm> | offset [30 | 60 | 90 | 120]} | annual {s_date
<start_date 1-31> | s_mth<start_mth 1-12> | s_time <start_time hh:mm> | e_date <end_date 1-31> | e_mth
<end_mth 1-12> | e_time <end_time hh:mm> | offset [30 | 60 | 90 | 120]}]
```

Parameters

disable - Specify to disable the Daylight Saving Time of the Switch.

repeating - Sets the Daylight Saving Time to repeating mode.

s_week - (Optional) Specify the start week number of Daylight Saving Time.

<start_week 1-4, last> - Enter the starting week number of Daylight Saving Time here. This value must be between 1 and 4.

s_day - (Optional) Specify the start day number of Daylight Saving Time.

<start_weekday sun-sat> - Enter the starting day value of Daylight Saving Time here. This value must either be sun, mon, tue, wed, thu, fri or sat.

s_mth - (Optional) Specify the start month number of Daylight Saving Time.

<start_mth 1-12> - Enter the starting month number of Daylight Saving Time here. This value must be between 1 and 12.

s_time - (Optional) Specify the start time of Daylight Saving Time.

<start_time hh:mm> - Enter the starting time of Daylight Saving Time here. This value must be in the hh:mm format.

e_week - (Optional) Specify the end week number of Daylight Saving Time.

<end_week 1-4, last> - Enter the ending week number of Daylight Saving Time here. This value must be between 1 and 4.

e_day - (Optional) Specify the end day number of Daylight Saving Time.

<end_weekday sun-sat> - Enter the ending day value of Daylight Saving Time here. This value must either be sun, mon, tue, wed, thu, fri or sat.

e_mth - (Optional) Specify the end month number of Daylight Saving Time.

<end_mth 1-12> - Enter the ending month number of Daylight Saving Time here. This value must be between 1 and 12.

e_time - (Optional) Specify the end time of Daylight Saving Time.

<end_time hh:mm> - Enter the starting time of Daylight Saving Time here. This value must be in the hh:mm format.

offset - (Optional) Indicates number of minutes to add or to subtract during summertime.

30 - Specify that the offset range will 30 minutes.

60 - Specify that the offset range will 60 minutes. This is the default.

90 - Specify that the offset range will 90 minutes.

120 - Specify that the offset range will 120 minutes.

annual - Set the Daylight Saving Time to annual mode.

s_date - (Optional) Specify the start date of Daylight Saving Time.

<start_date 1-31> - Enter the starting date of Daylight Saving Time here. This range must be between 1 and 31.

s_mth - (Optional) Specify the start month number of Daylight Saving Time.

<start_mth 1-12> - Enter the starting month number of Daylight Saving Time here. This value must be between 1 and 12.

s_time - (Optional) Specify the start time of Daylight Saving Time.

<start_time hh:mm> - Enter the starting time of Daylight Saving Time here. This value must be in the hh:mm format.

e_date - (Optional) Specify the end date of Daylight Saving Time.

<end_date 1-31> - Enter the ending date of Daylight Saving Time here. This range must be between 1 and 31.

e_mth - (Optional) Specify the end month number of Daylight Saving Time.

<end_mth 1-12> - Enter the ending month number of Daylight Saving Time here. This value must be between 1 and 12.

e_time - (Optional) Specify the end time of Daylight Saving Time.

<end_time hh:mm> - Enter the starting time of Daylight Saving Time here. This value must be in the hh:mm format.

offset - (Optional) Indicates number of minutes to add or to subtract during summertime.

30 - Specify that the offset range will 30 minutes.

60 - Specify that the offset range will 60 minutes. This is the default.

90 - Specify that the offset range will 90 minutes.

120 - Specify that the offset range will 120 minutes.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure time:

```
DGS-3000-26TC:admin#config dst repeating s_week 2 s_day tue s_mth 4 s_time 15:00 e_week2
e_day wed e_mth 10 e_time 15:30 offset 30
Command: config dst repeating s_week 2 s_day tue s_mth 4 s_time 15:00 e_week 2 e_day wed
e_mth 10 e_time 15:30 offset 30

Success.

DGS-3000-26TC:admin#
```

88-9 show time

Description

This command is used to display time states.

Format

show time

Parameters

None.

Restrictions

None.

Example

To show time:

```
DGS-3000-26TC:admin#show time
Command: show time

Current Time Source : System Clock
Boot Time          : 9 May 2016 06:20:55
Current Time      : 9 May 2016 07:46:10
Time Zone         : GMT +00:00
Daylight Saving Time : Disabled
  Offset In Minutes : 60
  Repeating          : From : Apr 1st Sun 00:00
                    : To   : Oct last Sun 00:00
  Annual            : From : 29 Apr 00:00
                    : To   : 12 Oct 00:00

DGS-3000-26TC:admin#
```

Chapter 89 Trace Route Command List

```
traceroute [<ipaddr> | <domain_name 255>] {ttl <value 1-60> | port <value 30000-64900> | timeout <sec 1-65535> | probe <value 1-9> | source_ip <ipaddr>}
```

```
traceroute6 [<ipv6addr> | <domain_name 255>] {ttl <value 1-60> | port <value 30000-64900> | timeout <sec 1-65535> | probe <value 1-9> | source_ip <ipv6addr>}
```

89-1 traceroute

Description

This command is used to trace the routed path between the Switch and a destination end station.

Format

```
traceroute [<ipaddr> | <domain_name 255>] {ttl <value 1-60> | port <value 30000-64900> | timeout <sec 1-65535> | probe <value 1-9> | source_ip <ipaddr>}
```

Parameters

<ipaddr> - Enter the IP address of the destination end station.

<domain_name 255> - The domain name of the destination end station.

ttl - (Optional) The time to live value of the trace route request. This is the maximum number of routers that a trace route packet can pass. The traceroute command will cross while seeking the network path between two devices. The range for the TTL is 1 to 60 hops.

<value 1-60> - Enter the time to live value here. This value must be between 1 and 60.

port - (Optional) The port number. The value range is from 30000 to 64900.

<value 30000-64900> - Enter the port number here. This value must be between 30000 and 64900.

timeout - (Optional) Specify the timeout period while waiting for a response from the remote device. A value of 1 to 65535 seconds can be specified. The default is 5 seconds.

<sec 1-65535> - Enter the timeout period value here. This value must be between 1 and 65535 seconds.

probe - (Optional) The number of probing. The range is from 1 to 9. If unspecified, the default value is 1.

<value 1-9> - Enter the probing number value here. This value must be between 1 and 9.

source_ip - (Optional) Specify the source IP of the traceroute packets. The IP address is used as the source IP address of the packets that send to the remote host.

<ipaddr> - Enter the IP address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To trace the routed path between the Switch and 10.48.74.121:

```
DGS-3000-26TC:admin#traceroute 10.48.74.121 probe 3
Command: traceroute 10.48.74.121 probe 3

 1  <10 ms.    10.12.73.254
 2  <10 ms.    10.19.68.1
 3  <10 ms.    10.48.74.121

Trace complete.
DGS-3000-26TC:admin#
```

89-2 traceroute6

Description

This command is used to trace the IPv6 routed path between the Switch and a destination end station.

Format

traceroute6 [**<ipv6addr>** | **<domain_name 255>**] {**ttl <value 1-60>** | **port <value 30000-64900>** | **timeout <sec 1-65535>** | **probe <value 1-9>** | **source_ip <ipv6addr>**}

Parameters

<ipv6addr>	- Enter the IPv6 address of the destination end station.
<domain_name 255>	- Enter the domain name of the destination end station.
ttl	- (Optional) The time to live value of the trace route request. This is the maximum number of routers that a trace route packet can pass. The traceroute command will cross while seeking the network path between two devices. The range for the TTL is 1 to 60 hops.
<value 1-60>	- Enter the time to live value here. This value must be between 1 and 60.
port	- (Optional) The port number. The value range is from 30000 to 64900.
<value 30000-64900>	- Enter the port number here. This value must be between 30000 and 64900.
timeout	- (Optional) Specify the timeout period while waiting for a response from the remote device. A value of 1 to 65535 seconds can be specified. The default is 5 seconds.
<sec 1-65535>	- Enter the timeout period value here. This value must be between 1 and 65535 seconds.
probe	- (Optional) The number of probing. The range is from 1 to 9. If unspecified, the default value is 1.
<value 1-9>	- Enter the probing number value here. This value must be between 1 and 9.
source_ip	- (Optional) Specify the source IPv6 of the traceroute packets. The IPv6 address is used as the source IPv6 address of the packets that send to the remote host.
<ipv6addr>	- Enter the IPv6 address.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To trace the IPv6 routed path between the Switch and 3000::1:

```
DGS-3000-26TC:admin#traceroute6 3000::1 probe 3
Command: traceroute6 3000::1 probe 3

 1  <10 ms.      1345:142::11
 2  <10 ms.      2011:14::100
 3  <10 ms.      3000::1

Trace complete.
DGS-3000-26TC:admin#
```

To trace the IPv6 routed path between the Switch and 1210:100::11 with port 40000:

```
DGS-3000-26TC:admin#traceroute6 1210:100::11 port 40000
```

```
Command: traceroute6 1210:100::11 port 40000
```

```
1  <10 ms.      3100::25
2  <10 ms.      4130::100
3  <10 ms.      1210:100::11
```

```
Trace complete.
```

```
DGS-3000-26TC:admin#
```

Chapter 90 Traffic Control Command List

```

config traffic control [<portlist> | all] {broadcast [enable | disable] | multicast [enable | disable] | unicast [enable |
  disable] | action [drop | shutdown] | threshold <value 0-255000> | countdown [<min 0> | <min 3-30> | disable] |
  time_interval <sec 5-600>}(1)
config traffic trap [none | storm_occurred | storm_cleared | both]
show traffic control {<portlist>}
config traffic control log state [enable | disable]
config traffic control auto_recover_time [<min 0> | <min 1-65535>]

```

90-1 config traffic control

Description

This command is used to configure broadcast/ multicast/ unicast packet storm control. Shutdown mode is provided to monitor the traffic rate in addition to the storm control drop mode. If traffic rate is too high, this port will be shut down.

Format

```

config traffic control [<portlist> | all] {broadcast [enable | disable] | multicast [enable | disable] | unicast
[enable | disable] | action [drop | shutdown] | threshold <value 0-255000> | countdown [<min 0> | <min 3-
30> | disable] | time_interval <sec 5-600>}(1)

```

Parameters

<portlist> - Enter a range of ports to be configured.

all - Specify that all the ports will be used for this configuration.

broadcast - Specify to enable or disable broadcast storm control.
enable - Specify that broadcast storm control will be enabled.
disable - Specify that broadcast storm control will be disabled.

multicast - Specify to enable or disable multicast storm control.
enable - Specify that multicast storm control will be enabled.
disable - Specify that multicast storm control will be disabled.

unicast - Specify to enable or disable unknown packet storm control. (Supported for drop mode only)
enable - Specify that unicast storm control will be enabled.
disable - Specify that unicast storm control will be disabled.

action - One of the two options for action is specified for storm control, shutdown or drop mode. Shutdown mode is a function of software, drop mode is implemented by the chip. If shutdown mode is specified, it is necessary to configure values for the countdown and time_interval parameters.
drop - Specify that the action applied will be drop mode.
shutdown - Specify that the action applied will be shutdown mode.

threshold - The upper threshold, at which point the specified storm control is triggered. The <value> is the number of broadcast/multicast/unknown unicast packets per second received by the Switch that will trigger the storm traffic control measure. The threshold is expressed as PPS (packets per second) and must be an unsigned integer.
<value 0-255000> - Enter the upper threshold value here. This value must be between 0 and 255000.

countdown - Timer for shutdown mode. If a port enters the shutdown Rx state and this timer runs out, port will be shutdown forever. The parameter is not applicable if "drop" (mode) is specified for the "action" parameter.
<min 0> - Enter 0 to disable the forever state, meaning that the port will not enter the shutdown forever state.
<min 3-30> - Enter the countdown timer value here. This value must be between 3 and 30.
disable - Specify that the countdown timer will be disabled.

time_interval - The sampling interval of received packet counts. The possible value will be m-n seconds. The parameter is not applicable if "drop" (mode) is specified for the "action" parameter.
<sec 5-600> - Enter the time interval value here. This value must be between 5 and 600.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the parameters so that the traffic control status is enabled on ports 1-12:

```
DGS-3000-26TC:admin#config traffic control 1-12 broadcast enable action shutdown threshold 1
countdown 5 time_interval 10
Command: config traffic control 1-12 broadcast enable action shutdown threshold 1 countdown 5
time_interval 10

Success.

DGS-3000-26TC:admin#
```

90-2 config traffic trap

Description

This command is used to configure trap modes.

- **Occurred Mode:** This trap is sent when a packet storm is detected by the packet storm mechanism.
- **Cleared Mode:** This trap is sent when the packet storm is cleared by the packet storm mechanism.

Format

config traffic trap [none | storm_occurred | storm_cleared | both]

Parameters

none - No trap state is specified for storm control.

storm_occurred - Occurred mode is enabled and cleared mode is disabled.

storm_cleared - Occurred mode is disabled and cleared mode is enabled.

both - Both occurred and cleared modes are enabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable both the occurred mode and cleared mode traffic control traps:

```
DGS-3000-26TC:admin#config traffic trap both
Command: config traffic trap both

Success.

DGS-3000-26TC:admin#
```

90-3 show traffic control

Description

This command is used to display the current traffic control settings.

Format**show traffic control {<portlist>}****Parameters****<portlist>** - (Optional) Enter the range of ports to be shown.

If no parameter is specified, the system will display the packet storm control configuration for all ports.

Restrictions

None.

Example

To display the traffic control parameters for ports 1 to 10:

```
DGS-3000-26TC:admin#show traffic control 1-10
Command: show traffic control 1-10

Traffic Control Trap           : [Both]
Traffic Control Log           : Enabled
Traffic Control Auto Recover Time: 0 Minutes

Port Thres  Broadcast  Multicast  Unicast  Action  Count  Time  Shutdown
   hold   Storm    Storm    Storm          down  down  Interval Forever
-----
1    1      Enabled   Disabled  Disabled shutdown 5    10
2    1      Enabled   Disabled  Disabled shutdown 5    10
3    1      Enabled   Disabled  Disabled shutdown 5    10
4    1      Enabled   Disabled  Disabled shutdown 5    10
5    1      Enabled   Disabled  Disabled shutdown 5    10
6    1      Enabled   Disabled  Disabled shutdown 5    10
7    1      Enabled   Disabled  Disabled shutdown 5    10
8    1      Enabled   Disabled  Disabled shutdown 5    10
9    1      Enabled   Disabled  Disabled shutdown 5    10
10   1      Enabled   Disabled  Disabled shutdown 5    10

DGS-3000-26TC:admin#
```

90-4 config traffic control log state**Description**

This command is used to configure the traffic control log state. When the log state is enabled, traffic control states are logged when a storm occurs and when a storm is cleared. If the log state is disabled, traffic control events are not logged.

NOTE: The log state is only applicable for shutdown mode. Since shutdown mode only support broadcast and multicast storm control, doesn't support unicast storm control. The log only generate for broadcast and multicast storm control.

Format**config traffic control log state [enable | disable]**

Parameters

enable - Both occurred and cleared are logged.
disable - Neither occurred nor cleared is logged.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the traffic log state on the Switch:

```
DGS-3000-26TC:admin#config traffic control log state enable
Command: config traffic control log state enable

Success.

DGS-3000-26TC:admin#
```

90-5 config traffic control auto_recover_time

Description

This command is used to configure the traffic auto-recovery time that is allowed for a port to recover from the shutdown forever status. When the auto-recovery option is disabled on a port, the port will remain in the shutdown mode. The only way to restore the port to the forwarding state is by entering the **config ports [<portlist> | all] state enable** command manually.

Format

config traffic control auto_recover_time [<min 0> | <min 1-65535>]

Parameters

<min 0> - Enter that the auto-recovery option will be disabled. This is the default value.
<min 1-65535> - Enter the auto-recovery from shutdown time value here. This value must be between 1 and 65535.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the auto-recovery time to 5 minutes:

```
DGS-3000-26TC:admin#config traffic control auto_recover_time 5
Command: config traffic control auto_recover_time 5

Success.

DGS-3000-26TC:admin#
```

Chapter 91 Traffic Segmentation Command List

```
config traffic_segmentation [<portlist> | all] forward_list [null | all | <portlist>]
show traffic_segmentation {<portlist>}
```

91-1 config traffic_segmentation

Description

This command is used to configure the traffic segmentation.

Format

```
config traffic_segmentation [<portlist> | all] forward_list [null | all | <portlist>]
```

Parameters

<portlist> - Enter a range of ports to be configured.
all - Specify that all the ports will be used for this configuration.
forward_list - Specify a range of port forwarding domain.
null - Specify a range of port forwarding domain is null.
all - Specify all ports to be configured.
<portlist> - Enter a range of ports to be configured.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure traffic segmentation:

```
DGS-3000-26TC:admin#config traffic_segmentation 1-10 forward_list 11-15
Command: config traffic_segmentation 1-10 forward_list 11-15

Success.

DGS-3000-26TC:admin#
```

91-2 show traffic_segmentation

Description

This command is used to display current traffic segmentation table.

Format

```
show traffic_segmentation {<portlist>}
```

Parameters

<portlist> - (Optional) Enter a range of ports to be displayed.

If no parameter is specified, the system will display all current traffic segmentation tables.

Restrictions

None.

Example

To display traffic segmentation table:

```
DGS-3000-26TC:admin#show traffic_segmentation 1-10
Command: show traffic_segmentation 1-10
```

```
Traffic Segmentation Table
```

```
Port   Forward Portlist
```

```
-----
1      11-15
2      11-15
3      11-15
4      11-15
5      11-15
6      11-15
7      11-15
8      11-15
9      11-15
10     11-15
```

```
DGS-3000-26TC:admin#
```

Chapter 92 Trusted Host Command List

```

create trusted_host [<ipaddr> | <ipv6addr> | network <network_address> | ipv6_prefix <ipv6networkaddr>]
  {snmp | telnet | ssh | http | https | ping}
delete trusted_host [ipaddr <ipaddr> | ipv6address <ipv6addr> | network <network_address> | ipv6_prefix
  <ipv6networkaddr > | all]
config trusted_host [<ipaddr> | <ipv6addr> | network <network_address> | ipv6_prefix <ipv6networkaddr>] [add
  | delete] {snmp | telnet | ssh | http | https | ping | all}
show trusted_host

```

92-1 create trusted_host

Description

This command is used to create the trusted host. The switch allows you to specify up to ten IPv4 and IPv6 addresses that are allowed to manage the Switch via in-band SNMP, Telnet or WEB based management software. These IPv4 or IPv6 addresses must be members of the Management VLAN. If no IPv4 or IPv6 addresses are specified, then there is nothing to prevent any IPv4 or IPv6 addresses from accessing the Switch, provided the user knows the Username and Password.

When the access interface is not specified, the trusted host will be created for all interfaces.

Format

```

create trusted_host [<ipaddr> | <ipv6addr> | network <network_address> | ipv6_prefix <ipv6networkaddr>]
  {snmp | telnet | ssh | http | https | ping}

```

Parameters

<ipaddr> - Enter the trusted host IP address.

<ipv6addr> - Enter the trusted host IPv6 address.

network - The network address of the trusted network. The network address takes the form of: xxx.xxx.xxx.xxx/y. Where "x" represents an IP number.

<network_address> - Enter the network address used here.

ipv6_prefix - Specify that IPv6 prefix here.

<ipv6networkaddr> - Enter the IPv6 network address here.

snmp - (Optional) Specify trusted host for SNMP.

telnet - (Optional) Specify trusted host for TELENT.

ssh - (Optional) Specify trusted host for SSH.

http - (Optional) Specify trusted host for HTTP.

https - (Optional) Specify trusted host for HTTPS.

ping - (Optional) Specify trusted host for PING.

Restrictions

Only Administrators and Operators can issue this command.

Example

To create the trusted host:

```
DGS-3000-26TC:admin#create trusted_host 10.48.74.121
Command: create trusted_host 10.48.74.121

Success.

DGS-3000-26TC:admin#
```

92-2 delete trusted_host

Description

This command is used to delete a trusted host entry made using the create trusted_host command above.

Format

delete trusted_host [ipaddr <ipaddr> | ipv6address <ipv6addr> | network <network_address> | ipv6_prefix <ipv6networkaddr > | all]

Parameters

ipaddr - The IP address of the trusted host. <ipaddr> - Enter the IP address used for this configuration here.
ipv6addr - The IPv6 address of the trusted host. <ipv6addr> - Enter the IPv6 address used for this configuration here.
network - The network address of the trusted network. <network_address> - Enter the network address used for this configuration here.
ipv6_prefix - The IPv6 subnet prefix of the trusted network. <ipv6networkaddr> - Enter the IPv6 subnet prefix here.
all - All trusted hosts will be deleted.

Restrictions

Only Administrators and Operators can issue this command.

Example

To delete the trusted host:

```
DGS-3000-26TC:admin#delete trusted_host ipaddr 10.48.74.121
Command: delete trusted_host ipaddr 10.48.74.121

Success.

DGS-3000-26TC:admin#
```

92-3 config trusted_host

Description

This command is used to configure the access interfaces for the trusted host.

Format

config trusted_host [<ipaddr> | <ipv6addr> | network <network_address> | ipv6_prefix <ipv6networkaddr>] [add | delete] {snmp | telnet | ssh | http | https | ping | all}

Parameters

<ipaddr>	- Enter the trusted host IP address.
<ipv6addr>	- Enter the trusted host IPv6 address.
network	- The network address of the trusted network. The network address takes the form of: xxx.xxx.xxx.xxx/y where "x" represents an IP number.
<network_address>	- Enter the network address used here.
ipv6_prefix	- The IPv6 subnet prefix of the trusted network.
<ipv6networkaddr>	- Enter the IPv6 subnet prefix here.
add	- Adds interfaces for that trusted host.
delete	- Deletes interfaces for that trusted host.
snmp	- (Optional) Specify trusted host for SNMP.
telnet	- (Optional) Specify trusted host for TELENT.
ssh	- (Optional) Specify trusted host for SSH.
http	- (Optional) Specify trusted host for HTTP.
https	- (Optional) Specify trusted host for HTTPS.
ping	- (Optional) Specify trusted host for PING.
all	- (Optional) Specify trusted host for all applications.

Restrictions

Only Administrators and Operators can issue this command.

Example

To configure the trusted host:

```
DGS-3000-26TC:admin#config trusted_host 10.48.74.121 add ssh telnet
Command: config trusted_host 10.48.74.121 add ssh telnet

Success.

DGS-3000-26TC:admin#
```

92-4 show trusted_host

Description

This command is used to display a list of trusted hosts entered on the Switch using the **create trusted_host** command above.

Format

show trusted_host

Parameters

None.

Restrictions

None.

Example

To display trusted host:

```
DGS-3000-26TC:admin#show trusted_host
```

```
Command: show trusted_host
```

```
Management Stations
```

IP Address	Access Interface
-----	-----
10.48.74.121	SNMP Telnet SSH HTTP HTTPS Ping

```
Total Entries: 1
```

```
DGS-3000-26TC:admin#
```


Chapter 93 Unicast Routing Command List

```
create iproute [default | <network_address>] <ipaddr> {<metric 1-65535>} {[primary | backup]}
```

```
delete iproute [default | <network_address>] <ipaddr>
```

```
show iproute {<network_address> | <ipaddr>} {static}
```

93-1 create iproute

Description

This command is used to create an IP route entry in the Switch's IP routing table. "Primary" and "backup" are mutually exclusive. Users can select only one when creating one new route. If a user sets neither of these, the system will try to set the new route first by primary and second by backup and not set this route to be a multipath route.

Format

```
create iproute [default | <network_address>] <ipaddr> {<metric 1-65535>} {[primary | backup]}
```

Parameters

default - Specify to create an IP default route (0.0.0.0/0).

network_address - Specify the IP address and net mask of the destination route. The address and the mask can be set using the traditional format (for example, 10.1.2.3/255.0.0.0) or in CIDR format (for example, 10.1.2.3/16).

<ipaddr> - Enter the IP address for the IP route.

<metric 1-65535> - (Optional) Enter the routing protocol metric entry representing the number of routers between the Switch and the IP address above. The default setting is 1.

primary - (Optional) Specify the route as the primary route to the destination

backup - (Optional) Specify the route as the backup route to the destination.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add an IP default route:

```
DGS-3000-26TC:admin# create iproute 10.48.74.121/255.0.0.0 10.1.1.254 primary
```

```
Command: create iproute 10.48.74.121/8 10.1.1.254 primary
```

```
DGS-3000-26TC:admin# create iproute 11.53.73.131/8 10.1.2.11
```

```
Command: Command: create iproute 11.53.73.131/8 10.1.2.11
```

```
Success.
```

```
DGS-3000-26TC:admin#
```

93-2 delete iproute

Description

This command is used to delete an IP route entry from the Switch's IP routing table.

Format

delete iproute [default | <network_address>] <ipaddr>

Parameters

default - Deletes an IP default route (0.0.0.0/0).
<network_address> - Enter the destination IP address and net mask route. The address and the mask can be set by the traditional format (for example, 10.1.2.3/255.0.0.0 or in CIDR format, 10.1.2.3/16).
<ipaddr> - Enter the next hop IP address route that needs to be deleted

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete an IP default route:

```
DGS-3000-26TC:admin# delete iproute 10.48.74.121/255.0.0.0 10.1.1.254
Command: delete iproute 10.48.74.121/8 10.1.1.254

Success.

DGS-3000-26TC:admin#
```

93-3 show iproute

Description

This command is used to display the switch's IP routing table.

Format

show iproute {<network_address> | <ipaddr>} {static}

Parameters

<network_address> - (Optional) Enter the destination network address of the route to be displayed.
<ipaddr> - (Optional) Enter the destination IP address of the route to be displayed. The longest prefix matched route will be displayed
static - (Optional) Specify to display only static routes. One static route may be active or inactive.

Restrictions

None.

Example

To display the contents of the IP routing table:

```
DGS-3000-26TC:admin#show iproute
```

```
Command: show iproute
```

```
Routing Table
```

IP Address/Netmask	Gateway	Interface	Cost	Protocol
10.1.1.0/24	0.0.0.0	System	1	Local
192.168.1.0/24	0.0.0.0	ipl	1	Local

```
Total Entries : 2
```

```
DGS-3000-26TC:admin#show iproute static
```

```
Command: show iproute static
```

```
Routing Table
```

IP Address/Netmask	Gateway	Cost	Protocol	Backup	Status
0.0.0.0/0	10.1.1.11	1	Default	Primary	Active
100.1.1.0/24	10.1.1.11	1	Static	Primary	Active
101.1.1.0/24	10.1.1.12	1	Static	Primary	Inactive
102.1.1.0/24	tn1	1	Static	Primary	Inactive
103.1.1.0/24	tn2	1	Static	Primary	Active

```
Total Entries : 5
```

```
DGS-3000-26TC:admin#
```

Chapter 94 VLAN Trunking Command List

enable vlan_trunk

disable vlan_trunk

config vlan_trunk ports [<portlist> | all] state [enable | disable]

show vlan_trunk

94-1 enable vlan_trunk

Description

This command is used to enable the VLAN trunk function. When the VLAN trunk function is enabled, the VLAN trunk ports shall be able to forward all tagged frames with any VID.

Format

enable vlan_trunk

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To enable the VLAN Trunk:

```
DGS-3000-26TC:admin#enable vlan_trunk
Command: enable vlan_trunk

Success.

DGS-3000-26TC:admin#
```

94-2 disable vlan_trunk

Description

This command is used to disable the VLAN trunk function.

Format

disable vlan_trunk

Parameters

None.

Restrictions

Only Administrators can issue this command.

Example

To disable the VLAN Trunk:

```
DGS-3000-26TC:admin#disable vlan_trunk
Command: disable vlan_trunk

Success.

DGS-3000-26TC:admin#
```

94-3 config vlan_trunk ports

Description

This command is used to configure a port as a VLAN trunk port. By default, none of the port is a VLAN trunk port.

If the user enables the global VLAN trunk function and configure the VLAN trunk ports, then the trunk port will be member port of all VLANs. That is, if a VLAN is already configured by the user, but the trunk port is not member port of that VLAN, this trunk port will automatically become tagged member port of that VLAN. If a VLAN is not created yet, the VLAN will be automatically created, and the trunk port will become tagged member of this VLAN.

When the user disables the VLAN trunk globally, all VLANs automatically created by VLAN Trunk enabled shall be destroyed, and all the automatically added port membership will be removed.

A VLAN trunk port and a non-VLAN trunk port cannot be grouped as an aggregated link. To change the VLAN trunk setting for an aggregated link, the user must apply the command to the master port. However, this setting will disappear as the aggregated link is destroyed, and the VLAN trunk setting of the individual port will follow the original setting of the port.

If the command is applied to link aggregation member port excluding the master, the command will be rejected.

The ports with different VLAN configurations are not allowed to form an aggregated link. However, if they are specified as VLAN trunk port, they are allowed to form an aggregated link.

For a VLAN trunk port, the VLANs on which the packets can be by passed will not be advertised by GVRP on this port. However, since the traffic on these VLANs are forwarded, this VLAN trunk port should participate the MSTP instances corresponding to these VLAN.

Format

config vlan_trunk ports [<portlist> | all] state [enable | disable]

Parameters

<portlist> - Enter a list of ports used for the configuration here.
all - Specify that all the ports will be used for this configuration.
state - Specify that the port is a VLAN trunk port or not.
enable - Specify that the port is a VLAN trunk port.
disable - Specify that the port is not a VLAN trunk port.

Restrictions

Only Administrators can issue this command.

Example

To configure VLAN trunk ports:

```
DGS-3000-26TC:admin#config vlan_trunk ports 1-5 state enable
Command: config vlan_trunk ports 1-5 state enable

Success.

DGS-3000-26TC:admin#
```

Port 6 is LA-1 member port; port 7 is LA-2 master port:

```
DGS-3000-26TC:admin#config vlan_trunk ports 6-7 state enable
Command: config vlan_trunk ports 6-7 state enable

Warning: Port 6 is a Link Aggregation member port, VLAN trunk is not enabled on port 6.
Success.

DGS-3000-26TC:admin#config vlan_trunk ports 7 state disable
Command: config vlan_trunk ports 7 state disable

Success.

DGS-3000-26TC:admin#config vlan_trunk ports 6-7 state disable
Command: config vlan_trunk ports 6-7 state disable

Warning: Port 6 is a Link Aggregation member port, VLAN trunk is not enabled on port 6.
Success.

DGS-3000-26TC:admin#
```

Port 6 is LA-1 member port; port 7 is LA-1 master port:

```
DGS-3000-26TC:admin#config vlan_trunk ports 6-7 state enable
Command: config vlan_trunk ports 6-7 state enable

Success.

DGS-3000-26TC:admin#
```

Port 6, 7 have the same VLAN configuration before enabling VLAN trunk.

Port 6 is LA-1 member port; port 7 is LA-1 master port.

```
DGS-3000-26TC:admin#config vlan_trunk ports 7 state disable
Command: config vlan_trunk ports 7 state disable

Success.

DGS-3000-26TC:admin#config vlan_trunk ports 6-7 state disable
Command: config vlan_trunk ports 6-7 state disable

Success.

DGS-3000-26TC:admin#
```

94-4 show vlan_trunk

Description

This command is used to show the VLAN trunk configuration.

Format

show vlan_trunk

Parameters

None.

Restrictions

None.

Example

To show the VLAN Trunk information:

```
DGS-3000-26TC:admin#show vlan_trunk
Command: show vlan_trunk

VLAN Trunk Global Setting
-----
VLAN Trunk Status   : Disabled
VLAN Trunk Member Ports : 1-5

DGS-3000-26TC:admin#
```

The following example displays the VLAN information which will also display VLAN trunk setting:

```
DGS-3000-26TC:admin#show vlan
```

```
Command: show vlan
```

```
VLAN Trunk State      : Enabled
```

```
VLAN Trunk Member Ports : 1-5
```

```
VID      : 1          VLAN Name      : default
```

```
VLAN Type : Static    Advertisement : Enabled
```

```
Member Ports : 1-26
```

```
Static Ports : 1-26
```

```
Current Tagged Ports :
```

```
Current Untagged Ports: 1-26
```

```
Static Tagged Ports :
```

```
Static Untagged Ports : 1-26
```

```
Forbidden Ports      :
```

```
Total Static VLAN Entries: 1
```

```
Total GVRP VLAN Entries: 0
```

```
DGS-3000-26TC:admin#
```


Chapter 95 Voice VLAN Command List

enable voice_vlan [<vlan_name 32> vlanid <vlanid 1-4094>]
disable voice_vlan
config voice_vlan priority <int 0-7>
config voice_vlan oui [add delete] <macaddr> <macmask> {description <desc 32>}
config voice_vlan ports [<portlist> all] [state [enable disable] mode [auto {[tag untag]} manual]]
config voice_vlan aging_time <min 1-65535>
config voice_vlan log state [enable disable]
show voice_vlan
show voice_vlan oui
show voice_vlan ports {<portlist>}
show voice_vlan voice_device {ports <portlist>}
show voice_vlan lldp_med voice_device

95-1 enable voice_vlan

Description

This command is used to enable the global voice VLAN function on a switch. To enable the voice VLAN, the voice VLAN must be also assigned. At the same time, the VLAN must be an existing static 802.1Q VLAN. To change the voice VLAN, the user must disable the voice VLAN function, and re-issue this command. By default, the global voice VLAN state is disabled.

Format

enable voice_vlan [<vlan_name 32> | vlanid <vlanid 1-4094>]

Parameters

<vlan_name 32> - Enter the name of the voice VLAN here. This name can be up to 32 characters long.

vlanid - Specify the VLAN ID of the voice VLAN.

<vlanid 1-4094> - Enter the voice VLAN ID here. This value must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable a voice VLAN with name "v2":

```
DGS-3000-26TC:admin#enable voice_vlan v2
Command: enable voice_vlan v2

Success.

DGS-3000-26TC:admin#
```

95-2 disable voice_vlan

Description

This command is used to disable the voice VLAN function on a switch. When the voice VLAN function is disabled, the voice VLAN will become unassigned.

Format

disable voice_vlan

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the voice VLAN:

```
DGS-3000-26TC:admin#disable voice_vlan
Command: disable voice_vlan

Success.

DGS-3000-26TC:admin#
```

95-3 config voice_vlan priority

Description

This command is used to configure the voice VLAN priority. The voice VLAN priority will be the priority associated with the voice VLAN traffic to distinguish the QoS of the voice traffic from data traffic.

Format

config voice_vlan priority <int 0-7>

Parameters

<int 0-7> - Enter the priority of the voice VLAN. This value must be between 0 and 7. The default priority is 5.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set the priority of the voice VLAN to be 6:

```
DGS-3000-26TC:admin#config voice_vlan priority 6
Command: config voice_vlan priority 6

Success.

DGS-3000-26TC:admin#
```

95-4 config voice_vlan oui

Description

This command is used to configure the user-defined voice traffic's OUI. The OUI is used to identify the voice traffic. There are a number of pre-defined OUIs. The user can further define the user-defined OUIs if needed. The user-defined OUI cannot be the same as the pre-defined OUI.

The following are the pre-defined voice traffic's OUI:

OUI	Vendor	Mnemonic Name
00:E0:BB	3COM.	3com
00:03:6B	Cisco	cisco
00:E0:75	Veritel	veritel
00:D0:1E	Pingtel	pingtel
00:01:E3	Siemens	siemens
00:60:B9	NEC/ Philips	nec&philips
00:0F:E2	Huawei-3COM	huawei&3com
00:09:6E	Avaya	avaya

Format

```
config voice_vlan oui [add | delete] <macaddr> <macmask> {description <desc 32>}
```

Parameters

add - Adds a user-defined OUI of a voice device vendor.

delete - Deletes a user-defined OUI of a voice device vendor.

<macaddr> - Enter the user-defined OUI MAC address.

<macmask> - Enter the user-defined OUI MAC address mask.

description - (Optional) The description for the user-defined OUI.

<desc 32> - Enter the description here. This value can be up to 32 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To add a user-defined OUI for a voice device:

```
DGS-3000-26TC:admin#config voice_vlan oui add 00-0A-0B-00-00-00 FF-FF-FF-00-00-00
Command: config voice_vlan oui add 00-0A-0B-00-00-00 FF-FF-FF-00-00-00

Success.

DGS-3000-26TC:admin#
```

95-5 config voice_vlan ports

Description

This command is used to enable or disable the voice VLAN function on ports.

Format

config voice_vlan ports [<portlist> | all] [state [enable | disable] | mode [auto {[tag | untag]} | manual]]

Parameters

<portlist> - Enter a list of ports to be configured.

all - Specify to configure all ports.

state - The voice VLAN function state on ports. The default state is disabled.

enable - Specify that the voice VLAN function for this switch will be enabled.

disable - Specify that the voice VLAN function for this switch will be disabled.

mode - The voice VLAN mode. The default mode is auto.

auto - Specify that the voice VLAN mode will be set to auto.

tag - When the port is working in auto-tagged mode, and learns about a voice device through the device's OUI, it will join the voice VLAN as a tagged member automatically. When the voice device sends voice VLAN tagged packets, the Switch will change its priority. When the voice device sends untagged packets, it will forward them to port's PVID VLAN.

untag - When the port is working in auto-untagged mode, and the port captures a voice device through the device's OUI, it will join the voice VLAN as an untagged member automatically. When the voice device sends voice VLAN tagged packets, the Switch will forward them according to the tag. When the voice device sends voice VLAN untagged packets, it will assign priority and voice VLAN ID into this packet. When the Switch receives LLDP-MED packets, it checks the VLAN ID, tagged flag and priority flag. The switch should follow the tagged flag and priority setting. By default, the mode is auto untagged.

manual - Specify that the voice VLAN mode will be set to manual.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure voice VLAN ports 4-6 to enable:

```
DGS-3000-26TC:admin#config voice_vlan ports 4-6 state enable
Command: config voice_vlan ports 4-6 state enable

Success.

DGS-3000-26TC:admin#
```

To set the mode auto to voice VLAN ports 3-5:

```
DGS-3000-26TC:admin#config voice_vlan ports 3-5 mode auto
Command: config voice_vlan ports 3-5 mode auto

Success.

DGS-3000-26TC:admin#
```

95-6 config voice_vlan aging_time

Description

This command is used to set the aging time of the voice VLAN. The aging time is used to remove a port from voice VLAN if the port is an automatic VLAN member. When the last voice device stops sending traffic and the MAC address of this voice device is aged out, the voice VLAN aging timer will be started. The port will be removed from the voice VLAN after expiration of the voice VLAN aging timer.

If the voice traffic resumes during the aging time, the aging timer will be stopped and reset.

Format

config voice_vlan aging_time <min 1-65535>

Parameters

<min 1-65535> - Enter the aging time between 1 and 65535.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To set 60 minutes as the aging time of voice VLAN:

```
DGS-3000-26TC:admin#config voice_vlan aging_time 60
Command: config voice_vlan aging_time 60

Success.

DGS-3000-26TC:admin#
```

95-7 config voice_vlan log state

Description

This command is used to configure the log state for voice VLAN. If there is a new voice device detected/or a port joins/leaves the voice VLAN dynamically, and the log is enabled, a log will be triggered.

Format

config voice_vlan log state [enable | disable]

Parameters

enable - Specify that the sending of a voice VLAN log will be enabled.

disable - Specify that the sending of a voice VLAN log will be disabled.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the log state for voice VLAN:

```
DGS-3000-26TC:admin#config voice_vlan log state enable
Command: config voice_vlan log state enable

Success.

DGS-3000-26TC:admin#
```

95-8 show voice_vlan

Description

This command is used to show the voice VLAN global information.

Format

show voice_vlan

Parameters

None.

Restrictions

None.

Example

To display the voice VLAN global information when voice VLAN is enabled:

```
DGS-3000-26TC:admin#show voice_vlan
Command: show voice_vlan

Voice VLAN State      : Enabled
VLAN ID               : 2
VLAN Name             : v2
Priority              : 6
Aging Time           : 60 minutes
Log State             : Enabled
Member Ports         :
Dynamic Member Ports :

DGS-3000-26TC:admin#
```

To display the voice VLAN global information when voice VLAN is disabled:

```
DGS-3000-26TC:admin#show voice_vlan
Command: show voice_vlan

Voice VLAN State      : Disabled
Voice VLAN            : Unassigned
Priority              : 6
Aging Time           : 60 minutes
Log State             : Enabled

DGS-3000-26TC:admin#
```

95-9 show voice_vlan oui

Description

This command is used to display OUI information of voice VLAN.

Format

show voice_vlan oui

Parameters

None.

Restrictions

None.

Example

To display the OUI information of voice VLAN:

```
DGS-3000-26TC:admin#show voice_vlan oui
Command: show voice_vlan oui

OUI Address          Mask                Description
-----
00-01-E3-00-00-00   FF-FF-FF-00-00-00   Siemens
00-03-6B-00-00-00   FF-FF-FF-00-00-00   Cisco
00-09-6E-00-00-00   FF-FF-FF-00-00-00   Avaya
00-0A-0B-00-00-00   FF-FF-FF-00-00-00
00-0F-E2-00-00-00   FF-FF-FF-00-00-00   Huawei&3COM
00-60-B9-00-00-00   FF-FF-FF-00-00-00   NEC&Philips
00-D0-1E-00-00-00   FF-FF-FF-00-00-00   Pingtel
00-E0-75-00-00-00   FF-FF-FF-00-00-00   Veritel
00-E0-BB-00-00-00   FF-FF-FF-00-00-00   3COM

Total Entries: 9

DGS-3000-26TC:admin#
```

95-10 show voice_vlan ports

Description

This command is used to display the port voice VLAN information.

Format

show voice_vlan ports {<portlist>}

Parameters

<portlist> - (Optional) Enter a list of ports to be displayed.

Restrictions

None.

Example

To display the voice VLAN information of ports 1-5:

```
DGS-3000-26TC:admin#show voice_vlan ports 1-5
Command: show voice_vlan ports 1-5

Ports   Status      Mode
-----  -
1       Disabled   Auto Untagged
2       Disabled   Auto Untagged
3       Disabled   Auto Untagged
4       Enabled    Auto Untagged
5       Enabled    Auto Untagged

DGS-3000-26TC:admin#
```

95-11 show voice_vlan voice_device

Description

This command is used to show voice devices that are connected to the ports. The start time is the time when the device is detected on this port and the activate time is the latest time the device sent traffic.

Format

show voice_vlan voice_device {ports <portlist>}

Parameters

ports - (Optional) Specify the list of ports to be configured here.
<portlist> - Enter a list of ports used to be displayed here.

Restrictions

None.

Example

To display the voice devices that are connected to the ports 1-5:

```
DGS-3000-26TC:admin#show voice_vlan voice_device ports 1-5
Command: show voice_vlan voice_device ports 1-5

Ports   Voice Device           Start Time           Last Active Time
-----  -
1       00-E0-BB-00-00-01     2008-10-6 09:00     2008-10-6 10:30
1       00-E0-BB-00-00-02     2008-10-6 14:10     2008-10-6 15:00
1       00-E0-BB-00-00-03     2008-10-6 14:20     2008-10-6 15:30
2       00-03-6B-00-00-01     2008-10-6 17:15     2008-10-6 18:00
4       00-E0-75-00-00-02     2008-10-6 18:15     2008-10-6 20:00
5       00-01-E3-01-02-03     2008-10-6 18:30     2008-10-6 20:30

Total Entries : 6

DGS-3000-26TC:admin#
```

95-12 show voice_vlan lldp_med voice_device

Description

This command is used to show the voice devices being discovered by the LLDP-MED.

Format

show voice_vlan lldp_med voice_device

Parameters

None.

Restrictions

None.

Example

To display the voice devices discovered by LLDP-MED:

```
DGS-3000-26TC:admin#show voice_vlan lldp_med voice_device
```

```
Command: show voice_vlan lldp_med voice_device
```

```
Index          : 1
Local Port     : 1
Chassis ID Subtype : MAC Address
Chassis ID     : 00-E0-BB-00-00-11
Port ID Subtype : Network Address
Port ID        : 172.18.1.1
Create Time    : 10/6/2008 09:00
Remain Time    : 120 Seconds
```

```
Index          : 2
Local Port     : 3
Chassis ID Subtype : MAC Address
Chassis ID     : 00-E0-BB-00-00-12
Port ID Subtype : Network Address
Port ID        : 172.18.1.2
Create Time    : 10/6/2008 09:00
Remain Time    : 120 Seconds
```

```
Total Entries: 2
```

```
DGS-3000-26TC:admin#
```

Chapter 96 Web-based Access Control (WAC) Command List

enable wac
disable wac
config wac authorization attributes {radius [enable disable] local [enable disable]}(1)
config wac ports [<portlist> all] {state [enable disable] aging_time [infinite <min 1-1440>] idle_time [infinite <min 1-1440>] block_time [<sec 0-300>}(1)
config wac method [local radius]
config wac default_redirpath <string 128>
config wac clear_default_redirpath
config wac virtual_ip {<ipaddr> <ipv6addr>}(1)
config wac switch_http_port <tcp_port_number 1-65535> {[http https]}
create wac user <username 15> {[vlan <vlan_name 32> vlanid <vlanid 1-4094>}]
delete wac [user <username 15> all_users]
config wac user <username 15> [vlan <vlan_name 32> vlanid <vlanid 1-4094> clear_vlan]
show wac
show wac ports {<portlist>}
show wac user
show wac auth_state ports {<portlist>}
clear wac auth_state [ports [<portlist> all] {authenticated authenticating blocked} macaddr <macaddr>]
config wac authentication_page element [default page_title <desc 128> login_window_title <desc 64> user_name_title <desc 32> password_title <desc 32> logout_window_title <desc 64> notification_line <value 1-5> <desc 128>]
show wac authenticate_page
config wac trap state [enable disable]

96-1 enable wac

Description

This command is used to enable the WAC function.

Format

enable wac

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To enable the WAC function:

```
DGS-3000-26TC:admin#enable wac
Command: enable wac

Success.

DGS-3000-26TC:admin#
```

96-2 disable wac

Description

This command is used to disable the WAC function.

Format

disable wac

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To disable the WAC function:

```
DGS-3000-26TC:admin#disable wac
Command: disable wac

Success.

DGS-3000-26TC:admin#
```

96-3 config wac authorization attributes

Description

This command is used to configure the acceptance of an authorized configuration. When the authorization is enabled for WAC's RADIUS, the authorized data assigned by the RADIUS server will be accepted if the global authorization network is enabled. When the authorization is enabled for WAC's local, the authorized data assigned by the local database will be accepted.

Format

config wac authorization attributes {radius [enable | disable] | local [enable | disable]}(1)

Parameters

radius - If specified to enable, the authorized data assigned by the RADIUS server will be accepted if the global authorization network is enabled. The default state is enabled.

enable - Specify to enable authorized data assigned by the RADIUS server to be accepted.

disable - Specify to disable authorized data assigned by the RADIUS server from being accepted.

local - If specified to enable, the authorized data assigned by the local database will be accepted if the global

authorization network is enabled. The default state is enabled.

enable - Specify to enable authorized data assigned by the local database to be accepted.

disable - Specify to disable authorized data assigned by the local database from being accepted.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the acceptance of an authorized configuration:

```
DGS-3000-26TC:admin#config wac authorization attributes local disable
Command: config wac authorization attributes local disable

Success.

DGS-3000-26TC:admin#
```

96-4 config wac ports

Description

This command is used to configure the WAC port parameters.

Format

config wac ports [**<portlist>** | **all**] {**state** [**enable** | **disable**] | **aging_time** [**infinite** | **<min 1-1440>**] | **idle_time** [**infinite** | **<min 1-1440>**] | **block_time** [**<sec 0-300>**]}(1)

Parameters

<portlist> - Enter a range of ports to configure.

all - Specify to configure all ports.

state - Specify to enable or disable the WAC state.

enable - Specify to enable the WAC state.

disable - Specify to disable the WAC state.

aging_time - Specify a time period during which an authenticated host will be kept in authenticated state. The default value is 1440 minutes.

infinite - Specify to indicate the authenticated host on the port will not ageout.

<min 1-1440> - Enter an ageout value between 1 and 1440 minutes.

idle_time - Specify a time period after which an authenticated host will be moved to un-authenticated state if there is no traffic during that period. The default value is infinite.

infinite - Specify to indicate the host will not be removed from the authenticated state due to idle of traffic.

<min 1-1440> - Enter an idle time between 1 and 1440 minutes.

block_time - If a host fails to pass the authentication, it will be blocked for this period of time before it can be re-authenticated. The default value is 60 seconds.

<sec 0-300> - Enter a block time between 0 and 300 seconds.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the WAC port state:

```
DGS-3000-26TC:admin#config wac ports 1-8 state enable
Command: config wac ports 1-8 state enable

Success.

DGS-3000-26TC:admin#
```

To configure the WAC port aging time:

```
DGS-3000-26TC:admin#config wac ports 1-5 aging_time 200
Command: config wac ports 1-5 aging_time 200

Success.

DGS-3000-26TC:admin#
```

96-5 config wac method

Description

This command is used to allow specification of the RADIUS protocol used by WAC to complete RADIUS authentication. WAC shares other RADIUS configuration with 802.1X. When using this command to set the RADIUS protocol, users must make sure the RADIUS server added by the config RADIUS command supports the protocol.

Format

config wac method [local | radius]

Parameters

local - Specify the authentication will be done via the local database.

radius - Specify the authentication will be done via the RADIUS server.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the WAC authentication method:

```
DGS-3000-26TC:admin#config wac method radius
Command: config wac method radius

Success.

DGS-3000-26TC:admin#
```

96-6 config wac default_redirpath

Description

This command is used to configure the WAC default redirect path. If default redirect path is configured, the user will be redirected to the default redirect path after successful authentication. When the string is cleared, the client will not be redirected to another URL after successful authentication.

Format

config wac default_redirpath <string 128>

Parameters

<string 128> - Enter the URL that the client will be redirected to after successful authentication. By default, the redirected path is cleared.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the WAC default redirect path:

```
DGS-3000-26TC:admin#config wac default_redirpath http://www.dlink.com
Command: config wac default_redirpath http://www.dlink.com

Success.

DGS-3000-26TC:admin#
```

96-7 config wac clear_default_redirpath

Description

This command is used to clear the WAC default redirect path. When the string is cleared, the client will not be redirected to another URL after successful authentication.

Format

config wac clear_default_redirpath

Parameters

None.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear the WAC default redirect path:

```
DGS-3000-26TC:admin#config wac clear_default_redirpath
Command: config wac clear_default_redirpath

Success.

DGS-3000-26TC:admin#
```

96-8 config wac virtual_ip

Description

This command is used to configure the virtual IP address for WAC. The virtual IP of WAC is used to accept authentication request from unauthenticated host. Only requests sent to this IP will get response correctly.

This IP does not respond to ARP request or ICMP packet!

NOTE: The WAC virtual IP address should be configured before enabling WAC because WAC will not work correctly if the virtual IP address is not set. A warning message "Warning! WAC virtual IPv4 or IPv6 address is not configured." will be prompted even when enabling WAC successfully.

Format

config wac virtual_ip {<ipaddr> | <ipv6addr>}(1)

Parameters

<ipaddr> - Enter the IPv4 address of the virtual IP.

<ipv6addr> - Enter the IPv6 address of the virtual IP

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

Set virtual IP address:

```
DGS-3000-26TC:admin# config wac virtual_ip 1.1.1.1
Command: config wac virtual_ip 1.1.1.1

Success.

DGS-3000-26TC:admin#
```

96-9 config wac switch_http_port

Description

This command is used to configure the TCP port which the WAC switch listens to. The TCP port for HTTP or HTTPS is used to identify the HTTP or HTTPS packets that will be trapped to CPU for authentication processing, or to access the login page. If not specified, the default port number for HTTP is 80, and the default port number for HTTPS is 443. If no protocol is specified, the protocol is HTTP.

Format

config wac switch_http_port <tcp_port_number 1-65535> {[http | https]}

Parameters

<tcp_port_number 1-65535> - Enter a TCP port which the WAC switch listens to and uses to finish the authenticating process.

http - (Optional) Specify that WAC runs HTTP protocol on this TCP port.

https - (Optional) Specify that WAC runs HTTPS protocol on this TCP port.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure a TCP port which the WAC switch listens to:

```
DGS-3000-26TC:admin# config wac switch_http_port 8888 http
Command: config wac switch_http_port 8888 http

Success.

DGS-3000-26TC:admin#
```

96-10 create wac user

Description

This command is used to create accounts for Web-based Access Control. This user account is independent of the login user account. If VLAN is not specified, the user will not get a VLAN assigned after the authentication.

Format

create wac user <username 15> {[vlan <vlan_name 32> | vlanid <vlanid 1-4094>]}

Parameters

<username 15> - Enter the user account for Web-based Access Control.

vlan - (Optional) Specify the authentication VLAN name.

<vlan_name 32> - Enter the authentication VLAN name. The VLAN name can be up to 32 characters long.

vlanid - (Optional) Specify the authentication VLAN ID number.

<vlanid 1-4094> - Enter the authentication VLAN ID number. The VLAN ID must be between 1 and 4094.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To create a WAC account:

```
DGS-3000-26TC:admin# create wac user abc vlanid 123
Command: create wac user abc vlanid 123
Enter a case-sensitive new password:**
  Enter the new password again for confirmation:**
Success.

DGS-3000-26TC:admin#
```

96-11 delete wac

Description

This command is used to delete an account.

Format

delete wac [user <username 15> | all_users]

Parameters

user - Specify the user account for Web-based Access Control.

<username 15> - Enter the user account for Web-based Access Control. The username can be up to 15 characters long.

all_users - Specify this option to delete all current WAC users.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To delete a WAC account:

```
DGS-3000-26TC:admin#delete wac user duhon
Command: delete wac user duhon

Success.

DGS-3000-26TC:admin#
```

96-12 config wac user

Description

This command is used to change the VLAN associated with a user.

Format

config wac user <username 15> [vlan <vlan_name 32> | vlanid <vlanid 1-4094> | clear_vlan]

Parameters

<username 15> - Enter the name of user account which will change its VID.

vlan - Specify the authentication VLAN name.

<vlan_name 32> - Enter the authentication VLAN name. The VLAN name can be up to 32 characters long.

vlanid - Specify the authentication VLAN ID.

<vlanid 1-4094> - Enter the authentication VLAN ID. The VLAN ID must be between 1 and 4094.

clear_vlan - Specify to clear the specified VLAN.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To configure the user's VLAN:

```
DGS-3000-26TC:admin# config wac user abc vlanid 100
Command: config wac user abc vlanid 100

Enter a old password:**
Enter a case-sensitive new password:**
Enter the new password again for confirmation:**
Success.

DGS-3000-26TC:admin#
```

96-13 show wac

Description

This command is used to display the WAC global setting.

Format

show wac

Parameters

None.

Restrictions

None.

Example

To show WAC:

```
DGS-3000-26TC:admin# show wac
Command: show wac

Web-based Access Control
-----
State                : Enabled
Method               : RADIUS
Redirect Path        : http://www.dlink.com
Virtual IP           : 0.0.0.0
Virtual IPv6         : 2000::20
Switch HTTP Port     : 80 (HTTP)
RADIUS Authorization : Enabled
Local Authorization  : Enabled
Trap State           : Enabled

DGS-3000-26TC:admin#
```

96-14 show wac ports

Description

This command is used to display WAC port information.

Format**show wac ports {<portlist>}****Parameters****<portlist>** - (Optional) Enter a range of member ports to display the status.**Restrictions**

None.

Example

To display WAC ports 1 to 3:

```
DGS-3000-26TC:admin# show wac ports 1-3
Command: show wac ports 1-3

Port          State          Aging Time     Idle Time      Block Time
-----          -
              (min)         (min)         (sec)
-----          -
1             Disabled      1440          Infinite       60
2             Disabled      1440          Infinite       60
3             Disabled      1440          Infinite       60

DGS-3000-26TC:admin#
```

96-15 show wac user

Description

This command is used to display WAC user accounts.

Format**show wac user****Parameters**

None.

Restrictions

None.

Example

To show Web authentication user accounts:

```
DGS-3000-26TC:admin# show wac user
```

```
Command: show wac user
```

User Name	Password	VID
123	*****	1000

```
Total Entries : 1
```

```
DGS-3000-26TC:admin#
```

96-16 show wac auth_state ports

Description

This command is used to display the authentication state for ports.

Format

```
show wac auth_state ports {<portlist>}
```

Parameters

<portlist> - (Optional) Enter the list of ports whose WAC authentication state will be displayed.

Restrictions

None.

Example

To display the WAC authentication status of ports:

```
DGS-3000-26TC:admin# show wac auth_state ports
```

```
Command: show wac auth_state ports
```

```
P:Port-based Pri:Priority
```

Port	MAC Address	Original RX VID	State	VID	Pri	Aging Time/ Block Time	Idle Time
31	00-05-5D-F9-16-76	1	Authenticating	-	-	27	-

```
Total Authenticating Hosts : 1
```

```
Total Authenticated Hosts : 0
```

```
Total Blocked Hosts : 0
```

```
DGS-3000-26TC:admin#
```

96-17 clear wac auth_state

Description

This command is used to clear the authentication state of a port. The port will return to un-authenticated state. All the timers associated with the port will be reset.

Format

clear wac auth_state [ports [<portlist> | all] {authenticated | authenticating | blocked} | macaddr <macaddr>]

Parameters

ports - Specify the list of ports whose WAC state will be cleared.

<portlist> - Enter a range of ports.

all - Specify to clear all ports.

authenticated - (Optional) Specify to clear all authenticated users for a port.

authenticating - (Optional) Specify to clear all authenticating users for a port.

blocked - (Optional) Specify to clear all blocked users for a port.

macaddr - Specify to clear a specific user.

<macaddr> - Enter the MAC address here.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To clear the WAC authentication state of ports 1 to 5:

```
DGS-3000-26TC:admin# clear wac auth_state ports 1-5
Command: clear wac auth_state ports 1-5

Success.

DGS-3000-26TC:admin#
```

96-18 config wac authentication_page element

Description

This command is used to customize the authenticate page elements.

Format

config wac authentication_page element [default | page_title <desc 128> | login_window_title <desc 64> | user_name_title <desc 32> | password_title <desc 32> | logout_window_title <desc 64> | notification_line <value 1-5> <desc 128>]

Parameters

default - Specify to reset the page elements to default.

page_title - Specify to configure the title of the authentication page.

<desc 128> - Enter the page title used here. This value can be up to 128 characters long.

login_window_title - Specify to configure the login window title of the authentication page

<desc 64> - Enter the login window title used here. This value can be up to 64 characters long.

user_name_title - Specify to configure the user name title of the authentication page

<desc 32> - Enter the user name title used here. This value can be up to 32 characters long.

password_title - Specify to configure the password title of the authentication page.

<desc 32> - Enter the password title used here. This value can be up to 32 characters long.

logout_window_title - Specify to configure the logout window title of the authentication page.

<desc 64> - Enter the logout window title used here. This value can be up to 64 characters long.

notification_line - Specify to set the notification information by line in authentication Web pages.

<value 1-5> - Enter the notification line number used here. This value must be between 1 and 5.

<desc 128> - Enter the notification line description used here. This value can be up to 128 characters long.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

To customize the authenticate page elements:

```
DGS-3000-26TC:admin# config wac authentication_page element notification_line 1 Copyright @
2016 D-Link All Rights Reserved
Command: config wac authentication_page element notification_line 1 Copyright @ 2016 D-Link
All Rights Reserved

Success.

DGS-3000-26TC:admin#
```

96-19 show wac authenticate_page

Description

This command is used to show the elements of the customized authenticate pages.

Format

show wac authenticate_page

Parameters

None.

Restrictions

None.

Example

The following example displays the authentication page elements:

```
DGS-3000-26TC:admin#show wac authenticate_page
Command: show wac authenticate_page

Page Title           : D-Link
Login Window Title   : Authentication Login
User Name Title      : User Name
Password Title       : Password
Logout Window Title  : Logout From The Network
Notification         :
  Copyright @ 2016 D-Link All Rights Reserved

DGS-3000-26TC:admin#
```

96-20 config wac trap state

Description

This command is used to enable or disable the WAC trap state.

Format

config wac trap state [enable | disable]

Parameters

enable - Specify to enable the WAC trap state.

disable - Specify to disable the WAC trap state.

Restrictions

Only Administrators, Operators and Power-Users can issue this command.

Example

This example show how to enable the WAC trap state.

```
DGS-3000-26TC:admin# config wac trap state enable
Command: config wac trap state enable

Success.

DGS-3000-26TC:admin#
```


Appendix A Password Recovery Procedure

This chapter describes the procedure for resetting passwords on D-Link switches. Authenticating any user who tries to access networks is necessary and important. The basic authentication method used to accept qualified users is through a local login, utilizing a Username and Password. Sometimes, passwords get forgotten or destroyed, so network administrators need to reset these passwords. This chapter explains how the Password Recovery feature can help network administrators reach this goal.

The following steps explain how to use the Password Recovery feature on D-Link devices to easily recover passwords.

Complete these steps to reset the password:

1. For security reasons, the Password Recovery feature requires the user to physically access the device. Therefore this feature is only applicable when there is a direct connection to the console port of the device. It is necessary for the user needs to attach a terminal or PC with terminal emulation to the console port of the Switch.
2. Power on the Switch. After the 'Starting runtime image' message, the Switch will allow 2 seconds for the user to press the hotkey [^] (Shift + 6) to enter the "Password Recovery Mode." Once the Switch enters the "Password Recovery Mode," all ports on the Switch will be disabled.

```

Boot Procedure                                     V2.00.001
-----
Power On Self Test ..... 100 %

MAC Address   : B0-C5-54-30-00-A0
H/W Version  : A2

Please Wait, Loading V2.00.004 Runtime Image ..... 100 %
UART init ..... 100 %
Starting runtime image

```

```

Password Recovery Mode
>

```

3. In the "Password Recovery Mode" only the following commands can be used.

Command	Parameters
reset config {force_agree}	The reset config command resets the whole configuration back to the default values. The option force_agree means to reset the whole configuration without the user's agreement.
reboot	The reboot command exits the Reset Password Recovery Mode and restarts the switch. A confirmation message will be displayed to allow the user to save the current settings.
reset account	The reset account command deletes all the previously created accounts.
reset password {<username>}	The reset password command resets the password of the specified user. If a username is not specified, the passwords of all users will be reset.
show account	The show account command displays all previously created accounts.

Appendix B System Log Entries

The following table lists all possible entries and their corresponding meanings that will appear in the System Log of this Switch.

Category	Event Description	Log Information	Severity
System	System started up	System started up	Critical
	System warm start	System warm start	Critical
	System cold start	System cold start	Critical
	Configuration saved to flash	Configuration saved to flash by console(Username: <username>, IP: <ipaddr>)	Informational
	System log saved to flash	System log saved to flash by console(Username: <username>, IP: <ipaddr>)	Informational
	Configuration and log saved to flash	Configuration and log saved to flash by console(Username: <username>, IP: <ipaddr>)	Informational
	Side Fan failed.	Side Fan failed	Critical
	Side Fan recovered.	Side Fan recovered	Critical
	Back Fan failed.	Back Fan failed	Critical
	Back Fan recovered.	Back Fan recovered	Critical
	Temperature sensor enters alarm state.	Temperature sensor <sensorID> enters alarm state (current temperature: <temperature>)	Warning
	Temperature recovers to normal.	Temperature sensor <sensorID> recovers to normal state (current temperature: <temperature>)	Informational
Up/Download	Firmware upgraded successfully.	Firmware upgraded by <session> successfully (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Firmware upgrade was unsuccessful.	Firmware upgrade by <session> was unsuccessful! (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Firmware successfully uploaded.	Firmware successfully uploaded by <session> (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Firmware upload was unsuccessful.	Firmware upload by <session> was unsuccessful! (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Configuration successfully downloaded.	Configuration successfully downloaded by <session> (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Configuration download was unsuccessful.	Configuration download by <session> was unsuccessful! (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Configuration successfully uploaded.	Configuration successfully uploaded by <session> (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Configuration upload was unsuccessful.	Configuration upload by <session> was unsuccessful! (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Log message successfully uploaded.	Log message successfully uploaded by <session> (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Log message upload was unsuccessful.	Log message upload by <session> was unsuccessful! (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Attack log message successfully uploaded.	Attack log message successfully uploaded by <session> (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Attack log message upload was unsuccessful.	Attack log message upload by <session> was unsuccessful! (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning

Category	Event Description	Log Information	Severity	
Interface	Port link up.	Port <portNum> link up, <link state>	Informational	
	Port link down.	Port <portNum> link down	Informational	
Console	Successful login through Console.	Successful login through Console (Username: <username>)	Informational	
	Login failed through Console.	Login failed through Console (Username: <username>)	Warning	
	Logout through Console.	Logout through Console (Username: <username>)	Informational	
	Console session timed out.	Console session timed out (Username: <username>)	Informational	
	Successful login through Web.	Successful login through Web (Username: <username>, IP: <ipaddr>)	Informational	
Web	Login failed through Web.	Login failed through Web (Username: <username>, IP: <ipaddr>)	Warning	
	Logout through Web.	Logout through Web (Username: <username>, IP: <ipaddr>,)	Informational	
	Web session timed out	Web session timed out (Username: <username>, IP: <ipaddr>,)	Informational	
	Successful login through Web(SSL).	Successful login through Web(SSL) (Username: <username>, IP: <ipaddr>,)	Informational	
	Login failed through Web(SSL).	Login failed through Web(SSL) (Username: <username>, IP: <ipaddr>,)	Warning	
	Logout through Web(SSL).	Logout through Web(SSL) (Username: <username>, IP: <ipaddr>,)	Informational	
	Web(SSL) session timed out.	Web(SSL) session timed out (Username: <username>, IP: <ipaddr>,)	Informational	
	Telnet	Successful login through Telnet.	Successful login through Telnet (Username: <username>, IP: <ipaddr>,)	Informational
		Login failed through Telnet.	Login failed through Telnet (Username: <username>, IP: <ipaddr>,)	Warning
		Logout through Telnet.	Logout through Telnet (Username: <username>, IP: <ipaddr>,)	Informational
Telnet session timed out.		Telnet session timed out (Username: <username>, IP: <ipaddr>,)	Informational	
SNMP	SNMP request received with invalid community string.	SNMP request received from <ipAddress> with invalid community string!	Informational	
STP	Topology changed.	Topology changed (Instance:<InstanceID>, Port:<portNum>,MAC:<macaddr>)	Notice	
	Enable spanning tree protocol.	Spanning Tree Protocol is enabled	Informational	
	Disable spanning tree protocol.	Spanning Tree Protocol is disabled	Informational	
	New root bridge.	CIST New Root bridge selected (MAC: <macaddr> Priority :<value>)	Informational	
	New root bridge.	CIST Region New Root bridge selected (MAC: <macaddr> Priority :<value>)	Informational	
	New root bridge.	MSTI Region New Root bridge selected (Instance:<InstanceID>, MAC: <macaddr> Priority :<value>)	Informational	
	New root bridge.	New Root bridge selected (MAC: <macaddr> Priority :<value>)	Informational	
	New root port.	New root port selected (Instance:<InstanceID>, Port:<portNum>)	Notice	
	Spanning Tree port status changed.	Spanning Tree port status changed (Instance:<InstanceID>, Port:<portNum>) <old_status> -> <new_status>	Notice	
	Spanning Tree port role changed.	Spanning Tree port role changed (Instance:<InstanceID>, Port:<portNum>) <old_role> -> <new_role>	Informational	

Category	Event Description	Log Information	Severity
	Spanning Tree instance created.	Spanning Tree instance created (Instance:<InstanceID>)	Informational
	Spanning Tree instance deleted.	Spanning Tree instance deleted (Instance:<InstanceID>)	Informational
	Spanning Tree Version changed.	Spanning Tree version changed (new version:<new_version>)	Informational
	Spanning Tree MST configuration ID name and revision level changed.	Spanning Tree MST configuration ID name and revision level changed (name:<name> ,revision level <revision_level>)	Informational
	Spanning Tree MST configuration ID VLAN mapping table added.	Spanning Tree MST configuration ID VLAN mapping table changed (instance: <InstanceID> add vlan <startvlanid> [- <endvlanid>])	Informational
	Spanning Tree MST configuration ID VLAN mapping table deleted.	Spanning Tree MST configuration ID VLAN mapping table changed (instance: <InstanceID> delete vlan <startvlanid> [- <endvlanid>])	Informational
DoS	Spoofing attack: 1. The source ip is same as switch's interface ip but the source mac is different. 2. Source ip is the same as the switch's IP in ARP packet. 3. Self IP packet detected.	Possible spoofing attack from (IP: <ipaddr> MAC: <macaddr> Port: <portNum>)	Critical
	The DoS attack is blocked.	<dos_name> is blocked from (IP: <ipaddr> Port: <portNum>)	Critical
SSH	Successful login through SSH.	Successful login through SSH (Username: <username>, IP: <ipaddr>)	Informational
	Login failed through SSH.	Login failed through SSH (Username: <username>, IP: <ipaddr>,)	Warning
	Logout through SSH.	Logout through SSH (Username: <username>, IP: <ipaddr>)	Informational
	SSH session timed out.	SSH session timed out (Username: <username>, IP: <ipaddr>)	Informational
	SSH server is enabled.	SSH server is enabled	Informational
	SSH server is disabled.	SSH server is disabled	Informational
AAA	Authentication Policy is enabled.	Authentication Policy is enabled (Module: AAA)	Informational
	Authentication Policy is disabled.	Authentication Policy is disabled (Module: AAA)	Informational
	Successful login through Console authenticated by AAA local method.	Successful login through Console authenticated by AAA local method (Username: <username>)	Informational
	Login failed through Console authenticated by AAA local method.	Login failed through Console authenticated by AAA local method (Username: <username>)	Warning
	Successful login through Web authenticated by AAA local method.	Successful login through Web from <userIP> authenticated by AAA local method (Username: <username>)	Informational
	Login failed through Web authenticated by AAA local method.	Login failed failed through Web from <userIP> authenticated by AAA local method (Username: <username>)	Warning
	Successful login through Web(SSL) authenticated by AAA local method.	Successful login through Web(SSL) from <userIP> authenticated by AAA local method (Username: <username>)	Informational
	Login failed through Web(SSL) authenticated by AAA local method.	Login failed through Web(SSL) from <userIP> authenticated by AAA local method (Username: <username>)	Warning
	Successful login through Telnet authenticated by AAA local method.	Successful login through Telnet from <userIP> authenticated by AAA local method (Username: <username>,)	Informational
	Login failed through Telnet authenticated by AAA local method.	Login failed through Telnet from <userIP> authenticated by AAA local method (Username: <username>)	Warning
	Successful login through SSH authenticated by AAA local method.	Successful login through SSH from <userIP> authenticated by AAA local method (Username: <username>)	Informational

Category	Event Description	Log Information	Severity
	Login failed through SSH authenticated by AAA local method.	Login failed through SSH from <userIP> authenticated by AAA local method (Username: <username>)	Warning
	Successful login through Console authenticated by AAA none method.	Successful login through Console authenticated by AAA none method (Username: <username>)	Informational
	Successful login through Web authenticated by AAA none method.	Successful login through Web from <userIP> authenticated by AAA none method (Username: <username>)	Informational
	Successful login through Web(SSL) authenticated by AAA none method.	Successful login through Web(SSL) from <userIP> authenticated by AAA none method (Username: <username>)	Informational
	Successful login through Telnet authenticated by AAA none method.	Successful login through Telnet from <userIP> authenticated by AAA none method (Username: <username>)	Informational
	Successful login through SSH authenticated by AAA none method.	Successful login through SSH from <userIP> authenticated by AAA none (Username: <username>)	Informational
	Successful login through Console authenticated by AAA server.	Successful login through Console authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Login failed through Console authenticated by AAA server.	Login failed through Console authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Login failed through Console due to AAA server timeout or improper configuration.	Login failed through Console due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful login through Web authenticated by AAA server.	Successful login through Web from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Login failed through Web authenticated by AAA server.	Login failed through Web from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Login failed through Web due to AAA server timeout or improper configuration.	Login failed through Web from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful login through Web(SSL) authenticated by AAA server.	Successful login through Web(SSL) from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Login failed through Web(SSL) authenticated by AAA server.	Login failed through Web(SSL) from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Login failed through Web(SSL) due to AAA server timeout or improper configuration.	Login failed through Web(SSL) from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful login through Telnet authenticated by AAA server.	Successful login through Telnet from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Login failed through Telnet authenticated by AAA server.	Login failed through Telnet from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Login failed through Telnet due to AAA server timeout or improper configuration.	Login failed through Telnet from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful login through SSH authenticated by AAA server.	Successful login through SSH from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Login failed through SSH authenticated by AAA server.	Login failed through SSH from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Login failed through SSH due to AAA server timeout or improper configuration.	Login failed through SSH from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful Enable Admin through Console authenticated by AAA local_enable method.	Successful Enable Admin through Console authenticated by AAA local_enable method	Informational

Category	Event Description	Log Information	Severity
		(Username: <username>)	
	Enable Admin failed through Console authenticated by AAA local_enable method.	Enable Admin failed through Console authenticated by AAA local_enable method (Username: <username>)	Warning
	Successful Enable Admin through Web authenticated by AAA local_enable method.	Successful Enable Admin through Web from <userIP> authenticated by AAA local_enable method (Username: <username>)	Informational
	Enable Admin failed through Web authenticated by AAA local_enable method.	Enable Admin failed through Web from <userIP> authenticated by AAA local_enable method (Username: <username>)	Warning
	Successful Enable Admin through Web(SSL) authenticated by AAA local_enable method.	Successful Enable Admin through Web(SSL) from <userIP> authenticated by AAA local_enable method (Username: <username>,)	Informational
	Enable Admin failed through Web(SSL) authenticated by AAA local_enable method.	Enable Admin failed through Web(SSL) from <userIP> authenticated by AAA local_enable method (Username: <username>)	Warning
	Successful Enable Admin through Telnet authenticated by AAA local_enable method.	Successful Enable Admin through Telnet from <userIP> authenticated by AAA local_enable method (Username: <username>)	Informational
	Enable Admin failed through Telnet authenticated by AAA local_enable method.	Enable Admin failed through Telnet from <userIP> authenticated by AAA local_enable method (Username: <username>)	Warning
	Successful Enable Admin through SSH authenticated by AAA local_enable method.	Successful Enable Admin through SSH from <userIP> authenticated by AAA local (Username: <username>)	Informational
	Enable Admin failed through SSH authenticated by AAA local_enable method.	Enable Admin failed through <Telnet or Web or SSH> from <userIP> authenticated by AAA local_enable method (Username: <username>)	Warning
	Successful Enable Admin through Console authenticated by AAA none method.	Successful Enable Admin through Console authenticated by AAA none method (Username: <username>)	Informational
	Successful Enable Admin through Web authenticated by AAA none method.	Successful Enable Admin through Web from <userIP> authenticated by AAA none method (Username: <username>)	Informational
	Successful Enable Admin through Web(SSL) authenticated by AAA none method.	Successful Enable Admin through Web(SSL) from <userIP> authenticated by AAA none method (Username: <username>)	Informational
	Successful Enable Admin through Telnet authenticated by AAA none method.	Successful Enable Admin through Telnet from <userIP> authenticated by AAA none method (Username: <username>)	Informational
	Successful Enable Admin through SSH authenticated by AAA none method.	Successful Enable Admin through SSH from <userIP> authenticated by AAA none (Username: <username>)	Informational
	Successful Enable Admin through Console authenticated by AAA server.	Successful Enable Admin through Console authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Enable Admin failed through Console authenticated by AAA server.	Enable Admin failed through Console authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Enable Admin failed through Console due to AAA server timeout or improper configuration.	Enable Admin failed through Console due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful Enable Admin through Web authenticated by AAA server.	Successful Enable Admin through Web from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Enable Admin failed through Web authenticated by AAA server.	Enable Admin failed through Web from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Enable Admin failed through Web due to AAA server timeout or improper configuration.	Enable Admin failed through Web from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful Enable Admin through Web(SSL) authenticated by AAA server.	Successful Enable Admin through Web(SSL) from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational

Category	Event Description	Log Information	Severity
	Enable Admin failed through Web(SSL) authenticated by AAA server.	Enable Admin failed through Web(SSL) from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Enable Admin failed through Web(SSL) due to AAA server timeout or improper configuration.	Enable Admin failed through Web(SSL) from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful Enable Admin through Telnet authenticated by AAA server.	Successful Enable Admin through Telnet from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Enable Admin failed through Telnet authenticated by AAA server.	Enable Admin failed through Telnet from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Enable Admin failed through Telnet due to AAA server timeout or improper configuration.	Enable Admin failed through Telnet from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	Successful Enable Admin through SSH authenticated by AAA server.	Successful Enable Admin through SSH from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Informational
	Enable Admin failed through SSH authenticated by AAA server.	Enable Admin failed through SSH from <userIP> authenticated by AAA server <serverIP> (Username: <username>)	Warning
	Enable Admin failed through SSH due to AAA server timeout or improper configuration.	Enable Admin failed through SSH from <userIP> due to AAA server timeout or improper configuration (Username: <username>)	Warning
	AAA server timed out.	AAA server <serverIP> (Protocol: <protocol>) connection failed	Warning
	AAA server ACK error.	AAA server <serverIP> (Protocol: <protocol>) response is wrong	Warning
	AAA does not support this functionality.	AAA doesn't support this functionality	Informational
Port security	port security is exceeded to its maximum learning size and will not learn any new address.	Port security violation (MAC address:<macaddr> on port:<portNum>)	Warning
IMPB	Unauthenticated IP address encountered and discarded by ip IP-MAC port binding.	Unauthenticated IP-MAC address and discarded by IMPB (IP: <ipaddr>, MAC: <macaddr>, Port <portNum>)	Warning
	Dynamic IMPB entry is conflict with static ARP.	Dynamic IMPB entry conflicts with static ARP(IP: <ipaddr>, MAC: <macaddr>, Port <portNum>)	Warning
	Dynamic IMPB entry is conflict with static FDB.	Dynamic IMPB entry conflicts with static FDB(IP: <ipaddr>, MAC: <macaddr>, Port <portNum>)	Warning
	Dynamic IMPB entry conflicts with static IMPB.	Dynamic IMPB entry conflicts with static IMPB(IP: <ipaddr>, MAC: <macaddr>, Port <portNum>)	Warning
	Creating IMPB entry failed due to no ACL rule available.	Creating IMPB entry failed due to no ACL rule being available(IP:<ipaddr>, MAC: <macaddr>, Port <portNum>)	Warning
IP and Password Changed	IP Address change activity.	Management IP address was changed by (Username: <username>,IP:<ipaddr>)	Informational
	Password change activity.	Password was changed by (Username: <username>,IP:<ipaddr>)	Informational
Safeguard Engine	Safeguard Engine is in normal mode.	Safeguard Engine enters NORMAL mode	Informational
	Safeguard Engine is in filtering packet mode.	Safeguard Engine enters EXHAUSTED mode	Warning
Packet Storm	Broadcast storm occurrence.	Port <portNum> Broadcast storm is occurring	Warning
	Broadcast storm cleared.	Port <portNum> Broadcast storm has cleared	Informational
	Multicast storm occurrence.	Port <portNum> Multicast storm is occurring	Warning
	Multicast storm cleared.	Port <portNum> Multicast storm has cleared	Informational
	Port shut down due to a packet storm.	Port <portNum> is currently shut down due to a packet storm	Warning
Loop Back Detection	Port loop occurred.	Port <portNum> LBD loop occurred. Port blocked.	Critical
	Port loop detection restarted after interval time.	Port <portNum> LBD port recovered. Loop detection restarted.	Informational

Category	Event Description	Log Information	Severity
	Port with VID loop occurred.	Port <portNum> VID <vlanID> LBD loop occurred. Packet discard begun.	Critical
	Port with VID Loop detection restarted after interval time.	Port <portNum> VID <vlanID> LBD recovered. Loop detection restarted.	Informational
802.1X	VID assigned from RADIUS server after RADIUS client authenticated by RADIUS server successfully. This VID will assign to the port and this port will be the vian untag port member.	Radius server <ipaddr> assigned vid :<vlanID> to port <portNum> (account :<username>)	Informational
	Ingress bandwidth assigned from RADIUS server after RADIUS client authenticated by RADIUS server successfully. This Ingress bandwidth will assign to the port.	Radius server <ipaddr> assigned ingress bandwidth:<ingressBandwidth> to port <portNum> (account : <username>)	Informational
	Egress bandwidth assigned from RADIUS server after RADIUS client authenticated by RADIUS server successfully. This egress bandwidth will assign to the port.	Radius server <ipaddr> assigned egress bandwidth:<egressBandwidth> to port <portNum> (account: <username>)	Informational
	802.1p default priority assigned from RADIUS server after RADIUS client authenticated by RADIUS server successfully. This 802.1p default priority will assign to the port.	Radius server <ipaddr> assigned 802.1p default priority:<priority> to port <portNum> (account : <username>)	Informational
	802.1x Authentication failure.	802.1x Authentication failure [for <reason>] from (Username: <username>, Port: <portNum>, MAC: <macaddr>)	Warning
	802.1x Authentication success.	802.1x Authentication success from (Username: <username>, Port: <portNum>, MAC: <macaddr>)	Informational
CFM	Cross-connect is detected.	CFM cross-connect. VLAN:<vlanid>, Local(MD Level:<mdlevel>, Port <portNum>, Direction:<mepdirection>) Remote(MEPID:<mepid>, MAC:<macaddr>)	Critical
	Error CFM CCM packet is detected.	CFM error ccm. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>) Remote(MEPID:<mepid>, MAC:<macaddr>)	Warning
	Can not receive remote MEP's CCM packet.	CFM remote down. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>)	Warning
	Remote MEP's MAC reports an error status.	CFM remote MAC error. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>)	Warning
	Remote MEP detects CFM defects.	CFM remote detects a defect. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>)	Informational
ARP	Gratuitous ARP detected duplicate IP.	Conflict IP was detected with this device ! (IP: <ipaddr>, MAC: <macaddr>, Port <portNum>, Interface: <ipif_name>).	Warning
DHCP	Detect untrusted DHCP server IP address.	Detected untrusted DHCP server(IP: <ipaddr>, Port: <portNum>)	Informational
Command Logging	Command Logging.	<username>: execute command "<string>"	Informational
MBAC	A host passes the authentication.	MAC-based Access Control host login successful (MAC: <macaddr>, port: <portNum>, VID: <vid>)	Informational
	A host fails to pass the authentication.	MAC-based Access Control unauthenticated host(MAC: <macaddr>, Port <portNum>, VID: <vid>)	Critical
	A host is aged out.	MAC-based Access Control host aged out (MAC: <macaddr>, port: <portNum>, VID: <vid>)	Informational
	The authorized user number on a port reaches the maximum user limit.	Port <portNum> enters MAC-based Access Control stop learning state.	Warning
	The authorized user number on a port is below the maximum user limit in a time interval (interval is project depended).	Port <portNum> recovers from MAC-based Access Control stop learning state.	Warning
	The authorized user number on whole device reaches the maximum user limit.	MAC-based Access Control enters stop learning state.	Warning

Category	Event Description	Log Information	Severity
	The authorized user number on whole device is below the maximum user limit in a time interval (interval is project depended).	MAC-based Access Control recovers from stop learning state.	Warning
BPDU Protection	BPDU attack happened.	Port <port> enter BPDU under protection state (mode: drop)	Informational
	BPDU attack happened.	Port <port> enter BPDU under protection state (mode: block)	Informational
	BPDU attack happened.	Port <port> enter BPDU under protection state (mode: shutdown)	Informational
	BPDU attack automatically recover.	Port <port> recover from BPDU under protection state automatically	Informational
	BPDU attack manually recover.	Port <port> recover from BPDU under protection state manually	Informational
	System re-start reason: system fatal error.	System re-start reason: system fatal error	Emergent
	System re-start reason: CPU exception.	System re-start reason: CPU exception	Emergent
JWAC	When a client host authenticated successful.	JWAC authenticated user (Username: <string>, IP: <ipaddr ipv6addr>, MAC: <macaddr>, Port: <portNum>)	Informational
	When a client host fail to authenticate.	JWAC unauthenticated user (Username: <string>, IP: <ipaddr ipv6addr>, MAC: <macaddr>, Port: <portNum>)	Warning
	This log will be triggered when the authorized user number reaches the max user limit on whole device.	JWAC enters stop learning state.	Warning
	This log will be triggered when the authorized user number is below the max user limit on whole device in a time interval (interval is project depended).	JWAC recovered from stop learning state.	Warning
WAC	When a client host authenticated successful.	WAC authenticated user (Username: <string>, IP: <ipaddr ipv6address>, MAC: <macaddr>, Port: <portNum>)	Informational
	When a client host fail to authenticate.	WAC unauthenticated user (User Name: <string>, IP: <ipaddr ipv6address>, MAC: <macaddr>, Port: <portNum>)	Warning
	This log will be triggered when the number of authorized users reaches the maximum user limit on the whole device.	WAC enters stop learning state.	Warning
	This log will be triggered when the number of authorized users is below the maximum user limit on whole device in a time interval (The interval is project dependent).	WAC recovered from stop learning state.	Warning
DHCPv6 Server	The address of the DHCPv6 Server pool is used up.	The address of the DHCPv6 Server pool <pool-name> is used up.	Informational
	The number of allocated ipv6 addresses of the DHCPv6 Server pool is equal to MAX-NUM.	The number of allocated ipv6 addresses of the DHCPv6 Server pool is equal to MAX-NUM.	Informational
DHCPv6 Server Screening	Detected untrusted DHCPv6 server IP address.	Detected untrusted DHCPv6 server (IP: <ipv6addr>, Port:<portNum>)	Informational
	Detected untrusted source IP in ICMPv6 Router Advertisement Message.	Detected untrusted source IP of ICMPv6 Router Advertisement message (IP: <ipv6addr>, Port:<portNum>)	Informational
Y.1731	AIS condition detected.	AIS condition detected. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>, MEPID:<mepid>)	Notice
	AIS condition cleared.	AIS condition cleared. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>, MEPID:<mepid>)	Notice
	LCK condition detected.	LCK condition detected. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>, MEPID:<mepid>)	Notice
	LCK condition cleared.	LCK condition cleared. MD Level:<mdlevel>, VLAN:<vlanid>, Local(Port <portNum>, Direction:<mepdirection>, MEPID:<mepid>)	Notice

Category	Event Description	Log Information	Severity
DHCPv6 Relay	DHCPv6 relay on a specific interface's administrator state changed.	DHCPv6 relay on interface <intf-name> changed state to <enabled disabled>	Informational
RCP	Firmware upgraded successfully.	Firmware upgraded by <session> successfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Firmware upgrade unsuccessfully.	Firmware upgrade by <session> unsuccessfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Firmware uploaded successfully.	Firmware uploaded by <session> successfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Firmware upload unsuccessfully.	Firmware upload by <session> unsuccessfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Configuration downloaded successfully.	Configuration downloaded by <session> successfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Configuration download unsuccessfully.	Configuration download by <session> unsuccessfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Configuration uploaded successfully.	Configuration uploaded by <session> successfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Configuration upload unsuccessfully.	Configuration upload by <session> unsuccessfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Log message uploaded successfully.	Log message uploaded by <session> successfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Log message upload unsuccessfully.	Log message upload by <session> unsuccessfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	The downloaded configurations executed successfully.	The downloaded configurations executed by <session> successfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	The downloaded configurations execute unsuccessfully.	The downloaded configurations executed by <session> unsuccessfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
	Attack log message uploaded successfully.	Attack log message uploaded by <session> successfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Informational
	Attack log message upload unsuccessfully.	Attack log message upload by <session> unsuccessfully. (Username: <username>, IP: <ipaddr>, MAC: <macaddr>)	Warning
DHCPv6 Client	DHCPv6 client interface administrator state changed.	DHCPv6 client on interface <intf-name> changed state to <enabled disabled>	Informational
	DHCPv6 client obtains an ipv6 address from a DHCPv6 server.	DHCPv6 client obtains an ipv6 address < ipv6address > on interface <intf-name>	Informational
	The IPv6 address obtained from a DHCPv6 server starts renewing.	The IPv6 address < ipv6address > on interface <intf-name> starts renewing.	Informational
	The IPv6 address obtained from a DHCPv6 server renews success.	The IPv6 address < ipv6address > on interface <intf-name> renews success.	Informational
	The IPv6 address obtained from a DHCPv6 server starts rebinding.	The IPv6 address < ipv6address > on interface <intf-name> starts rebinding.	Informational
	The IPv6 address obtained from a DHCPv6 server rebinds success.	The IPv6 address < ipv6address > on interface <intf-name> rebinds success.	Informational
	The IPv6 address from a DHCPv6 server was deleted.	The IPv6 address < ipv6address > on interface <intf-name> was deleted.	Informational
DDM	DDM exceeded DDM alarm threshold	Port <portNum> optic module [thresholdType] exceeded the [thresholdSubType] alarm threshold	Critical
	DDM exceeded DDM warning threshold	Port <portNum> optic module [thresholdType] exceeded the [thresholdSubType] warning	Critical

Category	Event Description	Log Information	Severity
		threshold.	
	DDM recovered to normal	Port <portNum> optic module [thresholdType] back to normal	Warning

Appendix C Trap Log Entries

This table lists the trap logs found on the Switch.

Trap Name	Trap Description	OID
risingAlarm	The SNMP trap that is generated when an alarm entry crosses its falling threshold and generates an event that is configured for sending SNMP traps. Binding: 1.alarmIndex 2.alarmVariable 3.alarmSampleType 4.alarmValue 5.alarmFallingThreshold	1.3.6.1.2.1.16.0.1
fallingAlarm	The SNMP trap that is generated when an alarm entry crosses its falling threshold and generates an event that is configured for sending SNMP traps. Binding: 1. alarmIndex 2. alarmVariable 3. alarmSampleType 4. alarmValue 5. alarmFallingThreshold	1.3.6.1.2.1.16.0.2
LldpRemTablesChange	A lldpRemTablesChange notification is sent when the value of lldpStatsRemTableLastChangeTime changes. It can be utilized by an NMS to trigger LLDP remote systems table maintenance polls. Note that transmission of lldpRemTablesChange notifications are throttled by the agent, as specified by the 'lldpNotificationInterval' object. Binding: 1.lldpStatsRemTablesInserts 2.lldpStatsRemTablesDeletes 3.lldpStatsRemTablesDrops 4.lldpStatsRemTablesAgeouts	1.0.8802.1.1.2.0.0.1
coldStart	A coldStart trap signifies that the SNMPv2 entity, acting in an agent role, is reinitializing itself and that its configuration may have been altered.	1.3.6.1.6.3.1.1.5.1
warmStart	A warmStart trap signifies that the SNMPv2 entity, acting in an agent role, is reinitializing itself such that its configuration is unaltered.	1.3.6.1.6.3.1.1.5.2
authenticationFailure	An authenticationFailure trap signifies that the SNMPv2 entity, acting in an agent role, has received a protocol message that is not properly authenticated.	1.3.6.1.6.3.1.1.5.5
linkDown	A linkDown trap signifies that the SNMP entity, acting in an agent role, has detected that the ifOperStatus object for one of its communication links is about to enter the down state from some other state (but not from the notPresent state). This other state is indicated by the included value of ifOperStatus. 1.ifIndex 2.ifAdminStatus 3.ifOperStatus	1.3.6.1.6.3.1.1.5.3
linkUp	A linkUp trap signifies that the SNMP entity, acting in an agent role, has detected that the ifOperStatus object for one of its communication links left the down state and transitioned into some other state (but not into the notPresent state). This other state is indicated by the included value of ifOperStatus. Binding: 1.ifIndex 2.ifAdminStatus 3.ifOperStatus	1.3.6.1.6.3.1.1.5.4
newRoot	The newRoot trap indicates that the sending agent has become the new root of the Spanning Tree; the trap is sent by a bridge soon after its election as the new root, e.g., upon expiration of the Topology Change Timer, immediately subsequent to its election. Implementation of this trap is optional.	1.3.6.1.2.1.17.0.1
topologyChange	A topologyChange trap is sent by a bridge when any of its configured ports transitions from the Learning state to the Forwarding state, or from the Forwarding state to the Blocking state. The trap is not sent if a newRoot trap is sent for the same transition. Implementation of this trap is optional.	1.3.6.1.2.1.17.0.2
dot1agCfmFaultAlarm	A MEP has a persistent defect condition. A notification (fault alarm) is sent to the management entity with the OID of the MEP that has detected the fault. Whenever a MEP has a persistent defect, it may or may not generate a Fault	1.3.111.2.802.1.1.8.0.1

Trap Name	Trap Description	OID
	Alarm to warn the system administrator of the problem, as controlled by the MEP Fault Notification Generator State Machine and associated Managed Objects. Only the highest-priority defect, as shown in Table 20-1, is reported in the Fault Alarm. If a defect with a higher priority is raised after a Fault Alarm has been issued, another Fault Alarm is issued. The management entity receiving the notification can identify the system from the network source address of the notification, and can identify the MEP reporting the defect by the indices in the OID of the dot1agCfmMepHighestPrDefect variable in the notification: dot1agCfmMdIndex - Also the index of the MEP's Maintenance Domain table entry (dot1agCfmMdTable). dot1agCfmMalIndex - Also an index (with the MD table index) of the MEP's Maintenance Association network table entry (dot1agCfmMaNetTable), and (with the MD table index and component ID) of the MEP's MA component table entry (dot1agCfmMaCompTable). dot1agCfmMepIdentifier - MEP Identifier and final index into the MEP table (dot1agCfmMepTable). Binding: 1.dot1agCfmMepHighestPrDefect	
dot3OamThresholdEvent	A dot3OamThresholdEvent notification is sent when a local or remote threshold crossing event is detected. A local threshold crossing event is detected by the local entity, while a remote threshold crossing event is detected by the reception of an Ethernet OAM Event Notification OAMPDU that indicates a threshold event. This notification should not be sent more than once per second. The OAM entity can be derived from extracting the ifIndex from the variable bindings. The objects in the notification correspond to the values in a row instance in the dot3OamEventLogTable. The management entity should periodically check dot3OamEventLogTable to detect any missed events. Binding: 1.dot3OamEventLogTimestamp 2.dot3OamEventLogOui 3.dot3OamEventLogType 4.dot3OamEventLogLocation 5.dot3OamEventLogWindowHi 6.dot3OamEventLogWindowLo 7.dot3OamEventLogThresholdHi 8.dot3OamEventLogThresholdLo 9.dot3OamEventLogValue 10.dot3OamEventLogRunningTotal 11.dot3OamEventLogEventTotal	1.3.6.1.2.1.158.0.1
swPktStormOccurred	This trap is sent when a packet storm is detected by a packet storm mechanism and a shutdown action is taken. Binding: 1: swPktStormCtrlPortIndex	1.3.6.1.4.1.171.12.25.5.0.1
swPktStormCleared	The trap is sent when the packet storm is cleared by the packet storm mechanism. Binding: 1: swPktStormCtrlPortIndex	1.3.6.1.4.1.171.12.25.5.0.2
swPktStormDisablePort	The trap is sent when the port is disabled by the packet storm mechanism. Binding: 1: swPktStormCtrlPortIndex	1.3.6.1.4.1.171.12.25.5.0.3
swSafeGuardChgToExhausted	This trap indicates System change operation mode from normal to exhausted. Binding: 1: swSafeGuardCurrentStatus	1.3.6.1.4.1.171.12.19.4.1.0.1
swSafeGuardChgToNormal	This trap indicates System change operation mode from exhausted to normal. Binding: 1: swSafeGuardCurrentStatus	1.3.6.1.4.1.171.12.19.4.1.0.2
swDoSAttackDetected	This trap is sent when the specific DoS packet is received and trap is enabled. Binding: 1: swDoSCtrlType 2: swDoSNotifyVarIpAddr 3: swDoSNotifyVarPortNumber	1.3.6.1.4.1.171.12.59.4.0.1
swIpMacBindingViolationTrap	When the IP-MAC Binding trap is enabled, if there's a new MAC that violates the pre-defined port security configuration, a trap will be sent out. Binding: 1: swIpMacBindingPortIndex 2: swIpMacBindingViolationIP 3: swIpMacBindingViolationMac	1.3.6.1.4.1.171.12.23.5.0.1
swIpMacBindingStopLearningTrap	When the IP-MAC Binding trap is enabled, if the specific port changes from a normal state to a stop_learning state, a trap will be sent out.	1.3.6.1.4.1.171.12.23.5.0.2

Trap Name	Trap Description	OID
	Binding: 1: swIpMacBindingPortIndex	
swIpMacBindingRecoverLearningTrap	When the IP-MAC Binding trap is enabled, if the specific port changes from a stop_learning state to a normal state, a trap will be sent out. Binding: 1: swIpMacBindingPortIndex	1.3.6.1.4.1.171.12.23.5.0.3
swMacBasedAccessControlLoggedSuccess	The trap is sent when a MAC-based access control host is successfully logged in. Binding: 1.swMacBasedAuthInfoMacIndex 2.swMacBasedAuthInfoPortIndex 3.swMacBasedAuthVID	1.3.6.1.4.1.171.12.35.11.1.0.1
swMacBasedAccessControlLoggedFail	The trap is sent when a MAC-based access control host login fails. Binding: 1.swMacBasedAuthInfoMacIndex 2.swMacBasedAuthInfoPortIndex 3.swMacBasedAuthVID	1.3.6.1.4.1.171.12.35.11.1.0.2
swMacBasedAccessControlAgesOut	The trap is sent when a MAC-based access control host ages out. Binding: 1.swMacBasedAuthInfoMacIndex 2.swMacBasedAuthInfoPortIndex 3.swMacBasedAuthVID	1.3.6.1.4.1.171.12.35.11.1.0.3
swWACLoggedSuccess	The trap is sent when a WAC client has successfully logged in. Binding: 1: swWACAuthStatePort 2: swWACAuthStateOriginalVid 3: swWACAuthStateMACAddr 4: swWACAuthUserName 5: swWACClientAddrType 6: swWACClientAddress	1.3.6.1.4.1.171.12.27.11.1.0.1
swWACLoggedFail	The trap is sent when a WAC client fails to login. Binding: 1: swWACAuthStatePort 2: swWACAuthStateOriginalVid 3: swWACAuthStateMACAddr 4: swWACAuthUserName 5: swWACClientAddrType 6: swWACClientAddress	1.3.6.1.4.1.171.12.27.11.1.0.2
swERPSSFDetectedTrap	When the signal fail occurs, a trap will be generated. Binding: 1.swERPSSNodeID	1.3.6.1.4.1.171.12.78.4.0.1
swERPSSFClearedTrap	When the signal fail clears, a trap will be generated. Binding: 1.swERPSSNodeID	1.3.6.1.4.1.171.12.78.4.0.2
swERPSPLOwnerConflictTrap	When a conflict occurs, a trap will be generated. Binding: 1.swERPSSNodeID	1.3.6.1.4.1.171.12.78.4.0.3
swBpduProtectionUnderAttackingTrap	When the BPDU Protection trap is enabled, if the specific port changes from a normal state to an under attack state, a trap will be sent out. Binding: 1.swBpduProtectionPortIndex 2.swBpduProtectionPortMode	1.3.6.1.4.1.171.12.76.4.0.1
swBpduProtectionRecoveryTrap	When the BPDU Protection trap is enabled, if the specific port changes from an under attack state to a normal state, a trap will be sent out. Binding: 1.swBpduProtectionPortIndex 2.swBpduProtectionRecoveryMethod	1.3.6.1.4.1.171.12.76.4.0.2
swL2PortSecurityViolationTrap	When the port_security trap is enabled, if there's a new MAC that violates the pre-defined port security configuration, a trap will be sent out. Binding: 1: swL2PortSecurityPortIndex	1.3.6.1.4.1.171.11.133.1.1.2.100.1.2.0.2 1.3.6.1.4.1.171.11.133.2.1.2.100.1.2.0.2

Trap Name	Trap Description	OID
	2: swL2PortSecurityViolationMac	
swL2macNotification	This trap indicates the MAC address variations in the address table. Binding: 1: swL2macNotifyInfo	1.3.6.1.4.1.171.11.133.1.1.2.100.1.2.0.1 1.3.6.1.4.1.171.11.133.2.1.2.100.1.2.0.1
swPortLoopOccurred	The trap is sent when a Port loop occurs. Binding: 1.swLoopDetectPortIndex	1.3.6.1.4.1.171.12.41.10.0.1
swPortLoopRestart	The trap is sent when a Port loop restarts after the interval time. Binding: 1.swLoopDetectPortIndex	1.3.6.1.4.1.171.12.41.10.0.2
swVlanLoopOccurred	The trap is sent when a Port with a VID loop occurs. Binding: 1.swLoopDetectPortIndex 2.swVlanLoopDetectVID	1.3.6.1.4.1.171.12.41.10.0.3
swVlanLoopRestart	The trap is sent when a Port with a VID loop restarts after the interval time. Binding: 1.swLoopDetectPortIndex 2.swVlanLoopDetectVID	1.3.6.1.4.1.171.12.41.10.0.4
swFilterDetectedTrap	Send trap when illegal DHCP server is detected. The same illegal DHCP server IP address detected is just sent once to the trap receivers within the log ceasing unauthorized duration. Binding: 1.swFilterDetectedIP 2.swFilterDetectedport	1.3.6.1.4.1.171.12.37.100.0.1
swSingleIPMSColdStart	Commander switch will send swSingleIPMSColdStart notification to indicated host when its Member generate cold start notification. Binding: 1: swSingleIPMSID 2: swSingleIPMSMacAddr	1.3.6.1.4.1.171.12.8.6.0.11
swSingleIPMSWarmStart	Commander switch will send swSingleIPMSWarmStart notification to indicated host when its Member generate warm start notification. Binding: 1: swSingleIPMSID 2: swSingleIPMSMacAddr	1.3.6.1.4.1.171.12.8.6.0.12
swSingleIPMSLinkDown	Commander switch will send swSingleIPMSLinkDown notification to indicated host when its Member generate link down notification. Binding: 1: swSingleIPMSID 2: swSingleIPMSMacAddr 3: ifIndex	1.3.6.1.4.1.171.12.8.6.0.13
swSingleIPMSLinkUp	If Commander switch will send swSingleIPMSLinkUp notification to indicated host when its Member generate link up notification. Binding: 1: swSingleIPMSID 2: swSingleIPMSMacAddr 3: ifIndex	1.3.6.1.4.1.171.12.8.6.0.14
swSingleIPMSAuthFail	Commander switch will send swSingleIPMSAuthFail notification to indicated host when it Member generate authentication failure notification. Binding: 1: swSingleIPMSID 2: swSingleIPMSMacAddr	1.3.6.1.4.1.171.12.8.6.0.15
swSingleIPMSNewRoot	Commander switch will send swSingleIPMSNewRoot notification to indicated host when it Member generate new root notification. Binding: 1: swSingleIPMSID 2: swSingleIPMSMacAddr	1.3.6.1.4.1.171.12.8.6.0.16
swSingleIPMSTopologyChange	Commander switch will send swSingleIPMSTopologyChange notification to indicated host when it Member generate topology change notification. Binding: 1: swSingleIPMSID 2: swSingleIPMSMacAddr	1.3.6.1.4.1.171.12.8.6.0.17
swDdmAlarmTrap	The trap is sent when any parameter value exceeds the alarm threshold value or recover to normal status depending on the configuration of the trap action. Binding:	1.3.6.1.4.1.171.12.72.4.0.1

Trap Name	Trap Description	OID
	1: swDdmPort 2: swDdmThresholdType 3: swDdmThresholdExceedType 4: swDdmThresholdExceedOrRecover	
swDdmWarningTrap	The trap is sent when any parameter value exceeds the warning threshold value or recover to normal status depending on the configuration of the trap action. Binding: 1: swDdmPort 2: swDdmThresholdType 3: swDdmThresholdExceedType 4: swDdmThresholdExceedOrRecover	1.3.6.1.4.1.171.12.72.4.0.2
agentGratuitousARPTrap	This trap is sent when there is an IP address conflict. Binding: 1: agentGratuitousARPIpAddr 2: agentGratuitousARPMacAddr 3: agentGratuitousARPPortNumber 4: agentGratuitousARPInterfaceName	1.3.6.1.4.1.171.12.1.7.2.0.5
agentCfgOperCompleteTrap	The trap is sent when the configuration is completely saved, uploaded or downloaded. Binding: 1: unitID 2: agentCfgOperate 3: agentLoginUserName	1.3.6.1.4.1.171.12.1.7.2.0.9
agentFirmwareUpgrade	This trap is sent when the process of upgrading the firmware via SNMP has finished. Binding: 1: swMultiImageVersion	1.3.6.1.4.1.171.12.1.7.2.0.7
swPowerStatusChg	Power Status change notification. The notification is issued when the swPowerStatus changes in the following cases: lowVoltage -> overCurrent. lowVoltage -> working. lowVoltage -> disconnect. lowVoltage -> connect. overCurrent -> lowVoltage. overCurrent -> working. overCurrent -> disconnect. overCurrent -> connect. working -> lowVoltage. working -> overCurrent. working -> connect. working -> disconnect. fail -> connect. fail -> disconnect. connect -> lowVoltage. connect -> overCurrent. connect -> working. connect -> disconnect. disconnect -> lowVoltage. disconnect -> overCurrent. disconnect -> working. disconnect -> connect. Binding: 1: swPowerUnitIndex 2: swPowerID 3: swPowerStatus	1.3.6.1.4.1.171.12.11.2.2.2.0 .1
swPowerFailure	Power Failure notification. The notification is issued when the swPowerStatus changes in the following cases: lowVoltage -> fail. overcurrent -> fail. working -> fail. connect -> fail. disconnect -> fail. Binding: 1: swPowerUnitIndex 2: swPowerID 3: swPowerStatus	1.3.6.1.4.1.171.12.11.2.2.2.0 .2
swPowerRecover	Power Recover notification. The notification is issued when the swPowerStatus changes in the following cases: Binding: 1: swPowerUnitIndex 2: swPowerID	1.3.6.1.4.1.171.12.11.2.2.2.0 .3

Trap Name	Trap Description	OID
	3: swPowerStatus	
swFanFailure	Fan Failure notification. Binding: 1: swFanUnitIndex 2: swFanID	1.3.6.1.4.1.171.12.11.2.2.3.0 .1
swFanRecover	Fan Recover notification. Binding: 1: swFanUnitIndex 2: swFanID	1.3.6.1.4.1.171.12.11.2.2.3.0 .2
swHighTemperature	High Temperature notification Binding: 1: swTemperatureUnitIndex 2: swTemperSensorID 3: swTemperatureCurrent	1.3.6.1.4.1.171.12.11.2.2.4.0 .1
swHighTemperatureRecover	High Temperature notification Binding: 1: swTemperatureUnitIndex 2: swTemperSensorID 3: swTemperatureCurrent	1.3.6.1.4.1.171.12.11.2.2.4.0 .2
swLowTemperature	Low Temperature notification Binding: 1: swTemperatureUnitIndex 2: swTemperSensorID 3: swTemperatureCurrent	1.3.6.1.4.1.171.12.11.2.2.4.0 .3
swLowTemperatureRecover	Low Temperature notification Binding: 1: swTemperatureUnitIndex 2: swTemperSensorID 3: swTemperatureCurrent	1.3.6.1.4.1.171.12.11.2.2.4.0 .4
swFilterDHCPv6ServerDetectedTrap	Send trap when an illegal DHCPv6 server is detected. Binding: 1: swFilterDetectedIPv6 2: swFilterDetectedport	1.3.6.1.4.1.171.12.37.100.0. 2
swFilterICMPv6RaAllNodeDetectedTrap	Send trap when an illegal ICMPv6 All-nodes RA is detected. Binding: 1: swFilterDetectedIPv6 2: swFilterDetectedport	1.3.6.1.4.1.171.12.37.100.0. 3
swDot1xLoggedSuccess	The trap is sent when a dot1x Supplicant has successfully logged in. Binding: 1: swDot1xAuthPortNumber 2: swDot1xAuthVID 3: swDot1xAuthMACAddress 4: swDot1XAuthUserName	1.3.6.1.4.1.171.12.30.11.1.0. 1
swDot1xLoggedFail	The trap is sent when a dot1x Supplicant fails to login. Binding: 1: swDot1xAuthPortNumber 2: swDot1xAuthVID 3: swDot1xAuthMACAddress 4: swDot1XAuthUserName 5: swDot1XAuthFailReason	1.3.6.1.4.1.171.12.30.11.1.0. 2
swCFMExtAISOccurred	A notification is generated when local MEP enters AIS status. Binding: 1: dot1agCfmMdIndex 2: dot1agCfmMaIndex 3: dot1agCfmMeplIdentifier	1.3.6.1.4.1.171.12.86.100.0. 1
swCFMExtAISCleared	A notification is generated when local MEP exits AIS status. Binding: 1: dot1agCfmMdIndex 2: dot1agCfmMaIndex 3: dot1agCfmMeplIdentifier	1.3.6.1.4.1.171.12.86.100.0. 2

Trap Name	Trap Description	OID
swCFMExtLockOccurred	A notification is generated when local MEP enters lock status. Binding: 1: dot1agCfmMdIndex 2: dot1agCfmMaIndex 3: dot1agCfmMepIdentifier	1.3.6.1.4.1.171.12.86.100.0. 3
swCFMExtLockCleared	A notification is generated when local MEP exits lock status. Binding: 1: dot1agCfmMdIndex 2: dot1agCfmMaIndex 3: dot1agCfmMepIdentifier	1.3.6.1.4.1.171.12.86.100.0. 4

Appendix D RADIUS Attributes Assignment

The RADIUS Attributes Assignment on the Switch is used in the following modules: 802.1X (Port-based and Host-based), and MAC-based Access Control.

The description that follows explains the following RADIUS Attributes Assignment types:

- Ingress/Egress Bandwidth
- 802.1p Default Priority
- VLAN
- ACL

To assign **Ingress/Egress bandwidth by RADIUS Server**, the proper parameters should be configured on the RADIUS Server. The tables below show the parameters for bandwidth.

The parameters of the Vendor-Specific attributes are:

Vendor-Specific Attribute	Description	Value	Usage
Vendor-ID	Defines the vendor.	171 (DLINK)	Required
Vendor-Type	Defines the attribute.	2 (for ingress bandwidth) 3 (for egress bandwidth)	Required
Attribute-Specific Field	Used to assign the bandwidth of a port.	Unit (Kbits)	Required

If the user has configured the bandwidth attribute of the RADIUS server (for example, ingress bandwidth 1000Kbps) and the 802.1X authentication is successful, the device will assign the bandwidth (according to the RADIUS server) to the port. However, if the user does not configure the bandwidth attribute and authenticates successfully, the device will not assign any bandwidth to the port. If the bandwidth attribute is configured on the RADIUS server with a value of "0" or more, than the effective bandwidth (100Mbps on an Ethernet port or 1Gbps on a Gigabit port) of the port will be set to *no_limited*.

To assign **802.1p default priority by RADIUS Server**, the proper parameters should be configured on the RADIUS Server. The tables below show the parameters for 802.1p default priority.

The parameters of the Vendor-Specific attributes are:

Vendor-Specific Attribute	Description	Value	Usage
Vendor-ID	Defines the vendor.	171 (DLINK)	Required
Vendor-Type	Defines the attribute.	4	Required
Attribute-Specific Field	Used to assign the 802.1p default priority of the port.	0-7	Required

If the user has configured the 802.1p priority attribute of the RADIUS server (for example, priority 7) and the 802.1X, or MAC-based authentication is successful, the device will assign the 802.1p default priority (according to the RADIUS server) to the port. However, if the user does not configure the priority attribute and authenticates successfully, the device will not assign a priority to this port. If the priority attribute is configured on the RADIUS server is a value out of range (>7), it will not be set to the device.

To assign **VLAN by RADIUS Server**, the proper parameters should be configured on the RADIUS Server. To use VLAN assignment, RFC3580 defines the following tunnel attributes in RADIUS packets.

The table below shows the parameters for a VLAN:

RADIUS Tunnel Attribute	Description	Value	Usage
Tunnel-Type	This attribute indicates the tunneling protocol(s) to be used (in the case of a tunnel initiator) or the tunneling protocol in use (in the case of a tunnel terminator).	13 (VLAN)	Required
Tunnel-Medium-Type	This attribute indicates the transport medium being used.	6 (802)	Required
Tunnel-Private-Group-ID	This attribute indicates group ID for a particular tunneled session.	A string (VID)	Required

If the user has configured the VLAN attribute of the RADIUS server (for example, VID 3) and the 802.1X, or MAC-based Access Control authentication is successful, the port will be added to VLAN 3. However, if the user does not configure the VLAN attribute and authenticates successfully, the port will be kept in its original VLAN. If the VLAN attribute configured on the RADIUS server does not exist, the port will not be assigned to the requested VLAN.

To assign **ACL by RADIUS Server**, the proper parameters should be configured on the RADIUS Server. The table below shows the parameters for an ACL.

The parameters of the Vendor-Specific Attribute are:

RADIUS Tunnel Attribute	Description	Value	Usage
Vendor-ID	Defines the vendor.	171 (DLINK)	Required
Vendor-Type	Defines the attribute.	12 (for ACL profile) 13 (for ACL rule)	Required
Attribute-Specific Field	Used to assign the ACL profile or rule.	ACL Command For example: ACL profile: create access_profile profile_id 1 profile_name profile1 ethernet vlan 0xFFFF; ACL rule: config access_profile profile_id 1 add access_id auto_assign ethernet vlan_id 1 port all deny;	Required

If the user has configured the ACL attribute of the RADIUS server (for example, ACL profile: **create access_profile profile_id 1 profile_name profile1 ethernet vlan 0xFFFF**; ACL rule: **config access_profile profile_id 1 add access_id auto_assign ethernet vlan_id 1 port all deny**), the device will assign the ACL profiles and rules according to the RADIUS server. For more information about the ACL module, please refer to the ACL chapter.